A Neighborhood Based Transit Strategy for the City of Wilmington

Prepared for:
The City of Wilmington
Delaware Transit Corporation
The Wilmington Area Planning Council

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Introduction

The following report is the result of a unique study commissioned jointly by the City of Wilmington, the Delaware Transit Corporation (DTC), and the Wilmington Area Planning Council (WILMAPCO). The purpose of this study is to assess the delivery of transit services in Wilmington as they specifically relate to the City's economic development goals and neighborhood quality of life. Therefore, while this study has as a primary goal the provision of efficient and effective transit services, it also looks at the transit system from the perspective of how transit can influence individual decisions to live or do business in Wilmington.

This study has been undertaken at a strategic moment, because many forces are at work that will impact the demand for transit service in Wilmington. Specifically, the following major trends call for a reevaluation of transit in Wilmington:

- **Growth in transit usage** that has increased total ridership 25 percent from 1996 to 1999, to nearly 7 million riders a year.
- **Downtown employment growth,** from 37,000 jobs in 1994 to 45,000 today, with further growth expected to reach 60,000 before 2010.
- **Downtown and riverfront housing development,** which will create the first new housing in the downtown area in decades.
- **Riverfront development,** which is creating a major regional destination for entertainment and shopping on the Christina River.
- **The Market Street Trolley,** which will provide Wilmington with a street railway connection between its riverfront and downtown, while also serving as a new tourist attraction.
- **The Wilmington Initiatives,** a program of pedestrian and streetscape improvements that is helping to beautify and reconnect the city at the pedestrian scale.
- **Regional planning priorities** that seek to channel growth into existing developed areas such as Wilmington.

These trends suggest that conditions are favorable for continued increases in transit ridership, and therefore measures to improve transit service in Wilmington — Delaware's largest and most densely populated city — can have a real effect on Wilmington's development potential and livability.

Planning Process

The neighborhood focus of this study required extensive outreach in each neighborhood likely to be affected by changes in transit service. A series of six public meetings were held addressing specific sectors of Wilmington. The workshop format allowed for give-and-take between the planning professionals and the public. In most meetings, the discussion was quite lively and included strong support for service enhancements. The Wilmington City Council also sponsored an open public hearing on transit issues, which was videotaped and televised. Comments from both elected officials and citizens were heard and recorded.

Public outreach was combined with extensive research of both existing transit delivery and the sources of transit demand. Models from around the nation linking transit with land use and neighborhood planning were researched. Demographic and employment data and projections were mapped to show patterns of transit demand factors.

Although an intensive public outreach program was conducted over a short period of time for this study, it should be strongly emphasized that this study represents the beginning, rather than the end of transit-related public outreach. In fact, this study is best viewed as a starting point for future neighborhood transit planning. Many of the recommendations and strategies contained within this report will require further testing and refinement in the community before implementation. They will, however, hopefully provide a launching pad for future efforts to improve transit service in Wilmington.

Project Objectives

Over the course of the public outreach process, a series of objectives for the study emerged. The recommendations and strategies put forward in this report are based on a series of five overarching planning objectives. These are as follows:

1. **Improve mobility for the transit dependent population.** Fundamentally many people who use the transit system today do so simply because they have to. Many neighborhoods have a high concentration of people who can be considered "transit dependent," and the quality of the transit service will have a direct relationship to the life choices available to them, including where they can take a job, where they shop, and what they do with their leisure time.

2. **Provide a viable transit alternative to car ownership.** One key advantage that Wilmington's neighborhoods can offer is the ability for a household with one or more wage-earners to get by with fewer cars than would otherwise be required. The assumption is that even households with the means to afford one or more vehicles might prefer to spend that money on other things, given the choice.

3. **Enhance the identity and image of Wilmington's neighborhoods.** Wilmington is a city of neighborhoods. Each has its own heritage and identity. These neighborhood distinctions offer the opportunity to put a more friendly face on the transit system, by using the system to reinforce and celebrate each neighborhood.

4. **Complement economic development efforts throughout the city.** Transit helps support downtown development efforts, where development depends upon maximum access to the full regional labor force and consumer base. Transit also helps reduce demand for parking, hence allowing land to be devoted to other uses. A key goal should be to extend this same benefit to the riverfront, which currently lacks good transit access. Moreover, transit can also provide incremental help to neighborhood commercial corridors.

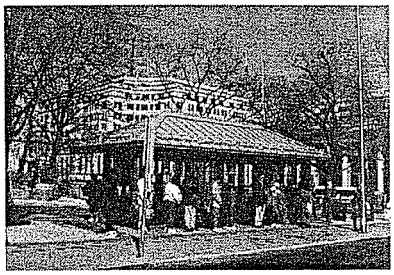
5. **Increase transit ridership.** Back to basics, meeting all of the objectives listed above still means increasing transit ridership. This in turn will require addressing service quantity and quality; marketing; land use patterns; the walking environment; and roadway conditions.

Major Findings

- DTC already operates an extensive network of bus routes providing excellent coverage to Wilmington's neighborhoods. The coverage, level of service, and hours of service is superior to many cities of Wilmington's size. Many current users speak favorably of the weekday service, but less favorably of the weekend service.

- The service enhancement most desired by Wilmington's residents is service on Sunday. Residents want Sunday service to access shopping, recreation, and church, in addition to work sites for those who work on Sundays.

- The second most desired service enhancement is routes that run later at night. A particular need is a later run leaving from the shopping malls, both to carry employees home, as well young people attending movies. Some after hours service is currently being provided by DTC's new Night Owl subscription service.



Wilmington's urban density supports transit.

- Wilmington has many of the attributes that support transit use. These include a dense concentration of downtown employment, high residential densities, and a large proportion of households with no vehicle or one vehicle. Wilmington's compact form also supports significant amount of walking for both commutes and other transportation needs.

- The transit network is a key asset distinguishing Wilmington's neighborhoods from suburban residential areas. Transit has direct impacts on neighborhood quality of life and economic development by providing increased mobility and access to jobs, and reinforcing commercial areas. The lower transportation costs experienced by transit-using households can be used to allow households to qualify for more favorable mortgages on houses in Wilmington.

- The most concentrated areas of transit demand are found along the West Fourth Street Corridor, along North Market Street, and in West Center City and the East Side. Neighborhoods along Northeast Boulevard have a high proportion of transit dependent households, hence need, but have a much lower population density than these other corridors. There is also substantial demand from Trolley Square residents, owing the to high population density. Trolley Square is also the most likely source of latent demand—people who are not riding now, but might if better service were offered.

- Downtown is the primary in-town destination. The riverfront attractions are growing in popularity as a destination, a trend that is likely to continue as development increases. Other popular in-town destinations include shopping at Trolley Square, the Little Italy restaurant row, the hospitals, and Brandywine Park.

- Important out-of-town destinations include the Concord, Christiana and Tri-State malls.

Employment concentrations along Route 202 and Route 4/Christiana Road/Churchmans Road are important reverse commute destinations for Wilmington residents.

- The advent of trolley service in the downtown and on the riverfront will require a rethinking of the existing bus and transit network, both to better connect neighborhoods with the trolley, as well as to eliminate redundancy between the existing downtown bus service and the future trolley service. Reconfiguring the bus network around the trolley also provides the opportunity to enhance mobility in the neighborhoods generally.

Recommended Transit Strategies

Sunday and Night Service

- **Implement a Sunday bus service connecting those neighborhoods with the greatest number of transit riders with the in-town and suburban destinations that are most likely to attract weekend riders.** Three Sunday service options are presented for Wilmington:
  Option 1: Single Fixed Route. A bus originating at West 4th and Union will travel through Browntown to the riverfront, into downtown, past Rodney Square, through the Northeast neighborhoods, and up Concord Avenue and Route 202 to the Concord Mall.
  Option 2: Route 202 Connector plus In-Town Circulator. A route stretching from the riverfront to the Concord Mall and including Browntown will be combined with a circulator route connecting Northeast Boulevard, North Market Street, Trolley Square, Union Street, West 4th Street, Southbridge, and Rodney Square.
  Option 3: Option 2 plus Christiana Mall. A route from Rodney Square to the Christiana Mall via Maryland Avenue and Route 4 will be added to Option 2.

- **Explore the option of addressing access to Sunday church services with a subscription-style shuttle bus service similar to the Night Owl.** For journey-to-church, the origins and destinations are too diverse to serve with a fixed route system. Fortunately, the demand for this type of service occurs at regular and predictable times, making a scheduled subscription service a possible option.

- **Continue to promote and expand the new Night Owl service.** The Night Owl service is an important initiative to provide transit service to second and third shift workers, as well as Sunday workers, who do not have access to an automobile.

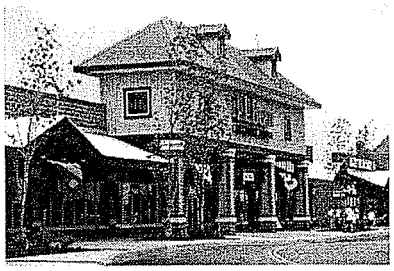
- **Market the Night Owl service directly to riders as well as to employers.** This would help attract a greater range of riders to the service, without compromising its Welfare-to-Work focus.

- **Extend existing night service on routes that have it until 11 PM or later.** This modest change, adding an extra 30 minutes of service from Rodney Square, will help the service take in more night workers, as well as discretionary riders dining or attending events downtown.

- **On a trail basis, extend service on the in-town Route 10 bus until 10:30 or 11 PM.** This will test the market for discretionary riders at this time of the night.

- **Extend the City Circuit service to at least 9:30 PM six days a week.** Extending the hours of service will make it more feasible for downtown workers and neighborhood

residents to access the riverfront via transit, knowing that they won't be stranded if they stay for dinner. Extending the service to 9:30 will also allow mall employees to ride this bus home from work.



The Riverfront attractions would benefit from enhanced transit service.

Suggested Route Changes

- **Extend the Route 1 bus route to include the riverfront.** Riders on this route, which is the busiest in the system, would have a transfer-free connection to the riverfront attractions.

- **Reroute the off-peak, inbound Route 5 bus down Beech Street and through the riverfront.** This will provide better access to the riverfront for Browntown residents, as well as residents of Elsmere and other communities to the southwest.

- **Reroute the in-bound Route 4 bus through the middle of the Adams Four shopping center.** Running a bus through the middle of the center will provide a higher level of convenience for shoppers and will provide increased visibility for stores. The new stop will also create the opportunity for building a new landscaped amenity in the currently bleak parking lot.

- **Reroute the northern part of the City Circuit on to Delaware Avenue, up West and/or Washington Streets, and back on 13th Street.** This minor change will allow the City Circuit to more directly address the full extent of the office district, the downtown hotels, and the Christiana Care hospital and surgical center.

- **Split Route 10 into an in-town portion and a suburban express portion.** This recommendation addresses reliability and scheduling issues on this route.

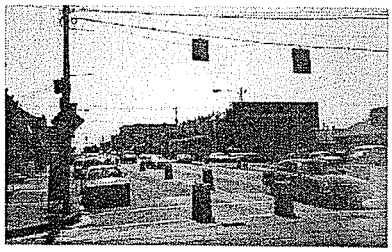
Frequency of Service

- **Create a formal procedure to evaluate crowding conditions on buses.** This should include not only better quantitative data, but also regular reports from bus drivers regarding conditions on their route.

- **Consider making West 4th Street more of a transit corridor, with more buses entering and exiting on West 4th between downtown and Union Street.** Placing one more route on 4th Street would improve service in this transit-dependent corridor, while also better connecting Little Italy with the downtown.

- **Add buses on routes experiencing crowded conditions.** Alternatively, crowding might be addressed by "turning back" more buses near the city border.

- **Experiment with more frequent service on the Route 10, as part of the recommended splitting of the route into in-town and suburban service.** This will help test the hypothesis that more discretionary riders can be attracted with higher levels of service.



A wide, four-lane street, West 4th would make an excellent transit corridor.

Stops, Facilities and Amenities

- **Reduce the number of stops in Wilmington.** Consolidating the stops will increase service speed, justify a higher level of amenity at remaining stops, and minimize bus and vehicular conflicts.

- **To mitigate the loss of stops, implement a request-a-stop policy during off peak hours.** This not only increases convenience, it can also help increase public safety by placing riders closer to their doors.

- **Provide increased information, including route maps and timetables, at every major bus stop.** Over time, expand this information to include all, or at least the majority of, transit stops.

A contract with an outdoor advertising company could provide shelters like this one in Philadelphia at every stop along major traffic corridors.

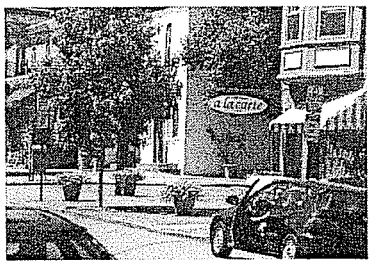
- **Provide full system information at the train station bus waiting area.** Make it clear to passengers arriving by train that there are 11 bus lines that can take them to Rodney Square and intermediate destinations.

- **Provide stops with benches and shelters at every senior residence, on both sides of the street.** Where senior housing does not front directly on a bus route, the shelters and benches should be provided at the nearest bus stops to the housing.

- **Supplementing the policy of putting shelters at points of greatest demand, implement a policy of providing attractive shelters at key commercial nodes, and providing attractive shelters at neighborhood focal points.** DTC should work with neighborhood planning councils and local merchants to identify key neighborhoods nodes that would be appropriate for a signature stop.

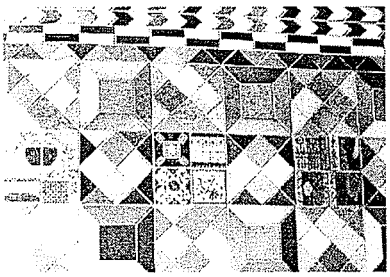
- **Partner with adjacent merchants to provide better amenities at bus stops.** These improvements could be funded through matching grants.

- **Create and implement an "Arts for Transit" program to help dress-up and beautify transit stops throughout the city.** Adding art to transit stops has proven to be one of the best, and most cost-effective, ways to enhance the image of the transit system and make it more "fun" to use.

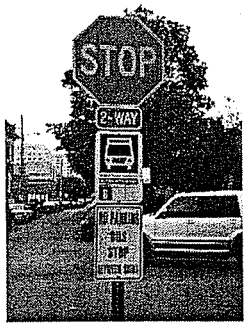


Both the merchant and the bus stop...

...would benefit from a simple bench like this one.



Art can be a low-cost way of enhancing transit facilities.



Many DART stops need more eyecatching signage.

- **Partner with community groups to create an "Adopt a Stop" program.** Involving community residents with the landscaping, beautification and upkeep of transit stops can be a wonderful tool for outreach and for creating a sense of ownership over these facilities.

- **Consider contracting with an outdoor advertising agency to provide more bus shelters.** While foisting more advertising on the public, this strategy would also provide a much greater number of shelters without costing DTC any money.

- **More clearly delineate bus stops and waiting areas, even in the absence of benches or shelters.** One strategy is to create a splashier DART sign to affix to each stop; another low cost strategy would be to define stops and waiting areas using colored paint and striping on the sidewalk and street bed.

Customer Service and Safety

- **Institute a dedicated hot line for complaints that includes procedures for follow-up.** Following up on complaints with call-backs or letters will make it clear that DTC takes public input seriously and acts upon it when appropriate.

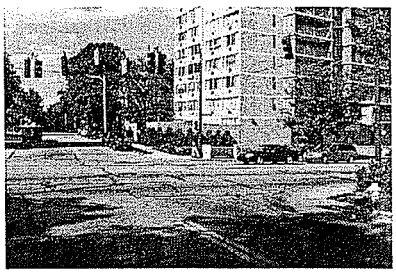
- **Partner with a program such as the American Public Transportation Association's Transit Ambassador program to provide enhanced sensitivity and security training for drivers.** This type of training gives drivers the tools they need to effectively manage the wide variety of situations they are likely to encounter on the job, situations which will often require on-the-spot decisions and judgment calls.

- **Ensure that all drivers are well-trained in the use of the wheelchair securements.** This is a basic function that every driver should be able to perform quickly and efficiently.

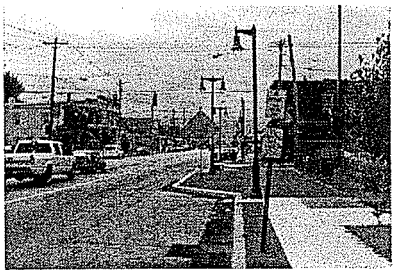
- **Launch a public relations campaign aimed at passengers to promote courtesy.** This can take the form of on-board advertising, as well as a clearly posted sign in each bus outlining do's and don'ts for transit riders

- **Continue efforts to increase security through the use of cameras and emergency call systems.** Security cameras can have a big impact on bus security. The emergency alert system should provide the police with information as to bus location, direction and speed, enabling faster response times.

Recommended Land Use and Urban Design Strategies



Many intersections lack crosswalks.



Wilmington Initiatives streetscape upgrades complement enhanced transit facilities.

The Walking and Transit Environment

- **Install a new signalized crosswalk between 8th and 9th Streets on King Street, aligned with the popular pedestrian cut-through to Market Street.** This will help facilitate safer pedestrian flow and will also slow traffic on King Street.

- **As part of downtown and riverfront design guidelines, include regulations governing transit access and the pedestrian environment.** These guidelines might include requirements for bus stop facilities for developments fronting on transit routes; set-asides for pedestrian spaces and amenities; and regulations prohibiting blank walls and other street-deadening features.

- **Stripe and signalize more crosswalks on major traffic arteries such as Pennsylvania Avenue.** Intersections adjacent to residential concentrations should be emphasized.

- **Implement pedestrian-friendly design standards on future Hope VI reconstructions of public housing.** With the high number of households with no vehicle, as well as the significant numbers of children, providing pedestrian enhancements for these developments should be a high priority.

- **Install pedestrian scale lighting along transit and pedestrian corridors in high-crime areas, particularly West 4th Street.** Pedestrian-scale lights shine equal amounts on the streetbed and sidewalks, increasing the feeling of security.

- **Provide adequate pedestrian walkways for all of Wilmington's bridges.** Most bridges already have good walkways for pedestrians. However, some bridges such as the 4th Street Bridge, could be improved.

- **Continue to build on the accomplishments of the Wilmington Initiatives in improving the pedestrian quality of Wilmington's streets and sidewalks.** These projects have had a transforming effect on streets throughout the city.

Auto Parking

- **Expand employer adoption of transit pass programs.** Encouraging wider adoption of these programs is largely a matter of better marketing the benefits, as well as provding technical assistance to walk corporate human resource departments through the process.

Market Street Trolley

- **Involve the downtown merchants, residents, and business community throughout the planning and construction phase, to help minimize the disruption caused by the trolley's construction.** While a major infrastructure project such as the trolley cannot be undertaken without some impact, by meeting regularly with the affected parties throughout the planning and construction process, it should be possible to craft a strategy for minimizing the disruption

- **Use the trolley as a marketing hook for the rest of the transit system.** This may involve a logo with a trolley on it. The trolley facilities can also disseminate transit information to a wider audience. Trolley riders should also be made aware of other destinations they can reach via DART buses.

- **Provide trolley stops where bus routes intersect the trolley line.** These would certainly include 9th, 4th and 2nd Streets, as well as at the proposed bus facility near the Train Station.

- **Use a proposed transit center at the train station to connect the trolley, the buses, and the train station into one seamless transportation system.** The new transit center should be designed to effectively extend the train station to the trolley, and should provide very detailed transit information aimed as much at the out-of-town visitor as the regular transit rider.

- **Undertake a detailed study examining the use of through-routes to better feed the trolley and serve Wilmington's residents.** Through-routes would replace the existing downtown loops, and would allow more destinations to be reached without a transfer.

- **Also undertake a neighborhood circulator study, to expand upon the options presented in this report.** Two options are proposed: (1) a single bi-directional loop, based on the Sunday service loop; and (2) a four-loop circulator system which would connect every neighborhood directly with the trolley, with a grocery store, and with each other. Option (2) would also serve nearly every senior residential facility in Wilmington.

- **Implement circulators initially on weekends, supplementing the existing Saturday service and replacing the proposed in-town portion of the Sunday service.** This new circulator service should be frequent and convenient. With either option, as many vehicles should be assigned to the service as is feasible, to reduce headways.

- **As the trolley gains in popularity, provide additional transit links connecting other attractions to the trolley.** Possible ideas include a shuttle to and from the Little Italy restaurant row, and a circulator connecting the trolley with museums and tourist attractions

- **Expand employer adoption of parking "cash out" policies.** Under this program, employers would pay employees directly the market value of their parking, and then charge them the same if they use it. People traveling by other means could pocket the cash. Both the TMA and DVRPC are currently involved with promoting transit pass and parking cash out programs.

Rethinking Retail Corridors

- **Revise the C-1 use regulations such that gasoline service stations are not permitted, even by special exception.** Such uses should be restricted to major thoroughfares, intersections near highway exits, and other areas with a heavier commercial flavor.

- **Undertake a series of retail corridor studies for each of Wilmington's neighborhood commercial streets.** The purpose of each study will be to see where commercial revitalization, zoning and transit services and stops should be reduced, changed, or tweaked.

Retail corners need a special land use category.

- **As part of the Hope VI reconstruction of public housing in the northeast section of Wilmington, reconsider the function of Northeast Boulevard.** The looming reconstruction of some of this housing provides both the motivation and opportunity to rethink this corridor, which has lost its retailing energy, with the result that this street does not address the needs of drivers or adjacent residential areas.

- **Pursue a "four corner" strategy for selected retail corner locations.** This would involve three complementary actions:
  - Mapping the corner retail location with a special corner retail overlay zoning district;
  - Pursuing landscaping and traffic calming improvements to the corner that would clearly distinguish its commercial nature; and
  - Where appropriate, locating a bus stop at the corner, with at least a bench, and preferably a shelter.

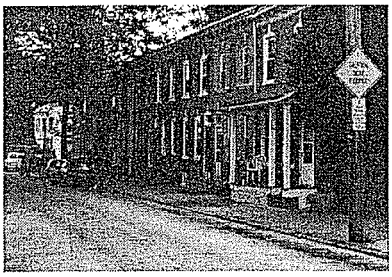
  The new zoning designation would allow retail stores as-of-right, but would put strict controls on both the allowed uses and related elements such as signage.

- **Pursue a drugstore for the site at the intersection of Northeast Boulevard and 12th Street.** These types of stores often function like general stores, and would greatly expand the range of goods available to area residents.

- **Provide inbound and outbound bus stops on Route 1 serving the Superfresh supermarket on North Market Street.** The closest stop inbound is down the hill from

this grocery store, and the pedestrian access requires negotiating several stairs and a tunnel-like approach. The stop should instead be located on the corner of North Market and Lea Boulevard.

Transportation Improvements



Transit can be leveraged to assist homeownership.

- **Properly signalize the intersection of Union Street and Pennsylvania Avenue.** Since Union is one-way southbound at this point, there is high demand for left turn movements onto Union from west-bound Pennsylvania, but this turn is quite difficult for both buses and cars.

- **Construct a new bridge connecting the Riverfront with Route 13/South Market Street in South Wilmington.** A new bridge over the Christina River would provide significant advantages. Commuter buses coming up Route 13 from the south, of which there are many, could now be routed through the riverfront. It would also increase regional transit access to the riverfront, and eventually, the trolley.

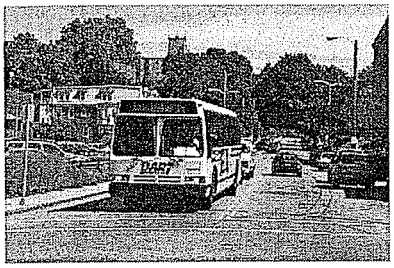
- **Improve access to the Riverfront from Browntown via Beech Street.** Access to the riverfront from Browntown and Hedgeville is problematic because the only access point, Beech Street, is too narrow to accommodate normal two-way traffic. Widening this street will facilitate both vehicular movement as well as future bus routes.

Recommended Housing Strategies

- **Conduct a feasibility study to determine if the Location Efficient Mortgage (LEM) would be useful as a tool in Wilmington.** LEMs are 15- to 30-year fixed-rate mortgages for single-unit, owner-occupied houses and condominiums. They allow borrowers to qualify for higher mortgages than under traditional lending guidelines, based on the calculated additional income available for mortgage payments as a result of savings in transportation expenses resulting from living in a more location efficient area. The study would assess the applicability of the program to Wilmington's neighborhoods by estimating their "location efficient value." It would also assist the City in making a case to Fannie Mae for a commitment to purchase LEMs.

- **Pursue both the Downtown Walk to Work Mortgage and Employer-Assisted Housing programs in Wilmington.** The Downtown Walk to Work Mortgage is a low down-payment mortgage that takes into account savings realized in commuting expenses as the result of homebuyers living within walking distance of their place of employment. Employer assisted housing programs have been sponsored by Fannie Mae in many cities around the country, and can leverage Wilmington's concentration of major employers to increase homeownership in the City.

1 Introduction



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This study is undertaken at the same time as a state-wide review of DTC's bus services, and represents a more detailed overlay on that study. This level of detail is justified, in that Wilmington, as Delaware's largest city, represents its most concentrated center of both jobs and population. Moreover, this study is occurring at an extremely opportune moment, because many forces are at work that will impact the demand for transit service in Wilmington. Specifically, the following major trends call for a reevaluation Wilmington's transit network:

- **Growth in transit usage** that has increased total ridership 25 percent from 1996 to 1999, to nearly 7 million riders a year.
- **Downtown employment growth** that has increased the number of jobs from 37,000 in 1994 to 45,000 today, with further growth expected to reach 60,000 before 2010[1].
- **Downtown and riverfront housing development,** which will create the first new housing in the downtown area in decades.
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- **The Wilmington Initiatives,** a program of street and streetscape improvement projects, which are helping to beautify and re-connect the city at the pedestrian scale.
- **Regional planning priorities** that seek to channel growth into existing developed areas such as Wilmington.

Each of these trends suggests that conditions are favorable for continued increases in transit ridership, and therefore measures to improve transit service are appropriate. The economic and development environment in Wilmington and the surrounding region provides a rare opportunity to reinvest in the bus transportation system and to experiment with service enhancements and new routes, with a real possibility of attracting more ridership.

The following report looks at transit in Wilmington from a number of perspectives. Chapter 2 is a think piece on the role of transit in enhancing overall quality of life, and draws on examples from around the nation. Chapter 3 puts the current state of the system in historical perspective. Chapter 4 provides an overview of the existing transit service. Chapter 5 examines

1. SG Associates, Inc., *Wilmington Transportation Studies: Transit Shuttle Feasibility Analysis,* City of Wilmington, DelDOT and WILMAPCO. May 1998.

the intersection between transit and land use patterns in Wilmington. The overall objectives for the transit study are outlined in Chapter 6. Chapters 7 and 8 then present a series of strategies for improving transit delivery and enhancing neighborhoods. Chapter 7 concentrates on the transit system itself, while Chapter 8 deals with related issues including land use and parking policy, commercial revitalization, and traffic improvements. The final chapter looks at two particular tools for linking transit with the housing market—the Location Efficient Mortgage and the Downtown Walk to Work mortgage—and how these might be applied in Wilmington. Finally, Appendix A provides results from the neighborhood meetings, and discusses planning issues in each neighborhood.

This report would not have been possible without the assistance of the following people and entities:

- Mayor James Sills of Wilmington
- The Wilmington City Council
- The Wilmington Department of Public Works
- The Wilmington Department of Real Estate and Housing
- The Wilmington Department of Planning
- The Wilmington Department of Economic Development
- The Delaware Transit Corporation
- The Wilmington Area Planning Council
- Neighborhood Planning Councils

Public Outreach Process

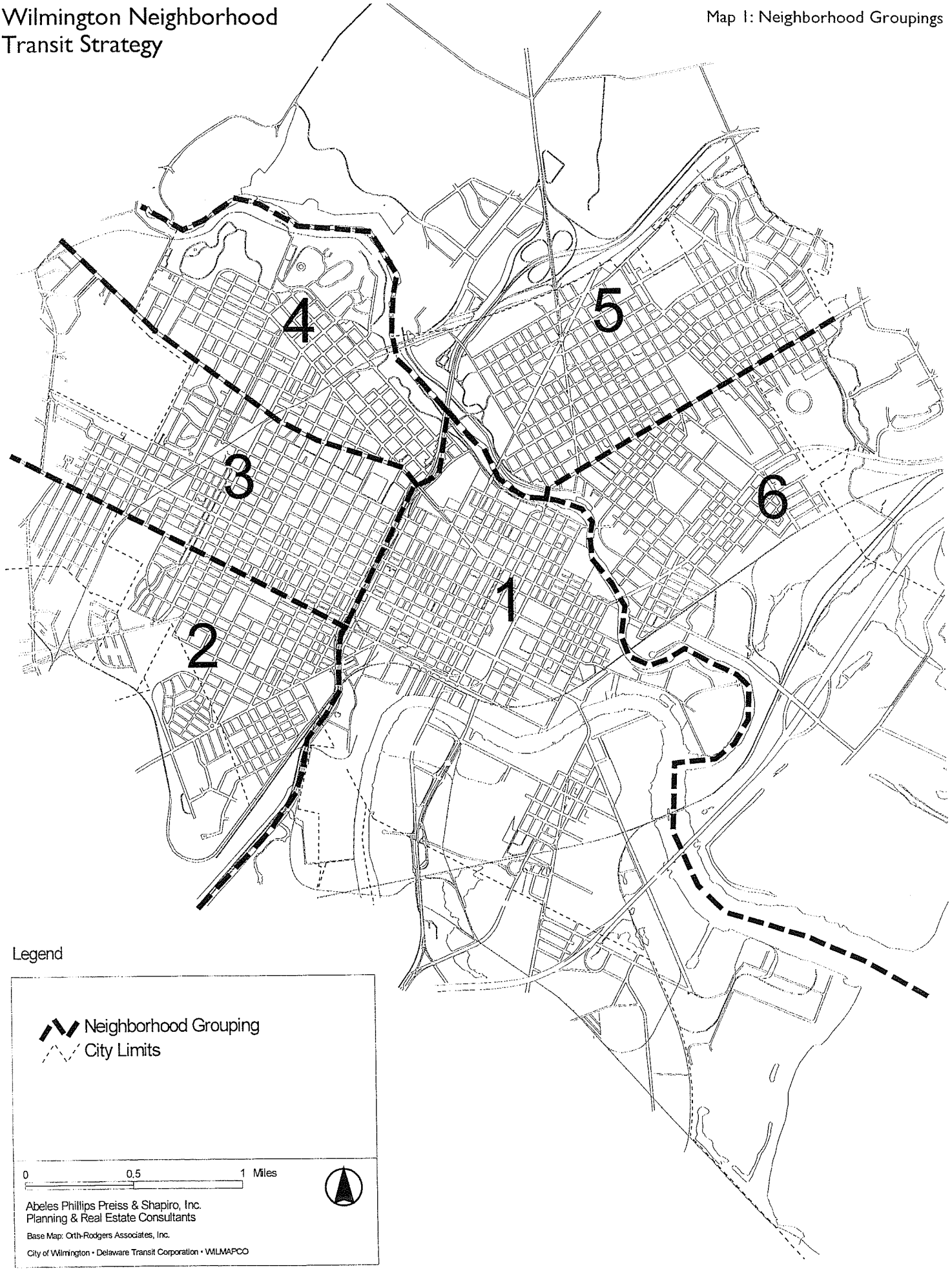
This neighborhood-based transit strategy required extensive outreach in each neighborhood likely to be affected by changes in transit service. A series of six public meetings were held addressing specific sectors of Wilmington. These sectors consisted of two or more neighborhoods grouped together on the basis of geography, accounting for natural and man made barriers, and addressing specific transit routes and corridors. The neighborhood groups are shown on *Map 1: Neighborhood Groupings.*

Each neighborhood workshop used a similar format. First, there was an introduction to the project and its purpose, followed by a slide show highlighting different transit related issues. Then the floor was opened for discussion of transit and related issues. The workshop format allowed for give-and-take between the planning professionals and the public. In most meetings, the discussion was quite lively and included strong support for service enhancements. At the end of the meeting, the major points were summarized.

The Wilmington City Council also sponsored an open public hearing on transit issues, which was videotaped and televised. This included the same introduction and slide show as was used

Wilmington Neighborhood Transit Strategy

Map 1: Neighborhood Groupings



Legend

Neighborhood Grouping
City Limits

0 0.5 1 Miles

Abeles Phillips Preiss & Shapiro, Inc.
Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

City of Wilmington • Delaware Transit Corporation • WILMAPCO

in the neighborhood workshops. Comments from both elected officials and citizens were heard and recorded.

In addition to the public outreach, there was also ongoing dialog between the consultants and the Department of Public Works, DTC, and WILMAPCO.

Although an intensive public outreach program was conducted over a short period of time for this study, it should be strongly emphasized that this study represents the beginning, rather than the end of transit-related public outreach. In fact, this study is best viewed as a departure point for future neighborhood transit planning. Many of the recommendations and strategies contained within this report will require further testing and refinement in the community before implementation. They will, however, hopefully provide a launching pad for future efforts to improve transit service in Wilmington.

2 Transit and Quality of Life: Case Studies and Policy Implications

Transit is an essential component of life in Wilmington. Buses carry workers to their downtown jobs and bring residents to their shopping and entertainment destinations. Wilmington's compact urban form, concentrated central business district, and relatively dense neighborhoods help support transit and pedestrian circulation. The current transit system provides excellent coverage, and connects most major destinations in the city and suburbs. However, there is a growing sense that the transit system could provide even better service in Wilmington, particularly in light of increases in both ridership and economic development. Improved transit services, better coordination with land use and intensity, and integration with urban design can make the bus system more accessible and useful, and can provide new opportunities for development and revitalization.

This chapter explores the relationships between transit, development and revitalization, and neighborhood quality of life. The discussion focuses on national trends, and includes national case studies that provide insights into coordinated transit-neighborhood planning. Not all of the national trends have counterparts in Wilmington, yet they help to understand transit issues in Wilmington by providing a basis for comparison. Where appropriate, comparisons between the Wilmington experience and other transit cities are noted.

1.1 Transit Planning: A National Overview

Before widespread auto ownership in the 1920s, most urban residents could reach day-to-day shopping and services on foot, and could reach their jobs either by walking or via transit. As cars became more widespread, however, transit ridership fell drastically, and many transit agencies cut services or went bankrupt. Those that remained in operation were supported by heavy public subsidies.

Since World War II, many neighborhoods in the United States have been planned in such a way that a car is absolutely essential. Even in older urban neighborhoods such as Wilmington's, the ongoing suburbanization of jobs and stores has reinforced this auto-orientation. It is often difficult or impossible to reach these suburban destinations on foot or via transit.

Transit Renaissance

Despite the predominance of auto-oriented planning, the combined problems of traffic congestion, automobile emissions, and the OPEC energy crisis renewed interested in transit in the 1960s and 1970s. New regional rail systems were built in San Francisco/Oakland, Washington D.C., and Atlanta. Since then there have been new light rail investments in San Jose, Los Angeles, Dallas, Boston, St. Louis, Portland (Oregon), Sacramento, Baltimore, Buffalo, the Hudson riverfront in New Jersey, and other cities. Building on this new trend, and reacting to problems of auto-oriented sprawl, the 1991 Intermodal Surface Transportation Efficiency Act ushered in the era of multi-modal transportation planning. The Interstate Highway System was declared complete, and federal funding was directed to projects that planned for pedestrians,

bicycles, carpools, and transit, in addition to roadways.

Inner City Bus Service

While there was renewed interest in transit nationwide, most new transit initiatives concentrated on suburban-oriented rail and bus projects, rather than expanding inner-city bus services. This is due to the spread of population, wealth, and public investment from central cities out to suburban areas previously devoid of public transportation options.

As operating costs rise and federal subsidies are reduced, system-wide service cuts and consolidations disproportionately affect inner-city bus service where radial bus routes congregate. Inner city riders must crowd onto buses already filled with passengers from outlying communities. As a result, the people with the lowest incomes and the fewest cars, who are the most transit-dependent, are often inadequately served by their local transit systems. This manifests itself in the form of long wait times, irregular headways, inconvenient transfers, and limited hours of operation.

Transit service in Wilmington has suffered less than in other cities. Although a substantial amount of emphasis has been placed on commuter-oriented services, Wilmington residents still enjoy the highest of service in the state, and overcrowded buses are exceptions to the norm. However, the hours of operation of certain routes, and the lack of Sunday service, have limited the mobility of Wilmington's inner-city residents.

Transit-Oriented Planning

When the transit "renaissance" started, it was widely believed that transit in and of itself would help shape development patterns. Just as property values around new highway interchanges tend to increase, it was thought that values around mass transit corridors and stations would increase, attracting high-density housing, offices, and hotels. In reality, this has not always happened.

Residential property values around transit stations have increased only in metropolitan areas that have very high residential and employment densities, well-developed transit systems, and a compact, pedestrian-oriented pattern of development. Non-residential property values may also increase, but increases have been observed mostly in downtown locations. Suburban commercial nodes may have higher land values near transit stations, if they are found in regions with excellent rail networks—like Washington D.C.—but in most metropolitan areas, proximity to suburban transit stations has little or no impact on land values. [2] In Atlanta, downtown rezoning encouraged new office development around the central city MARTA stations, but stations outside downtown—such as the West End, Ashby, Vine City, Garnett Street stations—have attracted very little growth overall. [3] This is to be expected—offices and retail require maximum access to a commuting shed or trade area, and therefore prefer to locate at the intersection of several transit lines, or at a transit stop at a highway exit, instead of a stand-

2. Federal Transit Administration, Transit Cooperative Research Program, TCRP Report 16: Transit and Urban Form, vol. 1. Washington D.C.: National Academy Press, 1996, pp. 26-28.

3. Bert Roughton, Jr. "MARTA: So Far So Good," Planning, vol. 55, no. 4, April 1989, pp. 14-18.

alone stop along the way.

Nevertheless, when transit is planned in coordination with land use, intensity, and urban design, it can play an important role in enhancing urban quality of life, making neighborhoods more livable and shopping areas more vibrant. More specifically, it can:

- Provide alternatives to driving and reduce auto-dependency;
- Support higher density living environments; young professionals, students, downtown workers, and some senior citizens especially prefer such environments.
- Reinforce pedestrian activity in major commercial retail nodes; and
- Create opportunities for infill development and redevelopment in underutilized areas.

Planning for Bus Corridors and Stops

Much of the literature on "transit-oriented development" has focused on rail systems. However, many of the principles of rail-oriented planning also apply to bus routes and stops. Mixed-use, high-density, and pedestrian-oriented design can promote bus ridership in an urban setting. One major difference between rail and bus is that rail-oriented planning can only be focused at rail stations, whereas bus-oriented planning can be applied along an entire linear route. Trains generate pedestrian activity only at specific nodes, whereas buses have more frequent stops and generate activity along entire corridors.

Regional Growth Management

Transit-oriented planning can also help achieve many of the regional planning objectives promoted by WILMAPCO, including controlling sprawl and directing growth into existing centers. Also, the Delaware Transit Corporation (DTC) Five-Year Business Plan has adopted a goal to "foster statewide livability and sustainable development" and has identified transit-oriented design as one strategy for achieving that goal.[4] Mixed-use, high-density, and pedestrian-oriented development—combined with improved transit services—can increase opportunities for commuting via transit and can allow people to make local walking and biking trips for shopping and services. As a result, people who live in transit-oriented neighborhoods can be less auto-dependent. In fact, studies have shown that per capita vehicle-miles traveled is significantly less in densely developed areas, and walking and transit use account for a greater proportion of total trips.[5]

Provisions for high-density development, when combined with regional open space protections, can help channel regional growth into concentrated nodes. This could help reduce sprawl in the metropolitan region. For example, Montgomery County, Maryland has successfully channeled growth to Metro station areas through a multi-faceted growth management program:

- Station-area plans in Bethesda and Silver Spring allow for high-density residential and

4. Parsons Brinckerhoff Quade & Douglas, Inc., *Delaware Transit Corporation Five-Year Business Plan, Land Use White Paper,* July 2000, p. 1.

5. Dunphy, R. and Fisher, K. "Transportation, Congestion, and Density: New Insights." *Transportation Research Record NO. 1552.* Washington DC: Transportation Research Board, 1996, pp. 89-96.

commercial development;
- Corridor-style strip development was restricted, and development nodes were designated not only around the Metro stations, but also at major highway interchanges.
- A transfer of development rights program has helped save thousands of acres of farmland.

While the County has still experienced the effects of sprawl, traffic congestion, and air pollution, it has been able to the reduce the negative impacts of those trends and has planted the seeds of more sustainable development patterns.

Traffic Congestion

Transit-oriented development is often touted as a solution for metropolitan traffic congestion, even though transit-oriented development cannot eliminate congestion completely. While it is true that even the most transit-friendly cities—like New York City, Chicago, Boston, Washington D.C.—experience frequent if not notorious traffic delays due to peak-hour travel demand and entertainment-oriented trips, these delays would be even worse without the extra capacity provided by transit. In fact, transit service succeeds most where and when it is an outlet and alternative for frustrated automobile commuters and travelers.

Transit-oriented development clearly generates less congestion than typical auto-oriented development. A long-term, regional commitment to transit-oriented planning—as in the Arlington, Virginia case study discussed later—could reduce the expected future levels of traffic congestion in the metropolitan region.

Air Quality

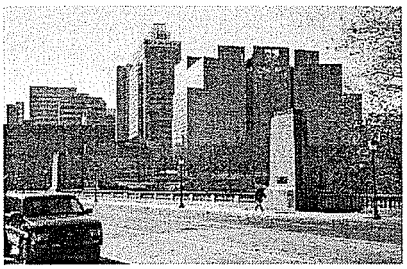
Transit improvements are in a position to improve air quality in two ways. First, by shifting some drivers to transit, stop-and-go traffic, which causes high levels of carbon monoxide, is lessened. Second, by lessening the amount of driving in a metropolitan region, transit can lessen the emission of those pollutants that cause ozone-producing gases.

Despite transit improvements (and technological advances in automobile engines), air quality has worsened in many parts of the country. Wilmington, in fact, was recently declared a non-attainment area for federal air pollution standards. Ongoing increases in vehicle miles traveled (VMT) and vehicle hours traveled (VHT) have dampened the air quality improvements of transit, cleaner engines, and other strategies. VMT and VHT continue to increase, partly because new development is so dispersed and auto-oriented. Transit-oriented development could help limit the increases in VMT and VHT by providing a viable alternative mode of travel.

1.2 Transit and Neighborhoods in Wilmington

The history, character, and demographics of Wilmington are discussed in greater detail in the

following chapters of this report. However, this section provides a brief overview of the city's development pattern and layout within a regional and statewide context. It also discusses some of the critical issues regarding transit and neighborhood planning that Wilmington is now facing.



Downtown Wilmington is a regional employment center.

Downtown Wilmington

Wilmington is the largest city in Delaware, and has the state's largest central business district (CBD). Although many new jobs located in suburban office parks between 1960 and 2000, Wilmington is still the economic heart of the state. Downtown has about 45,000 jobs[6], and the city as a whole has 71,000 jobs[7]. One out of every eight jobs in the entire state is located in downtown, and one out of every five jobs in the state is located within the City limits. With a population of only about 72,000, Wilmington has a very high concentration of jobs relative to the size of the city. In fact, the ratio of jobs to population is perhaps higher than any other comparable city in the nation. Downtown Wilmington is known as the national capital of credit card companies.

Downtown workers come from all neighborhoods in the city, as well as outlying suburbs. In some of the neighborhoods located closer to downtown, a quarter or more of all workers walk to work, according to the 1990 census. Increased commuting via transit—whether from home or from remote parking lots—could help decrease parking demand and potentially increase the portion of downtown land that can be devoted to commercial development.

Transit Access

Transit access to downtown is critical to maintain Wilmington's economic health. Many downtown workers already rely on transit, because of the limited parking supply, high parking costs and the compact scale of downtown. According to parking studies, downtown was functioning with a floorspace to parking ratio of around 2.5 in 1997, less than the ratio of 3.0 often found in urban areas, and much less than typical suburban ratios of 4.0 or more[8].

In the future, downtown Wilmington will continue to rely on transit to grow. Projections indicate that the core downtown area will expand from 45,000 jobs to about 60,000 jobs before 2010. The only way to accommodate 60,000 commuters in Wilmington is to have a significant share arrive via means other than driving along, because the high downtown employment densities make it prohibitively expensive to provide a parking space for each downtown worker. If the transit services do not grow to meet the needs of downtown, many jobs could flow to suburban communities instead, further fueling the process of sprawl.

Compact, Pedestrian-Oriented Neighborhoods

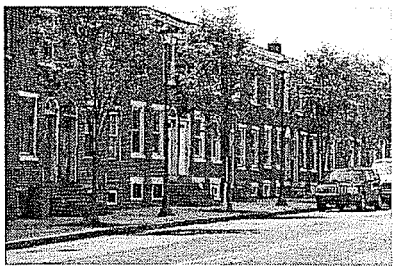
As an older city, Wilmington is almost fully built out. Many neighborhoods predate the 1920s, when automobiles became affordable to the majority of the population. These neighborhoods were built for pedestrian and transit access. They have higher densities than post-War neigh-

6. SG Associates, Inc., *Wilmington Transportation Studies: Transit Shuttle Feasibility Analysis,* City of Wilmington, DelDOT and WILMAPCO. May 1998.

7. TransManagement, Inc. *Downtown Wilmington Land Use and Development Capacity Assessment,* Wilmington Area Planning Council. August, 1997.

8. *Wilmington Parking Authority Central Business District Parking Study,* Orth-Rodgers and Associates, November 20, 1997.

borhoods, and many houses have no garages or driveways. Many neighborhoods have traditional neighborhood shopping areas and corner stores that can be reached on foot.



Wilmington neighborhoods are compact and pedestrian-oriented.

Such development patterns are ideal for transit. They have the densities, compact form, and mixed uses that can support frequent daily service, not only during commute hours but also during off-peak periods and weekends. Moreover, these neighborhoods are a great "character" asset for Wilmington. Townhouse neighborhoods throughout the country (as in Brooklyn, Boston, Philadelphia, and Washington D.C.) have experienced a resurgence in popularity in the 1990s. (The revitalization of areas such as Midtown Brandywine and Trinity Vicinity in Wilmington predated this trend.) Even in suburban areas, neo-traditional development projects (such as Kentlands, Maryland and Celebration, Florida) have tried to replicate this compact, mixed-use urban form.

At the same time, while such neighborhoods have surged in population, some of Wilmington's inner city neighborhoods have continued to experience decline. Some of the areas near downtown are characterized by very low incomes, high unemployment, a high proportion of welfare recipients, high crime rates, and disinvestment. The social problems in these neighborhoods discourage downtown workers from seeking housing there. Most other neighborhoods in the city have a mix of moderate-income working class families, students, and seniors, have lower crime and higher, more stable property values; downtown workers who want to live the city tend to seek housing in those or more wealthy neighborhoods. However, unlike larger cities that experience substantial traffic congestion and therefore long commuting times for suburban residents, Wilmington has relatively easy access to its northern suburbs. This has impacted the marketability of housing in the city to downtown workers.

Residential Parking

The parking situation in these neighborhoods may turn some potential residents or investors away. Parking is typically accommodated on-street. In some neighborhoods, row houses can be as narrow as 16 – 18 feet wide, and are typically no wider than 25 feet. The length of an on-street parking space is typically 18 to 20 feet. This suggests that each row house has on average only one parking space available in the neighborhood. If a row house has more than one household, or the households on average have more than one car, then some households will experience growing frustration attempting to park their cars in the area.

It is not unusual for today's households to have two or more cars, one for each working adult and additional cars for children or elderly parents. While suburban households probably have around two cars on average, Wilmington households have slightly over one car, on average. Moreover, a significant proportion—nearly 27 percent—of Wilmington's households report having no car available (1990 census). In spite of this, Wilmington, like most cities in the U.S., is highly auto-oriented despite having an extensive bus network. Many residents own cars and expect to use them for most of their travel needs; many use transit only for their commute to

work and still use their cars for shopping, entertainment, and social trips.

Traditional Neighborhood Shopping Districts

Wilmington's traditional neighborhood shopping areas are oriented to shoppers who arrive on foot or via transit. These shopping areas have a traditional development style; they are built up to the sidewalk and have a sidewalk entrance; they are compact in size and built adjacent to other small shops. They have no on-site parking, and anyone who drives to the store must park on the street.

By way of comparison, suburban-style retail development is usually set back from the street and has on-site parking. Suburban municipalities typically require at minimum one parking space for every 250 square feet of retail space. Each parking space, including circulation area, takes up about 380 square feet. To adequately serve an exclusively auto-based clientele, it is therefore necessary to devote *1.5 times* as much land area to parking as to retail, assuming one-story retail and surface parking.

Such development could not be retrofitted into traditional urban contexts without substantial demolition. Moreover, the resulting low lot coverage would be incompatible with a pedestrian-oriented scale. As an alternative, market-based retail strategies can be used to revitalize these traditional shopping areas, building off of the existing pedestrian-oriented scale.

1.3 Transit And Quality of Life

There are three basic ways in which transit can be used to bolster the quality of life in urban neighborhoods and throughout the metropolitan region:

- Improving mobility;
- Coordinating location of routes and stops with mixed-use and high-intensity development; and
- Integrating transit stops into the urban design of neighborhoods.

These strategies will be addressed one by one in this section. Case studies are provided to illustrate what has been tried in other cities around the nation to implement these strategies.

Improving Mobility

Making improvements in transit service is one of the simplest ways to improve quality of life. As jobs and shops have moved from inner city to suburban areas, inner city residents have had poorer access to employment, goods, and services. Improvements in transit service—including new or expanded routes, express service, bus priority lanes, increased weekend and late night service, improved ticketing, and excursion trips—can help reverse the trend. New services should necessarily be tailored to the needs of the two subgroups with the greatest need:

transit-dependent residents and reverse commuters. However, to sustain the recent increases in ridership, it will also be important to address the needs of discretionary riders—those who have a car and could drive, but can be encouraged to take transit because of issues of cost, convenience, and/or parking availability.

Transit-Dependent Residents

Low-income households are often transit-dependent, because they cannot afford cars. In neighborhoods where incomes and vehicle ownership rates are low, an above-average share of work trips is made via transit, according to the 1990 census. However, transit-dependent residents include not only low-income households, but also school-age children, senior citizens, disabled persons, students, and working women. These are people who may not be able to drive or who may not have access to a car. Studies have shown that in households where both parents work and there is only one car, the male parent will most likely use the car, and the female parent will use transit or some other means of transportation, even though women are also often responsible for child or elder care.

Even though many riders may be transit-dependent, it does not mean that their decisions to ride or not ride the transit system are made independent of the quality of the service offered. In general, with higher levels of service, even those without vehicles will likely make more trips on the system than if the service is slow and unreliable. Moreover, service issues have the most direct quality-of-life impact on transit-dependent individuals.

Reverse Commuters and Welfare to Work

Welfare-to-work inner-city residents are facing significant barriers commuting to suburban employment centers, because many do not have cars, and transit service to suburban employment centers is often time-consuming and inconvenient. To address this problem, the Federal Transit Administration has created the Job Access Reverse Commute program, which will fund transit, para-transit, and other initiatives to help link inner city welfare workers with suburban jobs.

In addition, many suburban workers who would otherwise prefer to live in an urban neighborhood actually refrain from living in the inner city, because parking and commuting are more difficult. Because urban neighborhoods have been gaining in popularity, some suburban workers would choose to live there if convenient transit services were available to their workplace.

Recognizing the role of transit in welfare-to-work efforts, DTC has partnered with the Delaware Department of Social Services to undertake a survey and analysis of WtW transit needs. DTC has also expanded reverse commute service on Route 23, and has instituted a new "Night Owl" service to cover work trips that occur during hours that the regular system is not in operation, including Sundays.

Discretionary Riders

Discretionary riders are those who could commute by car (because they either have access to a car or could afford one), but choose to ride transit for some or all of their work trips. In large cities with rail transit, people often use it to avoid long traffic delays. While this does not apply to Wilmington, which has limited rail transit, people might also use transit to be able to read or work while in transit, or to avoid downtown parking costs and hassles. In fact, downtown parking conditions in Wilmington do provide a significant inducement to ride transit. Downtown parking, if not provided by the employer, can cost over $150 a month. Even if parking is provided, parking cash-out programs (where employees are offered the cash value of their parking spaces) could provide an incentive to use transit. In a 1997 DART rider survey, 17 percent of riders cited downtown parking as a reason for riding transit. Also in 1997, a Transportation Management Association survey found that 18 percent of downtown employees who had to pay for parking rode transit, as opposed to 5 percent of those with free parking available. The cost of parking, fuel, and vehicle maintenance often make commuting via transit more cost effective regardless of the parking situation—however, this is more true for longer commutes.

Discretionary riders, since they have options, will be more likely to avoid the bus system because of issues such as service frequency and reliability. If the discretionary rider is routinely frustrated by late buses, missed connections, or other service irregularities, a shift back to the auto is much more likely. Therefore, issues such as frequency and on-time performance take on particular importance when vying for the discretionary market.

Case Study: DASH Shuttle, Los Angeles

In September 1990, the DASH shuttle was created to improve access to community facilities and shopping centers in the low-income Watts neighborhood. The nonprofit Watts Labor Community Action Committee (WLCAC), under contract to the Los Angeles Department of Transportation (LADOT), initiated the shuttle service, with one bus traveling each direction in the loop every 45 minutes. The route connected residents with City Hall, the Post Office, the park, the hospital, a job and vocational preparation center, a social service facility, two shopping plazas, and two Metro Blue Line light rail stations.

The shuttle was an immediate success. Because there had been extensive consultation with local residents on the choice of stops, the route included destinations that people actually wanted to reach. By September 1991, the fleet had doubled to four buses. In the second year of operation, the shuttle carried 40 passengers per revenue hour, twice the transit agency's standard. By 1994, the shuttle was transporting 48 passengers per revenue hour. In 1997, DASH Watts North was initiated, servicing the northern and western portions of the community.

By that point, DASH Watts had five buses and only a 20-minute wait, operating from 7 AM to 6 PM on weekdays and from 9 AM to 6 PM on Saturdays. With 50,000 passengers per month, it had the highest ridership per hour of any LADOT service, and with almost 30 percent of the

operating costs coming straight from the 25-cent fare, it also boasted the lowest subsidy per passenger. More importantly, the shuttle achieved the initial goal of improving access for low-income residents to major community and shopping destinations.

Case Study: Bluegrass Industrial Park Shuttle, Louisville

An express bus service was established between inner city Louisville and the suburban Bluegrass Industrial Park to serve reverse commuters. Bluegrass, the nation's third largest industrial park, is located in the eastern suburbs of Louisville, far from the high unemployment (and low rates of car ownership) in the city's west end.

The Kentuckiana Regional Planning and Development Agency (KIPDA) and the Transit Authority of River City (TARC) developed the new service. TARC conducted studies that found a clear unmet demand for such a service. Also, a wide variety of employers, community agencies, and local government entities confirmed that there was an unmet need, and they promised to refer potential riders from the target group.

Two out-bound runs travel from the west end to Bluegrass, and ten more leave from the CBD. Eleven runs make the return in-bound journey. In addition, two free shuttles circulate the sprawling industrial park at 30-minute headways in the morning and afternoon. Travel time approximates 45 minutes. Previously, trips to Bluegrass from the west end involved three transfers and a long walk from the bus stop to the workplace, amounting to a two-hour trip time. The peak-hour $1 fare helps support the service, along with City, County, federal and TARC funds. Early surveys suggest that the service is a success: most of the riders did not own cars, and more than half hailed from Louisville's west side.

Case Study: Job-Link/PACE, Chicago

Through its Job Oasis program, the non-profit agency Job-Link helps inner city residents locate and keep jobs in employment-rich suburbs. It provides free transportation to the Job Oasis center and to job interviews. Once hired, Job Oasis participants can utilize one of Job-Link's established express bus routes (or rideshare vans) for the reverse commute. Riders pay up to $2 per ride, with the rest of the tab for the bus service picked up by Job-Link[9].

Once one of the routes shows clear evidence of market support, PACE Suburban Bus Service (the transit provider in suburban Chicago) will move in and establish a fixed bus route. Job-Link's efforts help demonstrate transit demand to PACE, which typically refuses to establish new routes without a built-in ridership.

Case Study: East Baltimore-BWI Area Shuttle, Baltimore

The Historic East Baltimore Community Action Council (HEBCAC) runs a program similar to Chicago's Job Oasis program. Residents in East Baltimore, which has a large welfare-to-work population but few job opportunities, are linked with jobs in the employment-rich area near the Baltimore-Washington International (BWI) Airport.

Unlike Chicago, where the initial shuttle service is eventually replaced by PACE buses, the HEB-

9. Suburban Job-Link has recently become a demonstration project of the federal government's Bridges To Work program, which means that federal funding might now be paying for some of the costs of the express bus service. Bridges To Work is a team effort between HUD, U.S. DOT, FTA and Public/Private Ventures (P/PV), a non-profit research and program development organization. Since 1996, it has helped to fund "demonstration projects" in Chicago, Baltimore, Denver, Milwaukee and St. Louis that will hopefully show the potential of connecting unemployed inner-city residents with suburban job opportunities.

CAC service is ongoing. For each rider, service is free for the first 30 days. Subsequently, the full fare is $4 per round trip with the remaining costs absorbed by HEBCAC as part of the federal Bridges to Work program. HEBCAC also helps residents find job training and placement agencies, and provides free shuttle service for people going to job interviews.[10]

Conclusions: Mobility Case Studies

- Extensive consultation with the community beforehand is vital
- Studies that uncover locations of jobs and potential workers work well with local outreach to identify unmet needs
- A permanent community organization in place can get the service started
- No fares or low fares are a good way to attract low income people initially
- Transit service needs to be frequent and run over most of the day
- Because transit operators are often unable or unwilling to risk initiating of new routes, special services started by subsidized job-based programs can be a successful starting point, with a shift to the transit operators coming later
- Job training, job placement, and free transit to job interviews are useful complements to transit services

Coordinating Location of Routes and Stops with Mixed-Use and High-Intensity Development

Coordinating the location of transit routes and stops with mixed-use and high-intensity development is a key principle of transit-oriented development. Mixed-use, high-intensity patterns of development allow people to walk between destinations, and transit can be used to link pedestrians between different walkable parts of the city or metropolitan area.

Mixed-Use

Because transit users, no less than auto commuters, often need to run errands as part of their work trip, retail and transit stops are complementary uses. By co-locating retail stores and bus routes, riders can go to the grocery or drug store, buy a carton of milk, or pick up dinner on the way home; or they can grab a coffee or drop off their dry cleaning on the way to work. If institutions and community services are located near the station, parents can pick up their children at day care, buy stamps at the post office, or attend parent-teacher meetings on their way home from the station.

Likewise, businesses benefit from greater visibility and foot traffic along the street. A location adjacent to a major transit stop can be a particularly attractive and high-value retail site. Notable national examples include the Portland (Oregon) transit mall and Union Station in Washington D.C. These are two major transit centers that have also become lucrative shopping locales, not only for residents and workers, but also tourists.

10. National Transit Resource Center: Welfare to Work: Access to Jobs: Local Innovative Practices. http://www.ctaa.org/ntrc/ati/pubs/innovative-old/section5.shtml

Most shopping will be done either at the beginning or end of a transit trip. Few people will get on and off a bus to do shopping, especially if another fare is required, and especially if the bus is running with infrequent headways. An exception is destination shopping, such as a mall. This suggests that people would probably not take transit to a convenience shopping destination like a grocery store, but would go shopping on the way to other destinations, like home, the office, or an entertainment locale.

Commercial uses in Downtown Wilmington and along major neighborhood corridors such as North Market Street and Union Street can benefit from high-quality transit facilities. Transit routes and stops can be located in the heart of traditional neighborhood shopping districts, increasing visibility, complementing the pedestrian activity there, drawing more customers, and thereby creating greater opportunities for neighborhood and retail revitalization.

High Intensity

Concentrating development around transit stops and corridors allows more people to walk to and from the transit line. If their destination is also located near transit, then they can easily walk to the bus, ride through town, and walk from the bus stop to their final destination. Thus, in compact cities like Boston, Chicago, and Philadelphia, people can easily circulate without a car.

While Wilmington does not have the very high densities of some larger cities, it does have a highly concentrated downtown office core and compact neighborhoods of townhouses that can support frequent transit service. Someone living in one of Wilmington's neighborhoods can easily walk to the corner and ride the bus to their office in downtown. With the most compact development in the state, Wilmington is the most transit-friendly place in Delaware and is the focus of DTC services.[11]

Households located in compact urban areas—like central Wilmington—can potentially forego owning as many cars, because of frequent transit service and compact development patterns. Having one less car can represent a substantial cost savings. In 1996, the average U.S. household spent 14 percent of its pre-tax income on transportation, more than it spent on food, making transportation the second largest expense behind housing.[12] The average cost of owning and operating a 2-year old car is estimated at $6,000 per annum. Typically, low incomes households will reduce this cost by buying older, cheaper, and hence, less reliable automobiles. Even allowing for this fact, car expenses represent a significant portion of annual income, particularly for low-income households.

Without the need to buy a vehicle, a household's real purchasing power increases significantly. In the test markets of Chicago, Seattle, Los Angeles and the San Francisco Bay Area, mortgage lenders Sunnie Mae and Countrywide now take into account the cost savings resulting from a home in a "compact, transit-accessible neighborhood" in determining a prospective

11. More than 800 daily bus trips pass through downtown, and more than half of DART First State riders either begin or end a trip in downtown Wilmington. (Parsons Brinckerhoff Quade & Douglas, Inc., *Delaware Transit Corporation Five-Year Business Plan, Land Use White Paper,* July 2000, p. 2.)

12. Consumer Expenditure Survey, 1997

homebuyer's ability to take on a mortgage. This increase in borrowing power often makes the difference between renting and owning.[13]

The existence of transit also often provides justification for a lowering of the minimum number of parking spaces per dwelling unit designated in the zoning ordinance. As the provision of parking tends to be an enormous expense for residential developers, a reduction in that requirement can result in housing that is more affordable.

Case Study: El Station Retail, Chicago

In 1993, the Edgewater Redevelopment Group (ERG) embarked on a campaign to rehabilitate and lease 21 retail spaces owned by the Chicago Transit Authority (CTA) that were located under or adjacent to four intermodal El stations on the Red Line. Using a $500,000 interest-free loan from the CTA, the ERG rehabbed facades and lighting and then leased the spaces to commuter-oriented retailers and service providers such as newsstands, coffee carts, dry cleaners, ATM's, etc. As of 1997, nearly 100 percent of the spaces were leased, the majority of the original tenants were still there, and 70 percent of the businesses were minority-owned.

Case Study: New Jersey Transit Passenger Service Centers

New Jersey Transit's (NJT) Station Renewal Program is developing "passenger service centers" which include stores and vending carts tenanted by convenience retailers and service providers (e.g. dry cleaners, delicatessens, florists, shoe repair, etc.) and operated at only the busiest times of the day. NJT is also experimenting with the idea of a "concierge" which would act as a middleman between transit users and convenience retailers/service providers. For example, the concierge would in the morning collect from passengers their dry cleaning, undeveloped film and shoes in need of repair, distribute them to the appropriate businesses, retrieve them in the afternoon and then distribute them to the passengers as they return home from work in the evening.

Case Study: KidStop Child Care Center, Montgomery County, Maryland

Transit stations can also provide locations for service providers and institutional uses, resulting in a substantial reduction in car trips by riders. In September 1993, for example, the KidStop Child Care Center opened at the Shady Grove Metrorail station in Montgomery County, Maryland as part of a public-private partnership between the County, the transit agency, and corporate interests. Working parents are thus able to drive to the station, park their cars at a park-and-ride lot, leave their kids at the Center, and board the train for work.

Case Study: Davis Square, Somerville

On a larger scale, transit, when combined with other improvements, can act as a catalyst for the renewal of an entire commercial area. Davis Square is a major commercial center in the City of Somerville, part of the Boston metropolitan area. Once thriving, Davis Square had lost much of its luster in the postwar era, and by 1980, it had bottomed out. A planning study of that year noted

13. The "Location Efficient Mortgage" program will be covered in greater detail in a later chapter.

the area's deteriorated physical environment, traffic congestion, parking inadequacies and uncompetitive merchants. In the 1980's, however, the arrival of Red Line extension would be instrumental in its recovery.

The 1982 Davis Square Action Plan called for streetscape improvements (e.g. brick / granite paving, new lighting, sidewalk widening, etc.) between the new station and the shopping area, to create a stronger pedestrian linkage. The Massachusetts Bay Transportation Authority (MBTA) developed a plaza in between the two station entrances and graced it with public art. At the same time, the City initiated a number of real estate projects in the area, including the Ciampa Manor Elderly Housing development and the Buena Vista office/retail/parking garage complex.

These public-sector actions triggered a significant private-sector response. Former manufacturing buildings and department stores were renovated and converted to new office and retail space. Two new office buildings, totaling roughly 170,000 sq ft, were built and occupied. New restaurants, theaters and entertainment-related businesses have arrived on the scene. The historic Somerville Theater now attracts a regional audience. The new transit line created the opportunity for the revitalization effort.

Case Study: Lloyd District, Portland

The Lloyd District is located across the Willamette River from downtown Portland and is served by three transit stations and a major transit center. Because of its good transit service and proximity to the central business district (CBD), the district became the target area for CBD expansion. Several new public projects—including the State of Oregon office building, the Oregon Convention Center, the Rose Garden arena, and the Metro Regional Government headquarters—helped spark private investment in the area.

As private development took off in the 1980s, the City of Portland adopted higher-intensity commercial zoning near the transit stations and limited the development of new surface parking lots. The City also allowed developers to request design review of projects as an alternative to meeting specific zoning provisions. At the same time, the newly formed Local Improvement District (LID) levied taxes from area businesses to create a pedestrian mall linking major sites. Over the course of the 1980s, the Lloyd Center station area (just one of the three transit stations) gained about 1.7 million square feet of office space, and the area nearly doubled in assessed value.

Case Study: Metro Station Area Sector Plans, Arlington County, Virginia

Arlington County, Virginia successfully used transit-oriented development to channel growth and limit sprawl. In the 1960s, the County developed "sector plans" that called for high-density, mixed-use cores within walking distance of future Metrorail stations. Station area development was restricted to designated "transit impact zones" to avoid driving away homeowners in adjacent neighborhoods to distant suburbs. Between 1970 and 1994, areas within a half-mile of Metrorail stations absorbed 94 percent of Arlington County's new office development and 90 percent of

new retail and hotel development.

Conclusions: Transit and Land Use Coordination Case Studies

- The rehabilitation of retail space for convenience shopping near transit stops can be accomplished through a partnership of local redevelopment groups and the transit operator, with the former providing the "sweat equity" and the later the low or no interest loans
- "Passenger service centers" and concierge services can be effectively initiated at busy stations or stops to provide conveniences for transit customers
- Child care services at transit stops can offer a convenient service for transit riders
- Significant transit and other improvements can "kick-start" new private development investments to revive areas
- Good transit services near major central business districts can create the incentive to invest in areas just outside the CBD, accommodating uses which require more space than is available in the CBD
- Design review of projects can offer significant savings for developers in lieu of specific zoning provisions
- Improvement districts that levy taxes can be used for area-wide improvements such as pedestrian treatments
- Transit impact zones can be created to channel growth near transit stops and away from auto-oriented sprawl

Integrating Transit Stops into the Urban Design of Neighborhoods

Sidewalk-oriented buildings, strong pedestrian linkages, and attractive streetscapes can enhance the area around transit stations and help link the transit riders to the neighborhood. Signage, landscaping, benches, bike racks, and lighting can create a comfortable and safe environment for walking and can encourage people to walk rather than drive. Keeping auto-oriented uses (like drive-through uses, gas stations, and auto repair shops) out of transit-intensive areas can also help preserve the transit-friendly environment.

In addition, transit can reinforce public spaces and institutions that serve as focal points for community life. These include plazas, waterfront promenades, pedestrian-oriented streets, and parks, as well as libraries, theaters, and public markets. In some cases, transit not only brings people to such a space, but the presence of a transit station and the sound of trains and buses can contribute to the urban ambiance. The presence of the MAX line is a key component of Portland's Pioneer Square. Antique cable cars (1880's era) and streetcars (1930's era) help create a festive environment along Market Street in San Francisco.

Case Study: 16th Street Station, San Francisco

The 16th Street BART Station is located on Mission Street in the heart of a low-income immi-

grant Latino community. While Mission Street is a lively commercial district, the station was poorly connected to the neighborhood. Two adjacent plazas provide access to the underground station. Each has a large opening for stairways and escalators, but these are nearly invisible from the sidewalk, and people must walk to the rear of the plaza to reach them. The plazas have minimal landscaping, and the stairway openings and rear edges of the plaza are lined with security bars. The station area is known for high crime, drug dealing, and loitering.

In 1996, the Mission Housing Development Corporation (MHDC) organized a series of community workshops and charrettes to redesign the two plazas for better pedestrian access and aesthetics. Participants included residents, merchants, transit agency representatives, city departments, elected officials, and non-profit organizations. After listing to community concerns, MHDC developed a station area design that featured a small community center on the north plaza and vendor stalls on the south plaza. A small amphitheater and new landscaping were also included in the design.

Since 1996, MHDC has been working with BART and the Metropolitan Transportation Commission (MTC) to conduct additional community outreach and raise funding for the plaza improvements. The City of San Francisco, BART, and MTC have contributed approximately $2 million for improving the south plaza, and construction plans for the plaza will be prepared by January 2001. Although the plan included recommendations for commercial revitalization and new high-density housing, grant restrictions preclude the $2 million from being used for property acquisition or redevelopment. Anti-gentrification sentiment (spurred by the rapidly growing internet industry) has made local residents and merchants leery of redevelopment proposals.[14]

Case Study: Downtown Plan, Bellevue, Washington

The 1981 Downtown Plan was intended to allow for additional office development, in response to growth pressures in the Seattle metropolitan area, and to create a more compact, pedestrian-friendly urban core. Several different strategies were implemented:

- The downtown area was rezoned to create a transition from high to low densities tapering away from the core.
- Setback requirements were eliminated so that structures could be built closer together.
- To make the superblock grid more walkable, planners created new pedestrian spines and civic spaces; all buildings built along these spines were required to have ground-level retail.
- Buildings were required to have a sidewalk orientation.
- Design review processes were established to permit distinguishable architectural features at the ground level, such as arcades and public artwork.
- The "FAR Amenity Incentive Program" enabled development to increase building densities between 10 and 25 percent in return for including amenities such as public plazas, artwork, childcare facilities, and affordable housing units in their projects.
- New provisions established a maximum parking limit for new development, allowed shared parking, and created a density incentive for below-grade parking.[15]

14. Telephone discussion with Douglas Shoemaker, Mission Housing Development Corporation, August 28, 2000.

15. Federal Transit Administration, Transit-Supportive Development in the United States: Experiences and Prospects, December 1993, pp. 101-104.

Case Study: NJ Transit Station Area, Woodbridge

In conjunction with the station revitalization project, stronger physical connections were established between the station and the surrounding neighborhood. Canopies were constructed to extend out over the entrances to the underground tunnel linking the two platforms. Two small buildings were built on either side of the primary station entrance and leased to retailers.

In addition, sidewalks were enlarged, and access paths, parking lots, and lighting were improved. New streetscape amenities identical to those along Main Street were added to the area near the entrance. These included brick pavers, antique lamps, historic benches, trash receptacles, an historic clock, public telephones, bike racks, bulletin boards, and kiosks. New directional signs were added, and a local artist created a station area map.[16]

Case Study: Los Angeles Neighborhood Initiative

The Los Angeles Neighborhood Initiative (LANI) was established as a demonstration project in the wake of the 1992 riots and sought to provide economic stimulus to eight transit-dependent neighborhoods. Each of the project sites was located along a major bus or rail corridor, had a significant transit-dependent population, underutilized commercial areas, and a need for affordable housing and neighborhood retail. In each neighborhood, a Recognized Community Organization (RCO) was established, composed of residents, merchants, property owners, and institutional representatives. The RCO developed work plans for implementing specific physical improvements in the neighborhoods. Some efforts undertaken in the neighborhoods include:

- Streetscape improvements, including new trees, historic light fixtures, and celebratory banners;
- Development of an "Art Park" next to a bus stop; and
- Development of a community garden and farmer's market.[17]

Conclusions: Transit Stop Urban Design Case Studies

- Even the most down-and-out areas can be transformed with local community-based participatory planning
- A downtown plan with multiple urban design strategies can focus development
- Community groups with representation of many stakeholders can be effective tools for change

1.4 Conclusions

This chapter has explored the relationship between transit, development and revitalization, neighborhood quality of life. While many other factors have as much or more influence on these issues, there is a clearly a strong relationship between transit and neighborhood planning. However, the relationship is more complex than it may first seem. Transit improvements typically do not bolster land values in and of themselves, but must be coupled with strategic plans

16. Federal Transit Administration, Transit Cooperative Research Program, TCRP Report 22: The Role of Transit in Creating Livable Metropolitan Communities. National Academy Press, 1997, pp. 29-33.

17. Ibid, pp. 42-45.

for land use, intensity, and urban design. In some cases, public investments are necessary to catalyze private-sector investment.

This suggests that transit and neighborhood planning must be closely coordinated. Modifications to transit service should be based on feedback from regular transit users. Successful linking of transit and neighborhood revitalization requires the active participation of residents, merchants, property owners, transit agencies, city departments, and local non-profit agencies. Because of the overlapping jurisdictions, substantial interagency coordination is needed. Local non-profits can be important partners not only in identifying service needs, but also in supporting, implementing and testing new services.

3 Historical Overview of Transit in Wilmington

Wilmington was an early adopter of many transit technologies.

Transit is not new to Wilmington. In fact, Wilmington was an early adopter of many transportation technologies. The history of past transit decisions is useful not only to understand the decisions that led to the current system configuration, but also assess the extent to which the current configuration responds more to historical factors as opposed to existing conditions and trends. Existing transit routes tend to have a vocal constituency, while new or expanded routes do not, often leading to inertia in transit planning. The role of transit in shaping existing land use patterns is also explored.

Public transit began in Wilmington at 6 AM on June 30, 1864 in the form of a horse drawn trolley operating on a two mile route starting at the train station at Front and Walnut and running over Front, Market, 10th and Delaware Ave. to Dupont Street. The fare was 6 cents. Probably influenced by Philadelphia, which had started trolley service in 1858, Wilmington was an early entrant into this new transportation mode even though it only had a population of about 20,000 at the time. The system grew in spurts through both expansion and company mergers until about 1938 when trolley and bus routes covered over 27 miles of Wilmington's streets. At this time the company that owned the Wilmington transit system also received state approval to run lines into the county. This was the start of coordinated regional service.

Originally the development of outlying land was a major force in the development of the trolley lines. To get people to travel to these less developed areas and to maintain ridership the trolley companies developed amusement parks at the end of their lines, to serve as destinations. In Wilmington these included Brandywine Springs, Union Park, and one at Shellpot Creek. This underscores the historic relationship between transit and development. The difference today is that instead of looking at how transit could fuel the development of outlying areas, planners are instead looking at how it could support the redevelopment of the city core and its neighborhoods.

The trolley system was completely converted to buses[18] between 1948 and 1958, continued to be profitable and privately held through the late sixties although increased car ownership had significantly eroded its base. In 1965, a University of Delaware study recommended steps to be taken to keep the system profitable. A transit strike and civil unrest in Wilmington in the late 1960s further eroded the system's foundation and in 1969 the system made the transition to operation by a quasi-government operation. The Greater Wilmington Transport Authority (GWTA) was set up to apply for Federal Assistance and Purchase Delaware Coach Assets. In January of 1969 GWTA assumed direct operational responsibility of the transit system.

In response to changes in State laws governing multi-jurisdictional authorities and as an effort to improve transit's image, GWTA was reorganized as the Delaware Authority for Regional Transit (DART) in 1971. Ridership increased as long as transit cost less than parking. Ridership through the 1970s remained quite strong, but reductions in federal operating subsidies starting in late 1970s resulted in a series of service level reductions. This led to a decline

18. While most trolley routes were converted to diesel bus service, several Wilmington routes were initially converted to electric trolley bus service. The electric trolley bus network was completely converted to diesel bus operation by 1960.

in ridership though the 1980s, a situation further exacerbated by the building of Barley Mill/Chestnut Run and other suburban office developments as well as the exit of retail from the city to suburban shopping malls.

Escalating operating costs coupled with a spiraling downturn in fare box revenues and federal subsidies led to increasing demands for local subsidies, typically drawn from general funds of the City, County and State. The Delaware Department of Transportation (DelDOT) resolved these concerns in 1985 by establishing a Transportation Trust Fund for highways and transit, funded through toll and gas tax revenues. DART was absorbed into a new independently incorporated subsidiary of DelDOT—the Delaware Transportation Authority (DTA)—as the Delaware *Administration* for Regional Transit (also DART).

A key element of the transition of DART from an authority to an administration was the shift of public transportation management from regional to State control. The governing board of City, County, and State representatives that previously directed DART was abolished. Commensurate with the shift in control, the City and County were relieved of financial responsibility for subsidizing operating deficits. In 1995, DTA and its component administrations were reorganized as the Delaware Transit Corporation (DTC).

Over the past several years, ridership trends have reversed. Driven by expanding downtown employment and a parking shortage, ridership on the DTC system has shown substantial growth. Total DTC ridership in New Castle County increased by 25 percent between 1996 and 1999.

A comparison of the streets served by the former trolley routes with the current bus lines shows that there has been remarkably little change over time. This certainly reflects the fact that the City and its boundaries have not really changed over the last 150 years, but it also shows that there has been a tendency to follow the same routes and service patterns even as there were dramatic shifts in demographics and car ownership. It may be time to look not only at how to "tweak" the historic fixed route system but also look at new possibilities to meet the current needs of Wilmington's neighborhoods. A review of the trolley system's development also highlights the role that the trolley played in connecting people to areas that continue to be retail and commercial focal points such as Market Street, Delaware Ave, 4th Street, Trolley Square, and Union Street. This suggests that it may be important to look again at how transit can be used to support retail and commercial development in Wilmington's neighborhoods.

Another historical trend has been for the transit system to become progressively more commuter dependent to the point that keeping the cost of transit below the cost of parking in Wilmington has long been an important "yardstick" used in evaluating fares. On the one hand this is a logical reaction to the relatively small number (although high percentage) of Wilmington residents without cars, historical trends that have focused on car dependent

development, and surveys that consistently identify commuters as the largest source of potential riders. At the same time this has led to an approach to service development that is highly focused on meeting the minimum requirements of "captive" audiences—those without cars and those who for whom riding the bus is significantly cheaper than parking. This emphasis is reflected in customer service, route evaluation standards, and route design. Until recently there does not appear to have been much emphasis on attracting the discretionary rider or developing customized approaches to meet specialized service niches. This probably also a result of the relatively low priority Delaware has put on transit service relative to highway construction. While they may never enjoy the same levels of economic performance that commuter based routes do, having a system that accommodates shopping, church, and inter-neighborhood transportation is important to making Wilmington's neighborhoods attractive to people who are interested in an "urban lifestyle." It is time to look at economically feasible strategies to meet this need.

4 Overview of the Existing Service

Transit in Wilmington is dominated by the DART bus service. Accordingly, much of this chapter addresses the bus system specifically. However, there are several other modes available on a limited basis in Wilmington, including commuter rail, private shuttles, taxis, and even water taxis. This chapter gives an overview of the existing transit services, with the greatest detail being devoted to the bus service.

4.1 Bus Overview

Routes and Coverage

Wilmington is served by 28 bus lines. These lines provide excellent coverage for the City—almost every household is within 1,000 feet of a bus stop *(see Map 2: System Coverage)*. With a few exceptions, Wilmington's bus lines form a hub and spoke system, with Rodney Square as the main transfer point and the train station as a secondary transfer point. Most buses traverse one of two loops in the downtown: the Amtrak loop, on Walnut and King; and the Orange loop, on Orange and King Streets. The Orange loop goes as far south as 2nd Street in some configurations, but most use 4th Street as the southern terminus. The Amtrak loops all stop at the train station.

Bus lines that serve Wilmington can be grouped into three major groups and five types. The major groups are commuter services, targeting peak-period journey to work trips; mobility services, which provide service throughout the day; and community or circulator services, which provided services within a small area, usually through a short loop. A further distinction is drawn between limited stop buses, which provide little or no service to Wilmington residents, and local buses, which make frequent stops in Wilmington's neighborhoods. Within the category of mobility services, a distinction is drawn between buses originate in a suburban location, and those which circulate exclusively or predominately in Wilmington. This taxonomy is designed to reflect how bus service is delivered in Wilmington specifically. The following are the five types:

- **Suburb-City Limited Stop Service.** These buses are oriented less to Wilmington residents and more to suburbanites who work in Wilmington's downtown offices. Limited stop buses typically enter Wilmington from an exit on I-95, or from the south via US13 and the Walnut Street bridge, and therefore do not directly serve any of Wilmington's residential areas. However, these routes may serve as viable reverse commute options for Wilmington residents. While most of these buses run as commuter services, some provide mobility services outside of the City, and may run on Saturdays or later at night.

- **Suburb-City Commuter Local Service.** This is the second most common type of service in Wilmington. These buses originate from some location in the County, and travel a major route into Wilmington making local stops along the way. Once they reach Wilmington, they typically stay on a major traffic artery or prominent neighborhood

Wilmington Neighborhood Transit Strategy

Map 2: System Coverage

Legend

Existing Bus Routes

1000 ft. radius

0 0.5 1 Miles

Abeles Phillips Preiss & Shapiro, Inc.
Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

City of Wilmington • Delaware Transit Corporation • WILMAPCO

spine, making frequent stops. Once downtown, they do a quick loop between Rodney Square and the train station, before exiting back along the same street (or corridor) by which they entered.

These services typically provide infrequent or no service during mid-day periods, and do not run at night or on Saturdays. From the standpoint of Wilmington residents, however, they are still useful because they provide increased capacity and coverage during the period of highest usage.

- **Suburb-City Mobility Service.** This is the most common type of service in Wilmington—11 of the 28 routes serving the City fall into this category. The basic form of these services is identical to the local commuter services. Unlike the commuter services, however, these routes provide service later at night and on Saturday, and a higher level of service during off-peak periods.

  Both this service and the local commuter service have several advantages. They combine suburban with city ridership, increasing the total trips per vehicle revenue mile. The services are easy to understand, because the bus is either traversing its designated corridor, or it is looping in the downtown. For a neighborhood resident, the same bus that took her downtown will return her close to where her trip originated. The route works best when the bus runs along a two-way street into and out of Wilmington. Some buses necessarily take both legs of a one-way pair, such as Martin Luther King Boulevard and 2nd Street.

  There are, however, a few disadvantages to this type of service. Traffic congestion or snowy conditions in the suburbs will result in late buses in the city. The service adequately provides for neighborhood to downtown trips, but does not accommodate "cross-town" trips without a transfer. Moreover, the current configuration creates an oversupply of buses in the downtown, all making one of two loops. Reconfiguring these loops may provide a way to increase service in the neighborhoods without adding additional buses.

  A subset of the suburb-city mobility services is comprised of routes that feature a "through route." With this service, the bus passes through the downtown to make an additional run in another neighborhood, before returning downtown and then exiting along its designated corridor to the suburban origin. Only two routes in Wilmington fit this description—Routes 9 and 24.

  The advantage of this type of route is that it provides extra service to neighborhood residents without adding a new in-town route. The disadvantage is that the "extra" through route often attracts few riders, effectively lengthening the route without providing a corresponding increase in ridership. This type of service needs a carefully thought-out through route to be successful.

- **In-Town Mobility Services.** This type of bus provides service only within the city limits of Wilmington. There are two bus routes that purely fit this description: Routes 8 and 12. Routes 3 and 10 also function in the same way, although Route 3 briefly leaves the city limits and Route 10 short-turns the majority of its trips at the city limits. Route 8 is unique in that it provides neighborhood-to-neighborhood service, passing through the downtown but not doing a loop within the downtown. Route 12 connects the northernmost neighborhoods with the downtown, and does the more conventional downtown loop.

  These types of services tend to be effective when measured in passenger trips per vehicle revenue hour, a rough measure of how many people get on the bus during a period of time. Because the trips are short, however, these routes tend to do more poorly when effectiveness is measured in passenger trips per vehicle revenue mile. A key advantage of these types of services is that the routes are shorter, making it easier to keep the bus on schedule.

- **Circulators.** There is currently only one true circulator in Wilmington—the City Circuit (Route 32) bus. This bus provides regular service connecting three major destinations: Rodney Square, the train station, and the Riverfront attractions. The fare for this shuttle is only 25 cents, making the service attractive for people circulating between downtown and the riverfront, who may use the bus as a more convenient alternative to walking or driving. The bus runs at 15-minute intervals peak, 30-minute intervals off-peak during the week, with the peak periods being mid-day and evenings. On Saturdays the service runs at even 30-minute intervals.

  The low fare and frequent headways are a clear indication that this service is considered a loss-leader for the riverfront development, and that it is pitched as much to the discretionary rider as the transit-dependent rider. In addition, the City Circuit currently provides the only transit service to and from the riverfront. As such, it provides a vital service for Wilmington residents, regardless of average ridership figures. Without this bus, the riverfront would be completely inaccessible to a significant portion of the City's population.

The system configuration for the first four modes is shown on *Map 3: Route Service Types.*

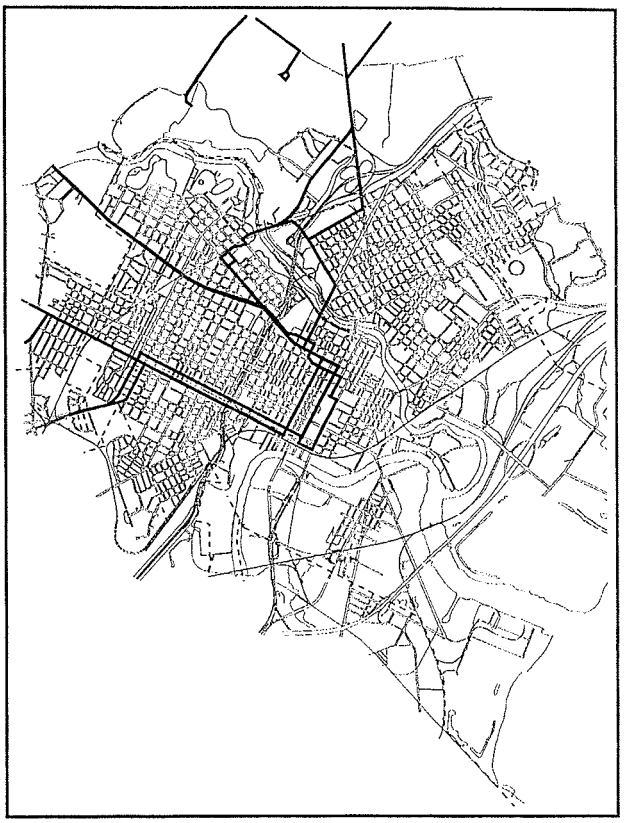
Frequency

Table 1 summarizes the headways by period for DTC bus routes that serve Wilmington. Most of DTC's bus routes operate at a frequency of three buses or more per hour (an average headway of 20 minutes or less) during the morning and evening peak travel periods. Several of the bus routes carrying heavy loads on some of Wilmington's more crowded streets operate at peak frequencies of between four and six buses per hour (headways between 10 and 20 minutes) during the peak period, including:

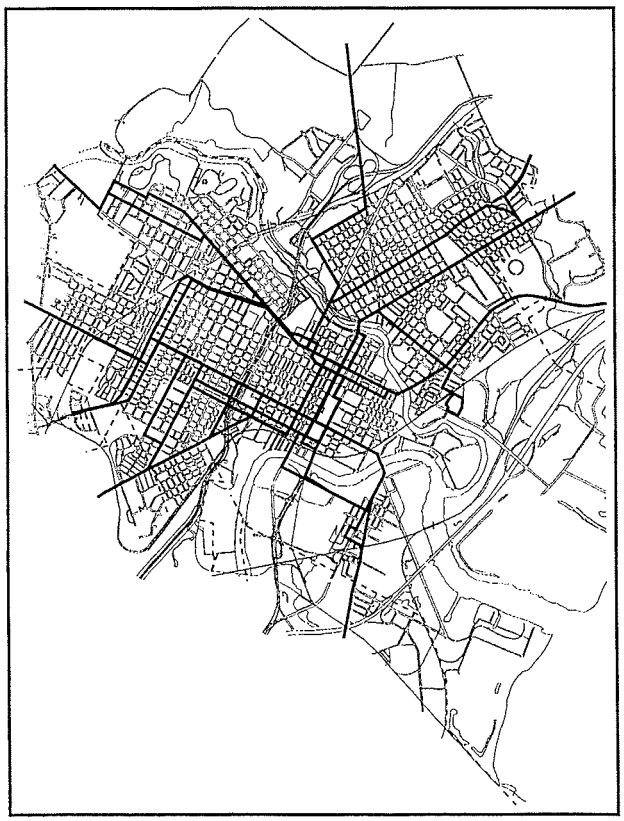
Wilmington Neighborhood
Transit Strategy

Map 3: Route Service Types

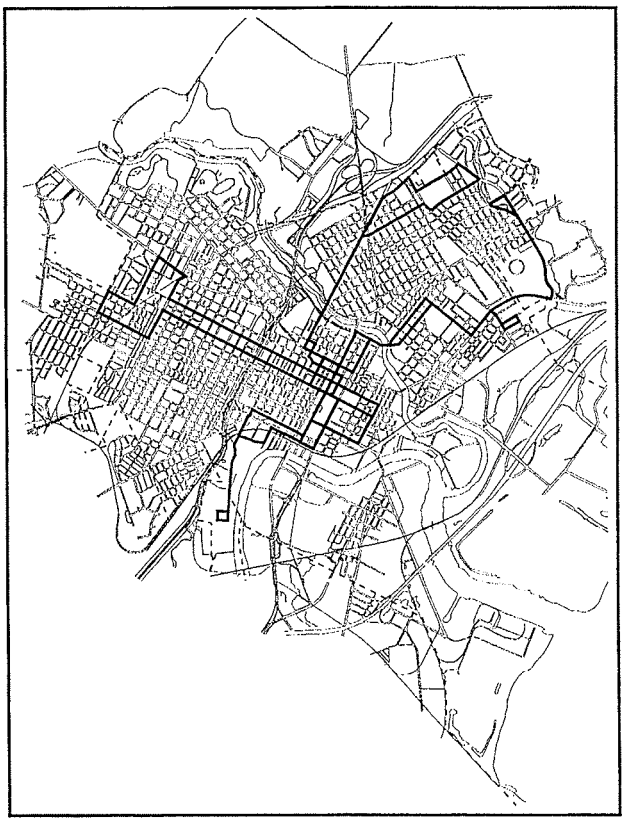
Suburb-City Limited Stop Service
Routes 13, 16, 22, 23, 25, 33, 40



Suburb-City Commuter Local Service
Routes 19, 20, 21, 28, 35, 36



Suburb-City Mobility Local Service
Routes 1, 2, 4, 5, 6, 9, 10, 11, 15, 17, 24



In-Town Mobility Local Service
Routes 3, 8, 12

- Route 1 (Philadelphia Pike)
- Route 4 (West 4th Street/Lancaster Avenue)
- Route 5 (Maryland Avenue)
- Route 6 (Kirkwood Highway)
- Route 10 (Delaware Avenue/Kennett Pike)

Most of the routes that primarily serve local bus route patterns operate on a frequency of two buses or more per hour (an average headway of 30 minutes or less) during the mid-day and evening periods. Saturday bus service on most routes operates at a one-hour headway.

Span

The majority of local bus routes (those routes of greatest importance to Wilmington residents) begin operation during the 6:00 AM hour and depart Rodney Square for their last outbound run during the 10:00 PM hour. Except for the new "Night Owl" service, all DTC bus routes complete the in-service portion of their last weekday runs before midnight. Several bus routes that are important to Wilmington residents, including several important routes to reverse commuters, make their last runs before 10:00 PM, such as:

- Route 2 (Concord Pike)
- Route 3 (26th Street/Lea Boulevard)
- Route 9 (Boxwood Road/Broom Street/Vandeveer Avenue)
- Route 10 (Delaware Ave./Kennett Pike)

A large number of routes that primarily serve suburban residents traveling to work in Wilmington—including Routes 13, 19 through 22, 28, 35 and 36—primarily operate during the peak travel hours. Many such routes offer little or no service during the mid-day period and make their last runs from Rodney Square during the 6:00 PM hour. On Saturdays, most routes begin operation during the 7:00 AM hour, and most routes begin their last outbound run from Rodney Square at 7:30 PM. There is no service on Sunday. Times of last outbound runs from Rodney Square for each route serving Wilmington are listed in Table 1. Bus routes are grouped according to the classification scheme used earlier in this chapter.

4.2 Other Modes

Transit in Wilmington is dominated by DTC bus service. DTC buses provide the primary means of reaching destinations in the city and elsewhere in New Castle County. While buses are appropriately the focus of this study, however, they are not the only type of transit found in Wilmington. The following is a brief description of other modes:

- **SEPTA Route R2** provides rail service from Newark, DE to Philadelphia. It makes several other stops along the way. Fares are $4.50 peak, $3.75 off-peak to reach Philadelphia.

Table 1: Summary of Bus Frequency and Night Service

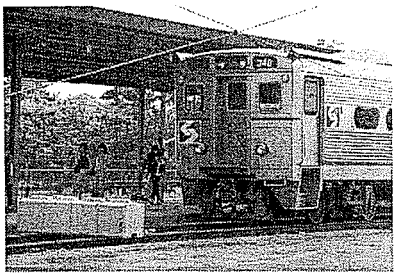
	Approximate Average Headways (Minutes)			Last Run from RSQ		
Route	AM Peak	Mid-Day	PM Peak	Night	Friday	Saturday
Suburb-City Limited Stop Service						
13	*	*	*	*	5:10	—
16	15	**	60	**	5:42	—
22	20	60	20	**	6:20	7:00
23	30	**	30	**	10:28	—
25	30	90	30	90	10:35	7:30
33	10	60	10	50	10:35	7:30
40	30	60	30	45	10:35	7:30
Suburb-City Commuter Local Service						
19	15	120	15	**	6:30	—
20	20	**	30	**	6:11	—
21	20	60	20	**	6:16	—
28	30	80	30	**	5:18	—
35	35	**	25	**	6:35	—
36	30	**	30	**	6:30	—
Suburb-City Mobility Local Service						
1	10	30	10	30	10:35	7:30
2	20	30	40	40	8:55	6:30
4	10	20	10	30	10:35	7:30
5	13	30	20	30	10:35	7:30
6	12	30	17	60	10:35	7:32
9	25	30	20	90	8:29	7:30
10	18	20	15	30	7:58	7:30
11	60	25	40	60	10:35	7:30
15	20	25	30	70	10:35	7:30
17	25	60	25	60	10:35	7:30
24	25	30	20	30	11:13	8:09
In-town Mobility Local Service						
3	20	60	15	0	7:07	7:30
8	20	20	20	30	10:35	7:30
12	20	20	20	20	10:35	7:30
Community Circulator Service						
32	30	15	15	**	6:55	7:30

* Only one run each for AM and PM period
** No service during this part of the day

Source: DTC Published Route Schedules

Other destinations between Newark and Philadelphia cost $2.25 to 2.75, depending on the number of zones traversed. Discounted weekly and monthly passes are available. The Route R2 functions primarily as a commuter line serving downtown Philadelphia. As such, its ridership tends towards better-paid downtown office workers. According to the 1997 DTC Transit Users Survey, 46 percent of weekday Route R2 riders had household incomes of $55,000 or more, compared with less than 17 percent for DART riders. It

should be noted, however, that the Route R2 provides a "reverse commute" option for Pennsylvania residents, and has the potential of providing a similar opportunity for Wilmington residents, particularly with new stations such as Fairplay Station at Churchmans Crossing linked to nearby office parks and malls with a shuttle bus. Route R2 trains operate at appreciably higher speeds that DTC local bus services, and a quirk of the SEPTA fare structure (oriented towards Center City Philadelphia) makes intra-Delaware train travel relatively inexpensive, even during peak periods. However, using the Route R2 for a reverse commute requires two or three transfers for the typical Wilmington resident. Furthermore, capacity constraints on the Amtrak Northeast Corridor severely limit the frequency of Route R2 trains, reducing the utility of this service for reverse commuting.



The SEPTA R2 could service reverse as well as Philadelphia-bound commuters.

- **Intercity Rail** services operated by Amtrak provide frequent, high speed connections to other cities up and down the eastern seaboard, and beyond. Service times have been improving as Amtrak continues to deploy its *Acela Express* high-speed rail service. While not typically used for daily commuting, Amtrak services are very valuable to business travelers, especially since Wilmington is not directly served by a major airport (the closest is Philadelphia International). Traffic through the train station is quite high—recent measurements peg the Wilmington station as the ninth busiest in the nation. Even for non-business travelers, the Amtrak service can provide mobility for leisure travelers, albeit at a price that sometimes approaches the cost of air travel.

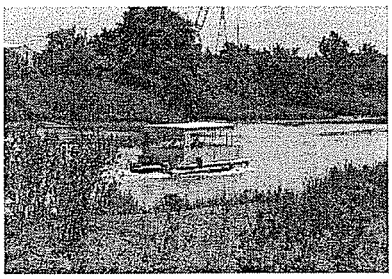
Wilmington's Amtrak station is the ninth busiest in the nation.

- **Intercity Bus services,** operated by Peter Pan/Trailways and Greyhound, provide low cost connections to other cities. While not typically used for commuting, these services can provide mobility for those seeking to visit friends or relatives out of town, or doing short excursions to other nearby cities. The bus terminal is conveniently located next to the train station, making it very accessible from the local bus service.

Intercity Bus Terminal north of the train station.

- **Privately Operated Van Services** often fill in the gap for publicly operated, fixed-route systems. Typically, those services are run by a major employer as a service for their employees. In Wilmington, such vans are operated by MBNA and Hercules, among others. There are also special purpose vans such as the Kahunaville shuttle, which can bring downtown workers to Kahunaville for evening entertainment, and then deliver them safely back to the downtown.

- **Private Taxi Services** are significantly more expensive than public transportation, but theoretically provide door-to-door convenience. Taxis are relatively easy to come by at the train station and in the downtown area. However, by all accounts the taxi service in the rest of Wilmington is extremely poor, especially after hours. Two-hour waits for a taxi are not uncommon. This renders the taxis almost useless for many residents. This situation bears further investigation. Although Wilmington is not a large city, it is compact and

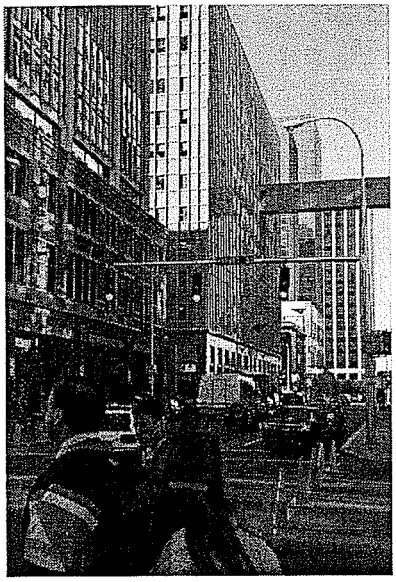


Water taxi on the Christina River.

dense, and should be able to support profitable taxi operations offering a higher level of service. This is especially true because of the large captive market created by the lack of Sunday service.

- **Water Taxis** have just begun operation on the riverfront. In truth, these services currently serve more as recreational jaunts than as serious transportation services. As more destinations appear along the riverfront, however, they could become an increasingly important means of circulating people throughout the riverfront, although their utility will be best realized in the milder months.

5 Transit, Demographics, and Land Use



High-intensity land use supports transit.

Demand for transit service will depend on a variety of factors. These include the density of population, the number and density of households with no vehicle, the age distribution, and the distribution of jobs and other destinations. In general, transit is supported by higher population densities, lower rates of car ownership, and a significant concentration of commercial floor space in the downtown or central business district. Wilmington, to varying degrees, has the attributes that support transit usage. However, Wilmington is not populous enough, nor does it have enough commercial floor space, to meet the thresholds for a very high level of transit service, including commuter light rail and 24-hour bus service. It can, however, justify a higher level of service than it currently receives.

5.1 Demographic Summary

The current population of Wilmington is estimated to be close to 72,300. This represents 13 percent of the total New Castle County population of 570,200. Projected population growth in Wilmington is expected to be modest, at under 3 percent for the next ten years. By contrast, the County is expected to increase by nearly 7 percent between now and 2010.

The following discussion focuses on demographic factors that relate to transit use, including the following:

- Income
- Rates of auto ownership
- Place of employment
- Journey to work data

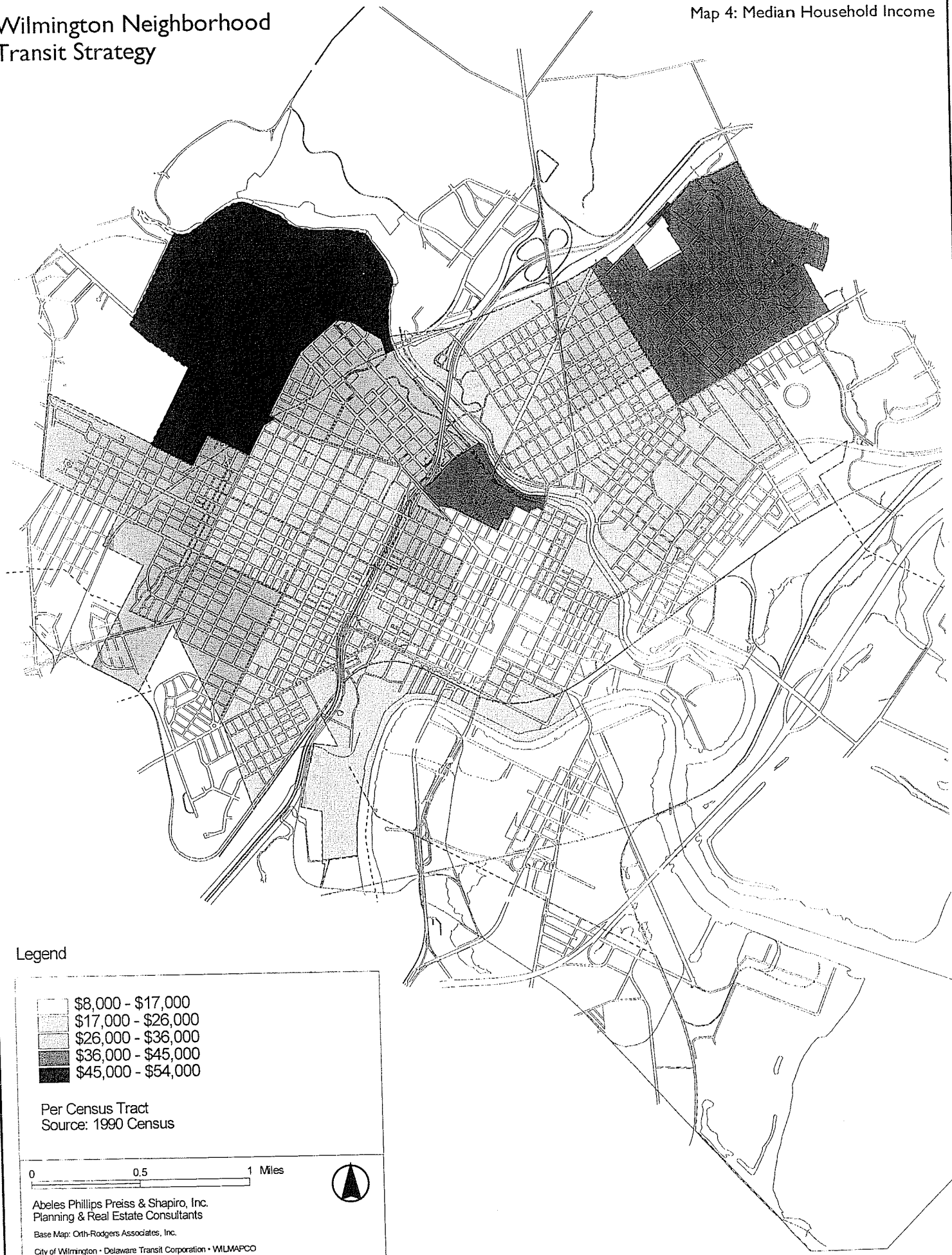
Income

Income is expected to be a predictor of both auto ownership and transit use. Charts 1 and 2, created using 1990 Census Tract data for Wilmington, show there is indeed a strong relationship, although there is also a substantial amount of variation.

The geographic distribution of income in Wilmington follows a pattern familiar to many U.S. cities, but with notable exceptions *(See Map 4: Median Household Income).* The lowest median incomes are found in the downtown neighborhoods, as well as those neighborhoods that were originally built to house workers in Wilmington's industrial plants. The areas with the lowest median household incomes include the Eastside area, two tracts straddling West 4th Street, the Northeast area with its concentration of public housing, Southbridge, and Browntown. These areas have some of the oldest housing stock; abut manufacturing districts; and are largely comprised of either small row houses or public housing. The major transportation corridors serving these low-income areas are Northeast Boulevard, New Castle Road, Maryland Avenue, and West Fourth Street. Secondary corridors include 30th Street, 12th Street (north of the Brandywine), Spruce and Church Streets on the Eastside.

Wilmington Neighborhood Transit Strategy

Map 4: Median Household Income



Legend

- $8,000 - $17,000
- $17,000 - $26,000
- $26,000 - $36,000
- $36,000 - $45,000
- $45,000 - $54,000

Per Census Tract
Source: 1990 Census

0 0.5 1 Miles

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Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

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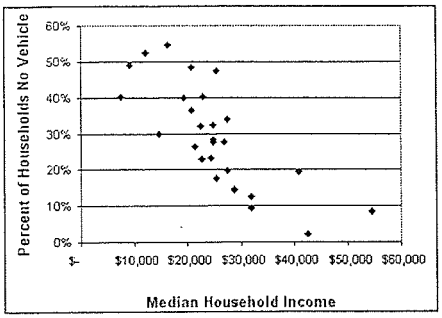

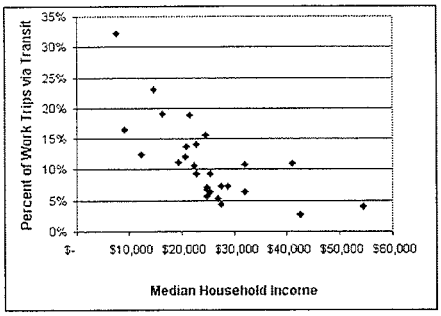

Charts 1 – 2:
Car Ownership and Transit Work Trips versus Median Household Income

Source: 1990 Census

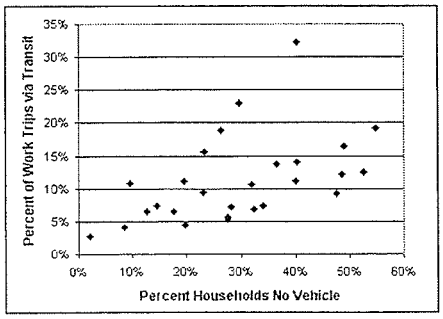

Chart 3: Transit Work Trips versus Households with No Vehicle

Source: 1990 Census

The Midtown Brandywine neighborhood, though small, is an enclave of middle income households located directly adjacent to the CBD. This neighborhood and the Trinity Vicinity area south of Delaware Avenue are exceptions to the rule that only lower income areas are found in Wilmington's downtown. These areas also show the marketability of Wilmington's older row houses, when the housing is in uniformly good condition, and the streetscape has been upgraded to reflect Wilmington's historic charm. However, the varying fortunes of Trinity Vicinity also show how the desirability of these downtown areas is impacted by crime rates and the health of adjoining neighborhoods.

Upper income areas tend to be found at a further distance from the downtown, in primarily suburban style settings with landscaped boulevards and parkland. The historically prestigious neighborhoods in Wilmington include the area around Rockford Park, Wawaset Park, and Brandywine Hills. The Trolley Square/40 Acres neighborhood has also become a magnet for young, upper-income professionals who are attracted by its charm, mixed-use character, and proximity to downtown and Brandywine Park.

Car Ownership

Rates of car ownership are also a strong predictor of transit usage. However, car ownership is influenced by a number of factors, including age, income, parking availability, and the level of inconvenience associated with not having a car always available. In Manhattan, where parking is expensive or problematic, and transit is often faster than driving, car ownership rates are very low. In rural areas, by contrast, even extremely poor households have a vehicle, because life is impossible without one.

The Chart 3 shows the percentage of journey to work trips made via transit versus the percentage of households with no vehicle. As before, the chart shows a strong relationship, but with substantial variation.

Overall car ownership rates in Wilmington are quite low compared with national averages. The U.S. Census reports households by the number of vehicles available. In 1990, nearly 28 percent of Wilmington's households reported having no vehicles available, compared with the national figure of 11.5 percent. (By way of comparison, the ratio for New York City, America's most transit friendly city, is 52 percent). The total number of households with no vehicle in Wilmington is nearly 7,700. Based on the average household size and age figures for Wilmington, this segment of the transit dependent population numbers around 18,000, of whom are over the age of 14.

The lower rates of car ownership in Wilmington are partially driven by a larger number of elderly households. In Wilmington, 27 percent of households are headed by persons 65 years of age or older, compared with 22 percent nationally. For these older households, 42 percent do not have a vehicle available, compared with 22 percent of older households nationally. For

households whose head is under 65 years of age, 21 percent do not have a vehicle, compared with 8 percent nationally. Therefore, even accounting for the somewhat greater proportion of elderly residents in Wilmington, car ownership rates are still far below the national norm.

Geographically, higher concentrations of households with no vehicle are found in lower income areas and close to the downtown. This is to be expected, as low-income households have less money to spend on cars, people living close to the downtown can more easily do without a car, and people expecting to be without a car are more likely to choose a downtown residence. Moreover, there is also a correlation between households with only one vehicle available and proximity to downtown. Finally, areas with a concentration of senior residents also tend to have lower rates of car ownership. Auto ownership rates by census tract are shown on *Map 5: Households by Vehicles Available.*

In addition to car ownership rates, the density of households with no car is also a useful metric for transit planning. This density is shown on *Map 6: Density of Households with No Vehicles.* This provides a rough measure for evaluating where the transit dependent population is concentrated. As the map shows, the greatest concentrations are found in the following areas:

- The West 4th Street corridor
- West Center City
- The Eastside
- The North Market Street corridor
- The Northeast Boulevard corridor
- Trolley Square (partly due to the concentration of senior high-rises)

These areas warrant special consideration for transit planning.

Work Destinations

The ability to serve journey to work needs with transit is directly related to where people work. Downtown workers are the easiest to serve. People who commute to New Castle County are harder to serve, with the difficulty varying greatly from work site to work site. People who work outside of New Castle County are largely impossible to serve, unless they work in Philadelphia.

Map 7: Workers by Place of Work shows workers destinations as reported in the 1990 Census. Note that at the time of the census, the downtown employment picture was substantially different than it is today. However, the data are generally favorable from the standpoint of transit use. As the maps shows, in most tracts around half or more of workers work in Wilmington, and only a tiny fraction work outside of New Castle County. The proportion of people working in Wilmington increases in tracts closer to the CBD. This is expected, as downtown workers would be more likely than others to choose a close-in residence, and close-in residents have

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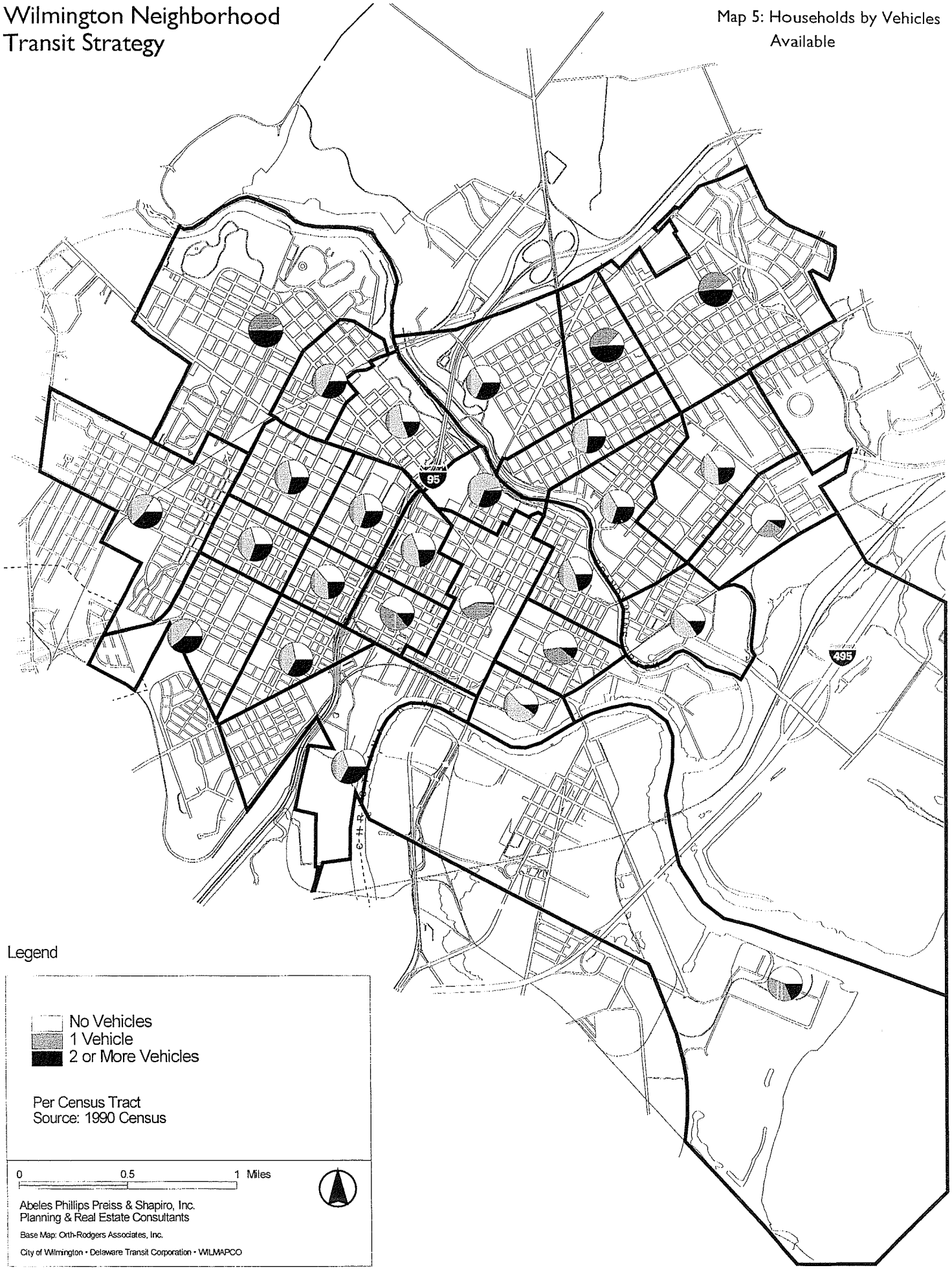
Map 5: Households by Vehicles Available



Legend

- No Vehicles
- 1 Vehicle
- 2 or More Vehicles

Per Census Tract
Source: 1990 Census

0 0.5 1 Miles

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Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

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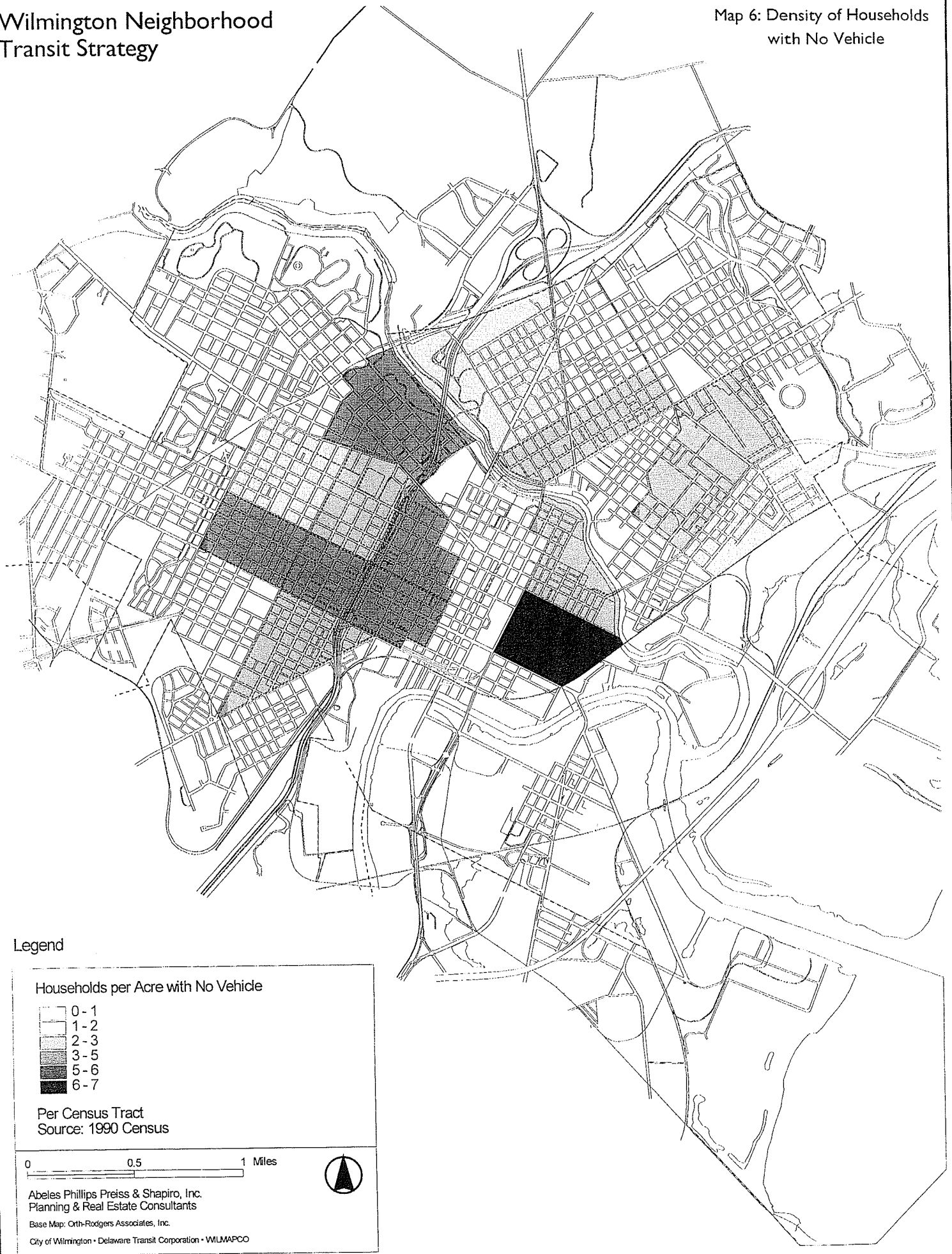
Map 6: Density of Households with No Vehicle



Legend

Households per Acre with No Vehicle

- 0 - 1
- 1 - 2
- 2 - 3
- 3 - 5
- 5 - 6
- 6 - 7

Per Census Tract
Source: 1990 Census

0 0.5 1 Miles

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Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

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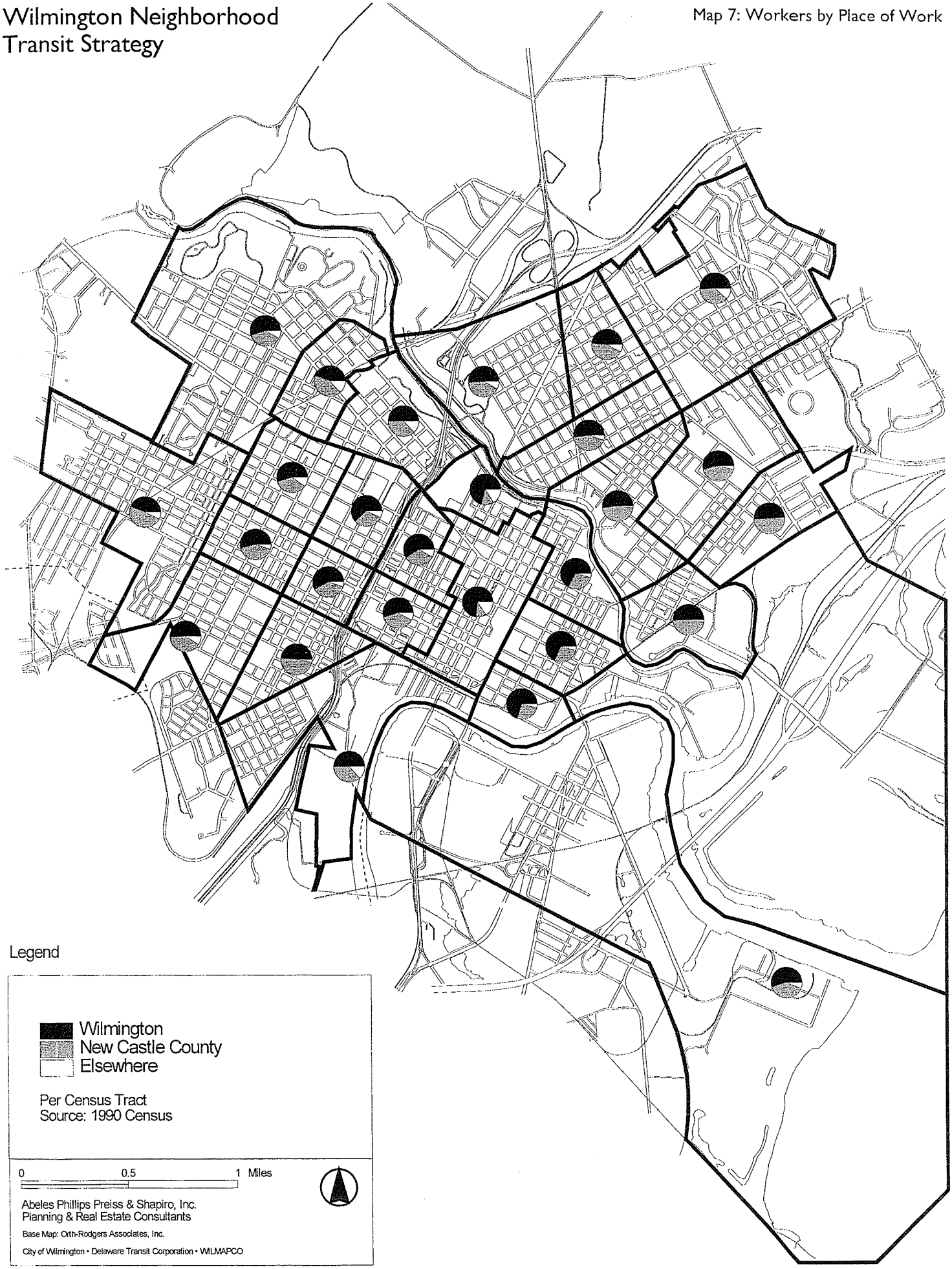
Map 7: Workers by Place of Work



Legend

- Wilmington
- New Castle County
- Elsewhere

Per Census Tract
Source: 1990 Census

0 0.5 1 Miles

Abeles Phillips Preiss & Shapiro, Inc.
Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

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a predisposition to favor downtown job opportunities over others.

Overall, 53 percent of Wilmington residents work in Wilmington. With a labor force of an estimated 36,000 people, this would suggest that around 19,000 of Wilmington's jobs are held by Wilmington residents (1990 Census). With a total number of jobs in Wilmington of around 70,000, the commuters coming from outside the City outnumber in-town commuters by a factor of over 2.5 to one.

Commuting Mode

The only comprehensive journey to work data at the tract level come from the 1990 U.S. Census. As noted earlier, the employment landscape in Wilmington has changed greatly since then. However, the growth in both transit ridership overall and in downtown employment suggest that since 1990, the share of work trips accomplished by transit or walking should have held their ground or even increased in the interim.

Census data of citywide commuting patterns show that driving to work consumes a much lower percentage of work trips in Wilmington compared with national averages, although it remains the dominant mode. Significantly more people ride buses than the national average, and over three times the share of people walk. This latter statistic demonstrates the extent to which Wilmington's compact, dense and pedestrian friendly urban form encourages and facilitates walking as a mode of transportation.

Table 4: Commuting Mode in Wilmington

	Drove alone	*Carpool*	*Bus*	*Rail*	*Walk*	*Other*
Wilmington	61%	15%	8.9%	0.73%	13%	1.7%
U.S.	75%	14%	3.1%	2.2%	4.0%	1.5%

Source: 1990 U.S. Census. Does not include people who work at home.

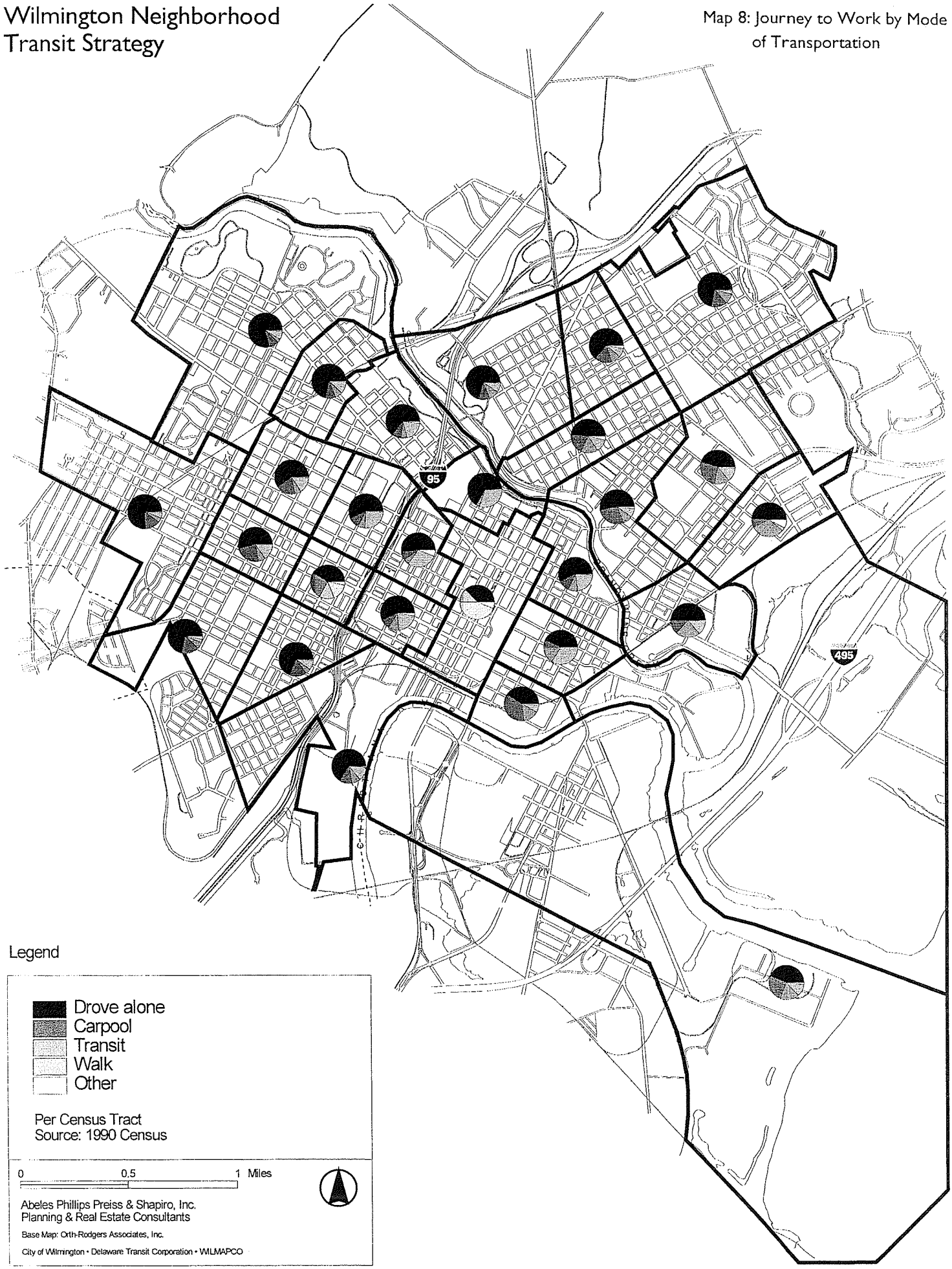
Map 8: Journey to Work by Mode of Transportation shows a summary of journey-to-work data by census tract. As expected, transit accounts for a higher share in neighborhoods which are denser and have more households with no vehicle. More interesting is the relationship between walking and transit. Census tracts within a convenient walk of the downtown show high levels of walking to work—in some cases, a quarter or more of all work trips are made by walking. However, transit use for commuting drops off closer to downtown, precisely because walking becomes the faster and more convenient option.

5.2 Land Use Summary

Although small in total population, Wilmington offers many of the attributes of a transit supportive city. These include a highly concentrated center of employment in the downtown,

Wilmington Neighborhood Transit Strategy

Map 8: Journey to Work by Mode of Transportation



Legend

- Drove alone
- Carpool
- Transit
- Walk
- Other

Per Census Tract
Source: 1990 Census

0 0.5 1 Miles

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Base Map: Orth-Rodgers Associates, Inc.

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densely developed residential neighborhoods, and a mixed-use character. However, it suffers from a lack of good neighborhood shopping in most neighborhoods. The city is also divided by several highways and traffic arteries, creating zones of pedestrian disconnection.

The following discussion focuses on land use characteristics that influence transit use, including the following:

- Employment density and commercial floor space in the CBD
- Population and residential density
- Distribution and patterns of use

Employment and Commercial Density

Estimated employment for the City of Wilmington varies from 68,000 to 71,000 depending on the source of the estimate[19]. The City therefore accounts for between 22 – 23 percent of all the jobs in the County—over one in five. Downtown employment is estimated at 45,000, and may increase up to 60,000 by 2010[20]. This employment is concentrated in a small but elongated area measuring slightly over 0.3 square miles. The downtown business area is nearly a mile long at its longest point, and around 0.6 miles wide at its widest point.

The total amount of office floor space in the downtown has been estimated at 12 million square feet, including government offices. The amount of active retail in the downtown on Market Street is much less—the most recent estimate is around 140,000 square feet. The first phase of the Shipyard Shops adds around 100,000 square feet, and Kahunaville likely adds another 30,000 square feet. Adding in smaller retail spaces scattered throughout the downtown brings the total retail to around 300,000 square feet. These represent small additions to the total amount of commercial floor space, therefore, the total downtown non-residential floor space is still roughly 12 million square feet.

The downtown is not the only employment center in Wilmington or New Castle County, although it is by far the greatest concentration of employment in the City and County. Other employment centers in Wilmington include Pennsylvania Avenue, St. Francis Hospital on Clayton Street and the Lea Boulevard/Miller Road area, South Wilmington, and the riverfront. Regional employment patterns are shown on *Map 9: Regional Employment Density.*

Population Density

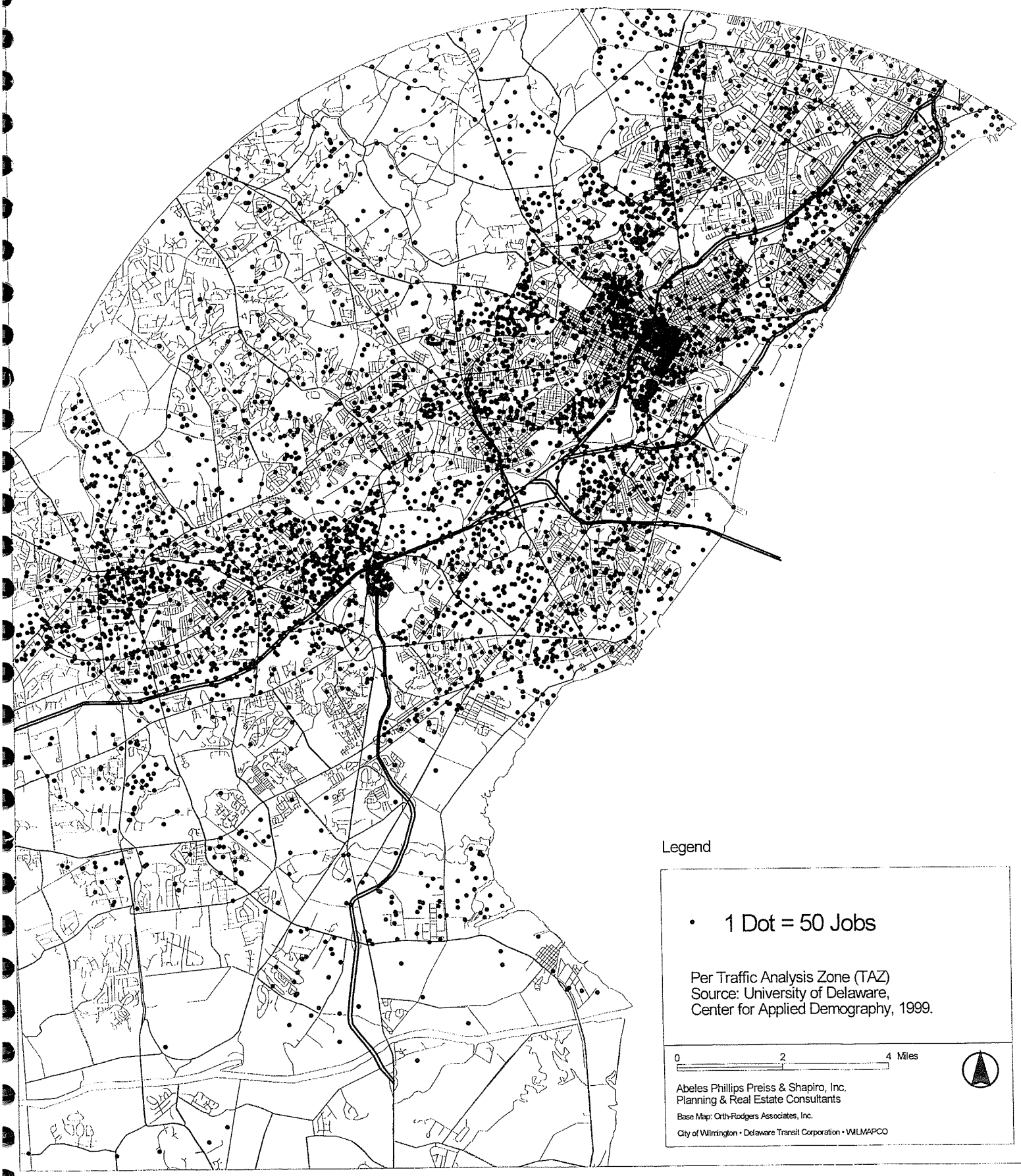
While employment is heavily concentrated in the downtown, the residential population is not. For the traffic analysis zones that comprise the downtown area (defined as the area between I-95 and the two rivers), the total population is about 12,000, or 17 percent of the total population. Of this, 63 percent is located on the Eastside, which is one of Wilmington's most densely populated neighborhoods.

19. The low figure is derived from TAZ demographic estimates provided by the University of Delaware Center for Applied Demography, 1999. The high figure is from TransManagement, Inc. *Downtown Wilmington Land Use and Development Capacity Assessment,* Wilmington Area Planning Council. August, 1997.

20. SG Associates, Inc., *Wilmington Transportation Studies: Transit Shuttle Feasibility Analysis,* City of Wilmington, DelDOT and WILMAPCO. May 1998.

Wilmington Neighborhood Transit Strategy

Map 9: Regional Employment Density



Legend

• 1 Dot = 50 Jobs

Per Traffic Analysis Zone (TAZ)
Source: University of Delaware,
Center for Applied Demography, 1999.

0 2 4 Miles

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Based on the latest demographic figures for Traffic Analysis Zones (TAZs), gross population densities in Wilmington range from a low of few hundred people per square mile in Rockford Park, to a high of nearly 44,000 people per square mile in Trolley Square (not counting TAZs that are correspond unpopulated areas such as the downtown, manufacturing districts and railway yards). The average population density of Wilmington is 6,700 people per square mile. In terms of household densities, Wilmington's neighborhoods range from low of around 2 to a high of 37 dwelling units per acre, with the City's overall density being around 4.8 DU/Acre. Note that the citywide figures include substantial portions of non-residential land, including manufacturing districts and the commercial portions of the downtown. According to the City Planning Department, around 37 percent of Wilmington's total land area is zoned for residential uses. Therefore, the actual average population and residential densities are probably more than double the figures quoted above, or around 18,100 people per square mile and 13 DU/Acre. Population and residential densities are shown on *Maps 10 and 11.*

The Trolley Square neighborhood has the highest population densities in Wilmington, and a significant number of senior residences.

Contrary to expectation, density does not necessarily track well with either the income level or desirability of Wilmington's neighborhoods. In fact, Trolley Square is not only one of the most popular neighborhoods in Wilmington, it is also by far the densest. Other dense areas include the West 4th Street Corridor, the North Market/Washington/Concord Pike area in northern Wilmington, and the Eastside. While the Eastside is the second densest area in Wilmington, data may underestimate actual population densities in other areas, as there is reportedly significant overcrowding in some West Center City and Hilltop housing units.

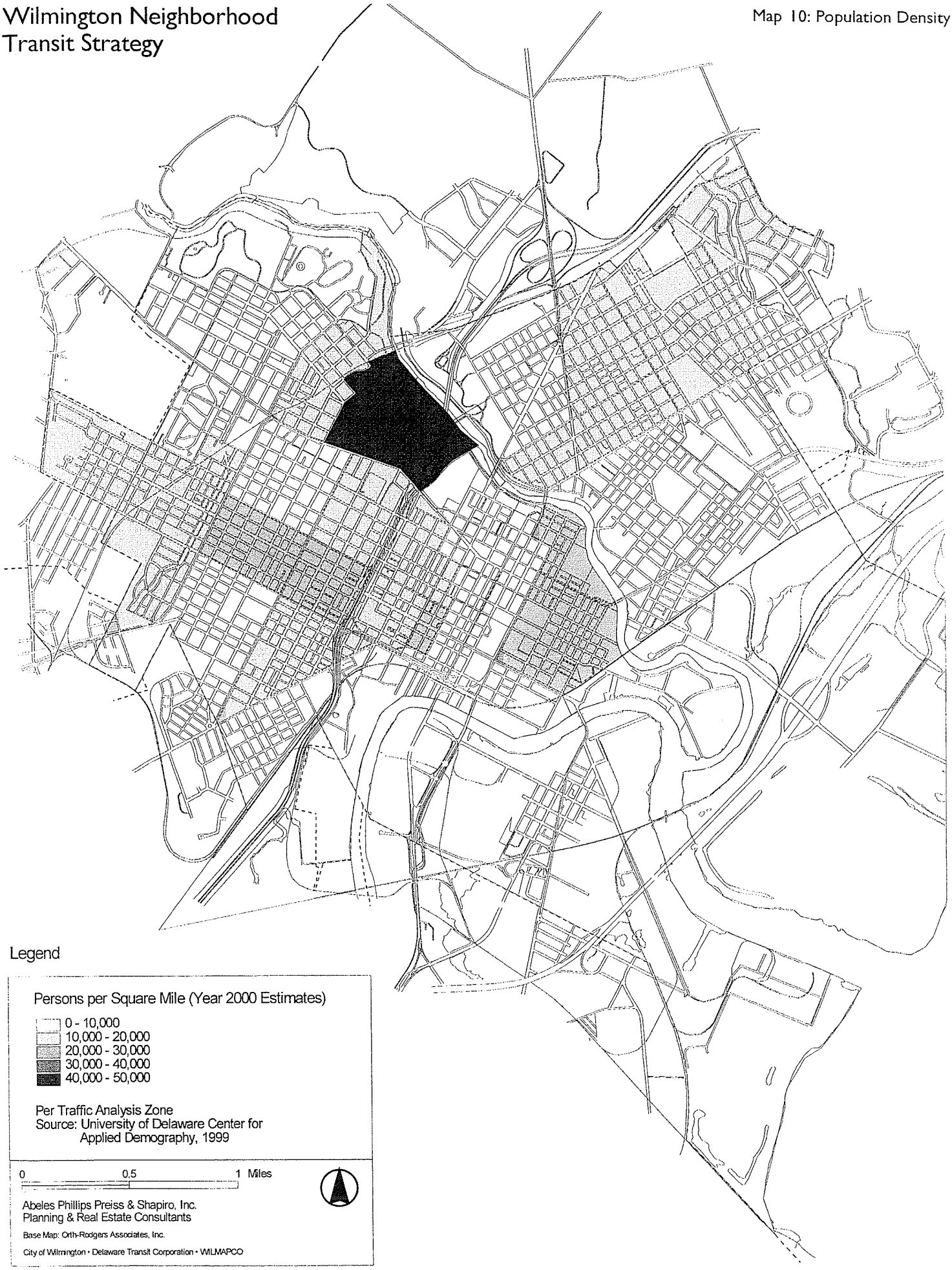
5.3 Land Use Vision and Trends

Land Use patterns in Wilmington are in a state of transition, after a long period of little change. These changes are driven by a combination of local priorities and regional planning goals. Stated simplistically, the land use vision for Wilmington—as articulated by City and State agencies, local development corporations, and WILMAPCO—includes the following goals:

- Concentrate office buildings, apartments, and stores in the downtown, creating a dense and vibrant mixed-use environment.
- Make the Christina Riverfront into a major regional destination for retail, entertainment and tourism.
- Over the longer term, pursue moderate and high density housing on the riverfront, adjacent to the train station.
- Incrementally upgrade Wilmington's neighborhoods and the quality of their housing stock, without making major changes to their form, scale or density.
- Reconfigure South Wilmington as a lower-rise extension of the downtown office district, to accommodate additional office development that could not be accommodated downtown, as well as moderate density housing development.

Wilmington Neighborhood Transit Strategy

Map 10: Population Density



Legend

Persons per Square Mile (Year 2000 Estimates)

- 0 - 10,000
- 10,000 - 20,000
- 20,000 - 30,000
- 30,000 - 40,000
- 40,000 - 50,000

Per Traffic Analysis Zone
Source: University of Delaware Center for Applied Demography, 1999

0 0.5 1 Miles

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Base Map: Orth-Rodgers Associates, Inc.

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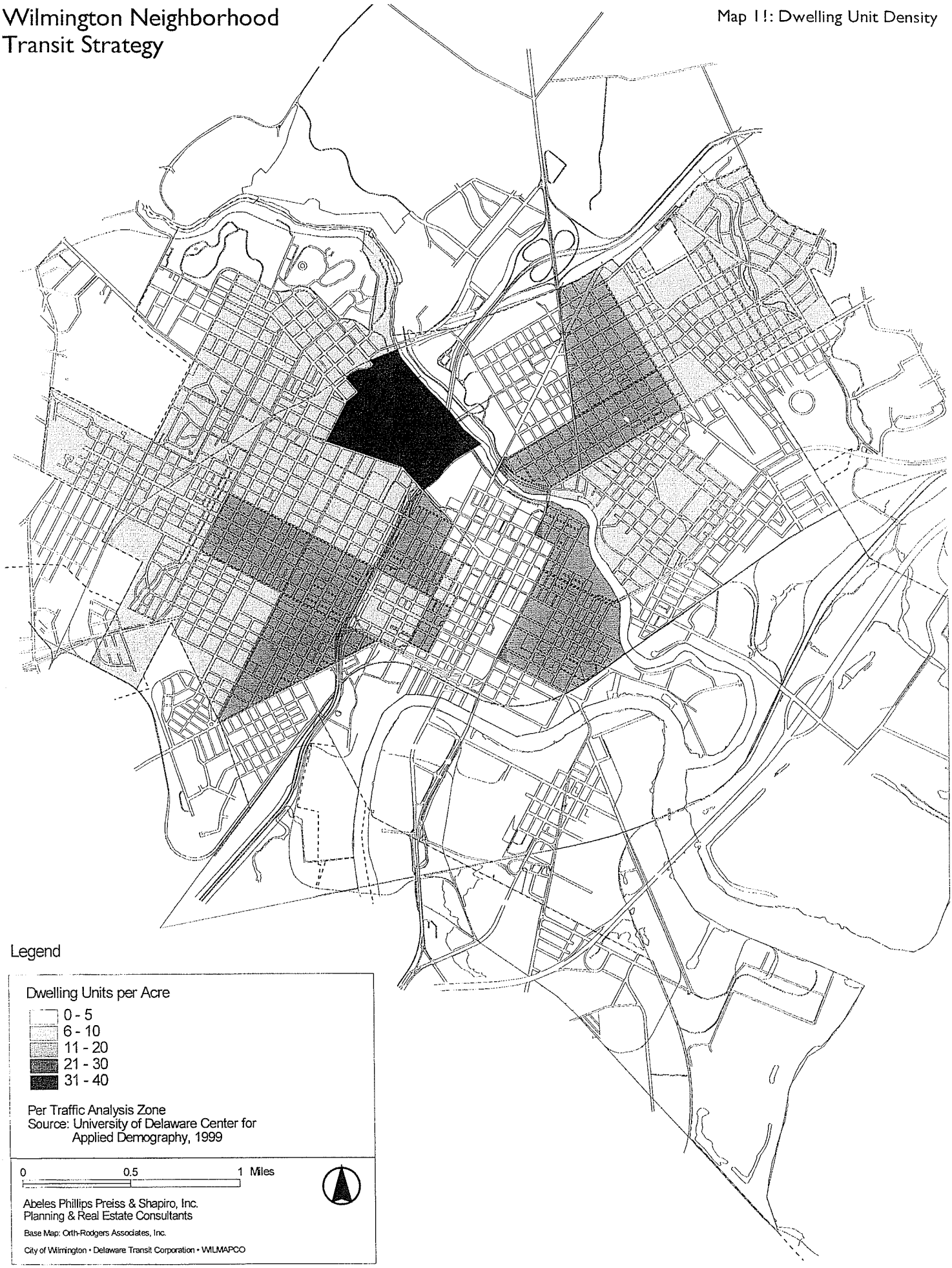
Map 11: Dwelling Unit Density



Legend

Dwelling Units per Acre

- 0 - 5
- 6 - 10
- 11 - 20
- 21 - 30
- 31 - 40

Per Traffic Analysis Zone
Source: University of Delaware Center for Applied Demography, 1999

0 0.5 1 Miles

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Base Map: Orth-Rodgers Associates, Inc.

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Each land use priority is driven by a specific advocate or entity. Downtown development has been championed by the City's Department of Economic Development, and the City-created Wilmington Renaissance Corporation (WRC). The City and WRC have worked together to maximize the development potential of the downtown. Their efforts have met with substantial success. The total level of downtown office space in the downtown has substantially increased throughout the 1990s, with a commensurate increase in employment. These gains have been achieved even as the original anchor, DuPont, has been diminishing its downtown presence. Moreover, the number and quality of educational and cultural institutions in the downtown has also greatly increased. Signature projects include the expansion of the Grand Opera House, and creation of new higher education facilities, such as the Delaware College of Art and Design. There have been smaller efforts in which the Department of Economic Development and WRC have played a key role, including the opening of several restaurants downtown. Future projects will bring new housing into the downtown, including the conversion of the Nemours building into a mix of offices and apartments; the Ships Tavern District, which will include around 75 apartments; and future residential projects in other older office buildings.

At the same time, the City and the Riverfront Development Corporation (RDC) have pursued a complementary vision for the riverfront. The recently completed Riverwalk has transformed a former industrial wasteland into a strikingly handsome linear park. The Shipyard Shops development is open for business, and is proving to be a popular attraction. Kahunaville is well established as a regional destination, as are the Blue Rocks baseball games at Frawley Stadium. The First USA Riverfront Arts Center has drawn up to 100,000 visitors a month for blockbuster attractions such as the Nicholas and Alexandra exhibit. Even more development is currently underway, including the Backstage Nightclub. Put together, the riverfront development will transform the competitive position of Wilmington in the regional marketplace for leisure time and dollars.

The efforts of the City, WRC and RDC have been aided by the regional planning goals of the regional transportation planning body, WILMAPCO. A combination of growing traffic congestion in the suburbs, strong anti-growth sentiment in New Castle County, and increasing problems with clean-air non-attainment have collectively driven a policy of channeling as much growth as possible into existing urban areas. Wilmington, as the largest city, and with an infrastructure designed to support a population of well over 100,000, is well positioned to absorb additional development within its borders. To this end, WILMAPCO has partnered with the City, DelDOT and DTC to sponsor a number of studies (including this one) aimed at maximizing the development potential of Wilmington. One such series of studies, the Wilmington Initiatives, provides a textbook case study for the sensitive melding of transportation and neighborhood planning. Wilmington Initiatives projects have already transformed many of Wilmington's downtown and neighborhood streets.

While the downtown and the riverfront have strong advocates and oversight, neighborhood

efforts are much more fractured. The main advocates and organizing forces for neighborhood revitalization are the Wilmington Department of Real Estate and Housing (WDREH), and the Wilmington Housing Partnership (WHP). There are also a variety of small community development corporations and faith-based nonprofits active in Wilmington's neighborhoods and undertaking variety of rehab and new construction projects. However, the lack of CDC capacity has been identified as a key weakness of Wilmington's neighborhood infrastructure, by both the Enterprise Community Strategic Plan and by the most recent Consolidated Plan[21, 22]. The Neighborhood Planning Councils are also heavily involved with planning and revitalizations efforts in the neighborhoods.

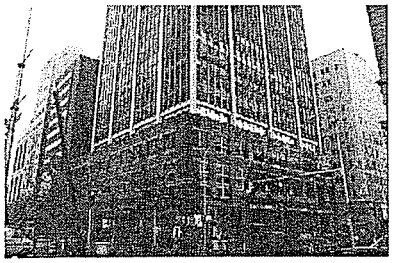
The land use changes occurring downtown and on the riverfront affect the distribution and quantity of destinations, but have yet to affect the sources of transit demand—Wilmington's residential neighborhoods. For the most part, there is very little change occurring in Wilmington's neighborhoods. The residential areas are largely built-out. Where new development is occurring—mostly in the form of redevelopment projects such as McCaulley Court—the new development is similar in scale and density to the existing context. Commercial areas outside of the downtown are not experiencing any substantial growth—if anything, many commercial areas have been losing vitality. While the prestige neighborhoods are retaining their value, there is the sense that many of Wilmington's older row house neighborhoods, with their older and smaller housing stock lacking modern amenities, are not well positioned to compete in the regional housing market.

There are some exceptions to this characterization. Future housing development on the riverfront would add an additional source of demand for transit. This demand would likely be met in the form of a downtown circulator—in fact, the marketability of such housing will be greatly enhanced by the eventual development of the Market Street Trolley. This new housing will also bolster downtown retail revitalization efforts. In addition, the Ships Tavern District will add a modest number of units to downtown. However, the number of units is too small to greatly affect transit usage, and most residents who work downtown will either walk, or take the trolley.

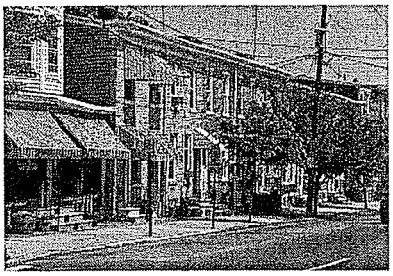
As a final exception, the planned HOPE VI redevelopment of public housing in northeast Wilmington will be one of the largest scale housing developments to be undertaken in Wilmington in some time. This project, and future HOPE VI projects, provides an important opportunity to include transit routes and facilities in the redesign, and improve transit access for areas with the lowest rates of car ownership and the greatest need for job access. Transit and pedestrian friendly design principals should be applied throughout. Further, the relationship of these developments to their major transit corridor—Northeast Boulevard—needs particular attention.

21. Empowerment Zone Enterprise Community Strategic Plan, Kise, Straw & Kolodner, 1998.

22. City of Wilmington Consolidated Plan, Kise, Straw & Kolodner, 2000.



Wilmington's combination of concentrated downtown employment and compact neighborhoods supports frequent bus service.



5.4 Land Use and Public Transit in Wilmington

It has long been axiomatic among transportation and urban planners that transit works best in denser areas. It stands to reason that where there are more people living or working close to one another that more trips will be made, and that as density increases, using an automobile becomes more difficult and therefore a higher share of these trips would be made by transit. In 1977, Pushkarev and Zupan published *Public Transportation and Land Use Policy,* which documented this phenomenon and provided detailed quantitative analysis to determine the guideline thresholds of density that could reasonably support varying intensities of service and modes of transit.

With respect to local bus service, *Public Transportation and Land Use Policy* concluded that in residential neighborhoods of 4, 7, and 15 dwellings per net acre (acres devoted to housing), transit service could be supported of 20, 40 and 120 buses per day (one-direction), respectively. Of course, service would be tailored to be more frequent in the peak periods, less so in the off-peak. These residential densities roughly translate to 3,000, 7,000 and 11,000 persons per square mile. Similarly, the concentration of non-residential activities influence transit use and effectiveness. Concentrations in central business districts (CBDs) of 5 to 8 million square feet (MSF) of non-residential floorspace can support the lowest level of bus service described above. At 7 to 17 MSF, a middle level of 40 buses per day can be supported and at 17 to 70 MSF the highest levels of bus service, equivalent to a bus every ten minutes throughout the day are supportable[23].

As both residential densities and downtown size increases, bus service begins to slow, which can lower the attractiveness of the service and drive up labor costs. The slower service comes about because of greater traffic congestion in higher density areas, and more stopping to serve the increased ridership. The alternative can be express bus service that boards its passengers at fewer stops and then bypasses the others. Or it can involve the creation of a fixed guideway route, operating separately from street traffic, such as can be found with a light rail system. Express buses that board riders at suburban locations can work at quite low residential densities if they rely on riders to access the bus stops at park and ride locations, saving the bus operator the high cost of circulation in low-density areas. These types of express bus operations can work in metropolitan areas with CBDs of about 20 MSF or more.

Light rail can also work with CBDs of over 20 MSF, but the high cost of the right-of-way is a key factor. If the right-of-way is not already available, then the cost of acquiring it drives up the CBD threshold to about 35 MSF. The guidelines in *Public Transportation and Land Use Policy* indicate that residential densities averaging nine dwellings per acre in a broad corridor can support a light rail line. These guidelines should be taken as just that – guidelines. Higher and lower thresholds may depend on a host of other conditions, such as the patterns of development, supporting urban design features, transit cost structures, willingness to subsidize transit services, etc.

23. Public Transportation and Land Use Policy, Pushkarev and Zupan, Indiana University Press, 1977.

How does Wilmington stack up with respect to these density thresholds?

As discussed earlier, the average residential density in Wilmington's residential areas is around 13 dwellings per acre. This falls between the middle and high levels of bus service postulated in the guidelines, with the average closer to the higher level. Thus, on average, Wilmington should expect to support bus frequency throughout the day of between 40 and 120 bus trips. In fact, bus service frequencies in Wilmington fall nicely in that range, with more frequent service generally available in the higher density areas. Any shortcomings, i.e. areas whose densities might justify more service than currently available, would require more detailed evaluation than is possible here. As far as light rail and residential density is concerned, the threshold of nine dwellings per acre is achieved in some areas, but is not sustained over a corridor area of 25 to 100 square miles.

The size of Wilmington's downtown, measured in terms of non-residential floorspace, is estimated to be somewhat more than 12 MSF. This suggests the ability to support a rather robust level of local bus service—perhaps somewhat more than the middle level described above, but somewhat less than the highest frequency level, conforming well to the findings regarding residential density. The size of Wilmington's downtown is not sufficient reason alone to establish a light rail line; however, such service can be justified and has been advocated for economic development reasons (*Wilmington Transit Connector Study,* Abeles Phillips Preiss & Shapiro, 1999).

The frequency of local bus service, as well as the span of service and the increase in service coverage, can only improve with greater residential density in its neighborhoods and with a growing downtown. These land use changes come slowly, and in some cases may not happen because of the market or consumer preferences. But with or without more density, transit service can be improved through actions to make the transit system more attractive, as described in this report.

6 Overall Objectives: Criteria for Transit Improvements

Traditional transit studies concentrate on goals such as increasing ridership and improving operating efficiency. These goals are vital to bolster the financial health of the transit agency, increase ridership, reduce vehicular traffic, and improve air quality. However, the unique charge of this study is to look beyond the usual criteria for transit systems and instead create a framework for thinking about transit in relationship to neighborhood development and quality of life. Central to this task is the insight that transit service is a key attribute distinguishing urban neighborhoods from their suburban competition. Therefore, it may be useful for development purposes to provide a level of transit service that goes beyond what would typically be provided if effectiveness, efficiency, and traffic/pollution mitigation were the only objectives. An example is the City Circuit—a service that is purposely underpriced and heavily subsidized in order to encourage circulation between the riverfront and downtown.

With this in mind, the following planning goals have been formulated to guide proposed improvements in Wilmington's transit service:

1. **Improve mobility for the transit dependent population**

   Wilmington's neighborhoods are diverse, and individual reasons for using the transit system will be equally diverse. Fundamentally, however, many people who use the system today do so simply because they have to. Many neighborhoods have a high concentration of people who can be considered "transit dependent"—those who live in a household with no car, and those who are too old or too young to drive, and those who have a disability that precludes driving. For these people, the quality of the transit service will have a direct relationship to the life choices available to them, including where they can take a job, where they shop, and what they do with their leisure time.

   Because transit service will determine the vector of employment opportunities available to individuals without cars, it also relates directly to economic development. The more residents are able to find gainful employment, the more income there will be in each neighborhood to spend on housing and retail. Improved access to more and better paying employment opportunities will generally lead to improvements in the housing stock and more sales for local stores.

2. **Provide a viable transit alternative to car ownership**

   One key advantage that Wilmington's neighborhoods can offer is the ability for a household with one or more wage-earners to get by with fewer cars than would otherwise be required. The assumption is that even households with the means to afford one or more vehicles might prefer to spend that money on other things, given the choice. In fact, the scenario of a two-worker household with one car is more likely than a one-worker household with no car. Even still, neither scenario is credible in the absence of a transit service

that provides quick and convenient access to work—the kind of access with which busy professionals will not grow frustrated over time.

Because the transit-dependent population is unlikely to grow in Wilmington, and may in fact shrink if the economy continues to expand and people's economic circumstances improve, attracting the discretionary rider is crucial not only to increasing, but even maintaining, current levels of ridership. Fortunately, recent increases in ridership show that transit can support a booming city economy and vice versa. These ridership increases are likely due both to an increase in the number of jobs (and therefore the level of commuting) and increasing parking costs and shortages in the downtown. This growth could not have occurred without increases in the number of discretionary riders.

A transit-oriented lifestyle needs more than convenient access to work, however. Workers today do more than go to work in the morning and return home at night. In two wage-earner households, shopping and other duties are shared. Moreover, people often go out to entertainment or dinner after work, and need a means of getting home. In addition to evening and weekend service, living with fewer cars is more viable if the work destination offers easy walking access to a variety of shopping opportunities (such a successful downtown offers); and if the residential neighborhood also offers shopping within an easy walk of home (such as Trolley Square offers). Successful mixed-use neighborhoods are therefore more likely to support discretionary transit use.

3. Enhance the identity and image of Wilmington's neighborhoods

Wilmington is a city of neighborhoods. Each has its own heritage and identity, and different neighborhoods have had varying degrees of success in retaining that unique sense of identity. These neighborhood distinctions offer the opportunity to put a more friendly face on the transit system, by using the system to reinforce and celebrate each neighborhood. While more difficult to do with a bus system than a rail system with identifiable stations, the transit system should create neighborhood focal points in the same way that commuter rail stations once did for the streetcar suburbs. A case in point is Trolley Square, which is still known by that name long after the trolley barn was removed from the neighborhood center.

4. Complement economic development efforts throughout the city

Transit clearly helps support downtown development efforts, where development depends upon maximizing access to the full regional labor force and consumer base. Transit also helps reduce demand for parking, hence allowing land to be devoted to other uses. A key goal should be to extend this same benefit to the riverfront, which currently lacks good transit access. However, transit can also provide incremental help to neighborhood com-

mercial corridors. The results will not be dramatic—transit provides only a marginal increase in pedestrian traffic at most stops. However, by increasing visibility and using marketing techniques, the transit system can provide a boost to a variety of neighborhood retailing efforts.

5. Increase transit ridership

Back to basics, meeting all of the objectives listed above still means increasing transit ridership.

There are many factors that play a role in promoting greater transit use. Some directly relate to the quality and quantity of transit service provided. They include transit travel times, transit fare, frequency of service (which determines both the expected waiting times but also the convenience associated with the service), walking distances to the nearest transit stop with service to the desired destination, reliability, and the span of service offered, i.e., late nights and weekends. All of these are the responsibility, and also within the control, of the transit provider.

But other factors are more or totally within the jurisdiction of the local municipality and county. The amenities of the transit environment, including shelters at transit stops, seating, and availability of transit information, shape satisfaction with the transit service. These may be the responsibility of either the transit operator or the local jurisdiction, or they may be provided jointly. The walking environment at both ends of the prospective trip also impacts the transit experience. Ideally, the two walking portions of any transit trip should be short, direct, pleasant, interesting and safe. Zoning ordinances and municipal investments can influence these features.

The quality of the competition—the automobile—is also of great importance for prospective transit users. The cost and availability of parking at the destination, the level of traffic congestion experienced, and the convenience of the parking (distance to the destination) are the primary considerations for those choosing between the car and transit. Among these considerations, parking availability and convenience are areas that local jurisdictions can most directly influence.

Traffic conditions and roadway circulation patterns affect the speed of service, how circuitous the routes are, and therefore how reliable and readable the service is. City and county governments share responsibility for roadways and therefore can address such issues as bus priority lanes, street directions, and turning lanes, in addition to roadway capacity and dimensions.

Finally, land use and intensity of use matters. Transit operators will provide more service

if the customers are there. More people making more trips at the same time to the same place determine, in large measure, how heavy transit use will be. It is the uses and intensities to which land is put that largely determine transit use. Both the market place and local jurisdictions influence these land uses decisions.

7 Short-Term Transit Strategies

The following chapter provides a list of strategies designed to improve transit service in Wilmington. Most actions fall under the jurisdiction of the transit company, DTC; but other elements might be undertaken by the city, private landowners, businesses, and neighborhood and civic associations. Each strategy relates to the overall objectives discussed earlier, and each is designed to respond to one or more key neighborhood quality of life issues. The strategies address specific elements of the transit service, including the following:

- Span—the hours and days of system operation;
- Routing—where the buses run and which destinations they service;
- Other service considerations—frequency of buses during different parts of the day, the speed at which buses travel, and customer service; and
- Facilities—bus stops, shelters, benches, and informational signs.

In addition to these topic areas, special thought is given to the relationship between the bus service and the proposed Market Street Trolley. This includes the potential need for feeder loops connecting the neighborhoods to the trolley; and a general rethinking of the downtown bus network after the trolley begins operation.

7.1 Increasing Span

Currently, there is no regular transit service provided on Sunday in Delaware. Throughout the planning process, Sunday service emerged as the most pressing issue for Wilmington's transit riders. A secondary issues was service that runs later at night, especially to respond to the needs of retail employees and others who work later shifts.

Sunday Service

Based on both the outreach process for this plan, as well as prior studies, no issue looms as large in the minds of Wilmington's transit riders as extending transit service to Sundays. A substantial portion of Wilmington's population that does not have access to a car is essentially stranded on Sundays with no real means to access work, shopping or recreation, beyond that within walking distance (the Night Owl service, described in greater detail later, does provide some service on Sunday, primarily targeting a Welfare to Work population, and only serving work sites located within Wilmington). Taxicabs are an expensive and largely unreliable option. Therefore the provision of Sunday service is a high priority of this study.

Although the need for Sunday service is real, so are the barriers to its provision. Ridership levels are significantly lower on weekends than during the week. For example, the average daily ridership system-wide for a weekday is currently around 23,000 – 25,000, in contrast to 8,000 – 9,000 on a typical Saturday. Sunday ridership is likely to be as low or lower. Even accounting for lower levels of service, any increase over the existing service on weekends will place greater demands on DTC's resources. Mobilizing a significant portion of the bus network on

Sunday will require a substantial increase in expenditures without a corresponding increase in fare revenues. Moreover, DTC currently closes its operations on Sunday. Running even a limited Sunday service will entail opening storage yards, the dispatching center, and maintenance facilities for an extra day.

Some very limited Sunday service is currently offered via the Night Owl subscription service (described later). This demand-responsive service requires that user file a ride plan in advance, and it can only be used for trips to and from work. While a demand-responsive service can help fill in the gaps for important trips, like work trips, that may have dispersed origins and destinations, it does not easily allow for the more casual trips that people might make for shopping, eating out, entertainment, or visiting friends. Nor does it allow for impulse trips. These latter trips are best addressed with fixed-route service.

With this in mind, it is recommended that a new fixed-route Sunday service be implemented on a trial basis. The service should focus on Wilmington neighborhoods with the greatest number of transit-dependent households, and should connect them with the destinations they are most likely to access on a Sunday, including churches, suburban shopping malls, the Shipyard Shops, downtown, hospitals, and other suburban work sites that function on Sunday. The service will necessarily have lower coverage than the weekday, or even the Saturday, service. It will, however, provide an important new mobility option where none currently exists.

There are two ways the service could be provided. One is for DTC to run its own vehicles on the proposed routes. This would involve opening both the garages and the dispatching center on a day they are currently closed, greatly increasing the number of weekly staff hours. The second alternative is to contract with a private transit provider to run the service. Based on a rough estimate, the first option would likely cost two to three times as much as the second. However, since DTC is not at liberty to privatize its own fixed-route services, another entity would bear the responsibility of contracting out the service. Because of the cost savings, the option of contracting for the service is recommended.

While the destinations of Sunday riders are not known with precision, likely destinations can be inferred by Saturday ridership patterns. In the 1997 Rider Survey, riders were asked about the purpose of their trip. Work trips accounted for around 31 percent of Saturday trips. Shopping was an important weekend destination: 27 percent of Saturday trips were for shopping, compared with less than 6 percent on weekdays. Around 15 percent of trips were for socializing or recreation. Note that these figures are for New Castle County riders as a whole—Wilmington riders were not broken out for analysis. They do, however, suggest that at least 40 percent or more of weekend trips will be for shopping, recreation or other leisure activities.

Based on an analysis of demographic data, the following areas are determined to be the greatest sources of transit demand:

- The West Fourth Street corridor
- West Center City
- The Eastside
- Trolley Square
- The areas surrounding Northeast Boulevard south of 30th Street
- North Market Street area south of 30th Street.

Based on the 1997 Survey, public meetings and analysis of the geographic distribution of shopping, work and recreation, the following are judged to be the most important destinations to connect:

- Rodney Square and the train station, which are the current focus of the transit system
- The Shipyard Shops and riverfront attractions
- The shopping malls and work sites along US202
- The Christiana Mall, hospitals and work sites near the I-95/SR7 interchange
- Christiana Hospital
- Trolley Square shopping
- Adams Four
- Union Street

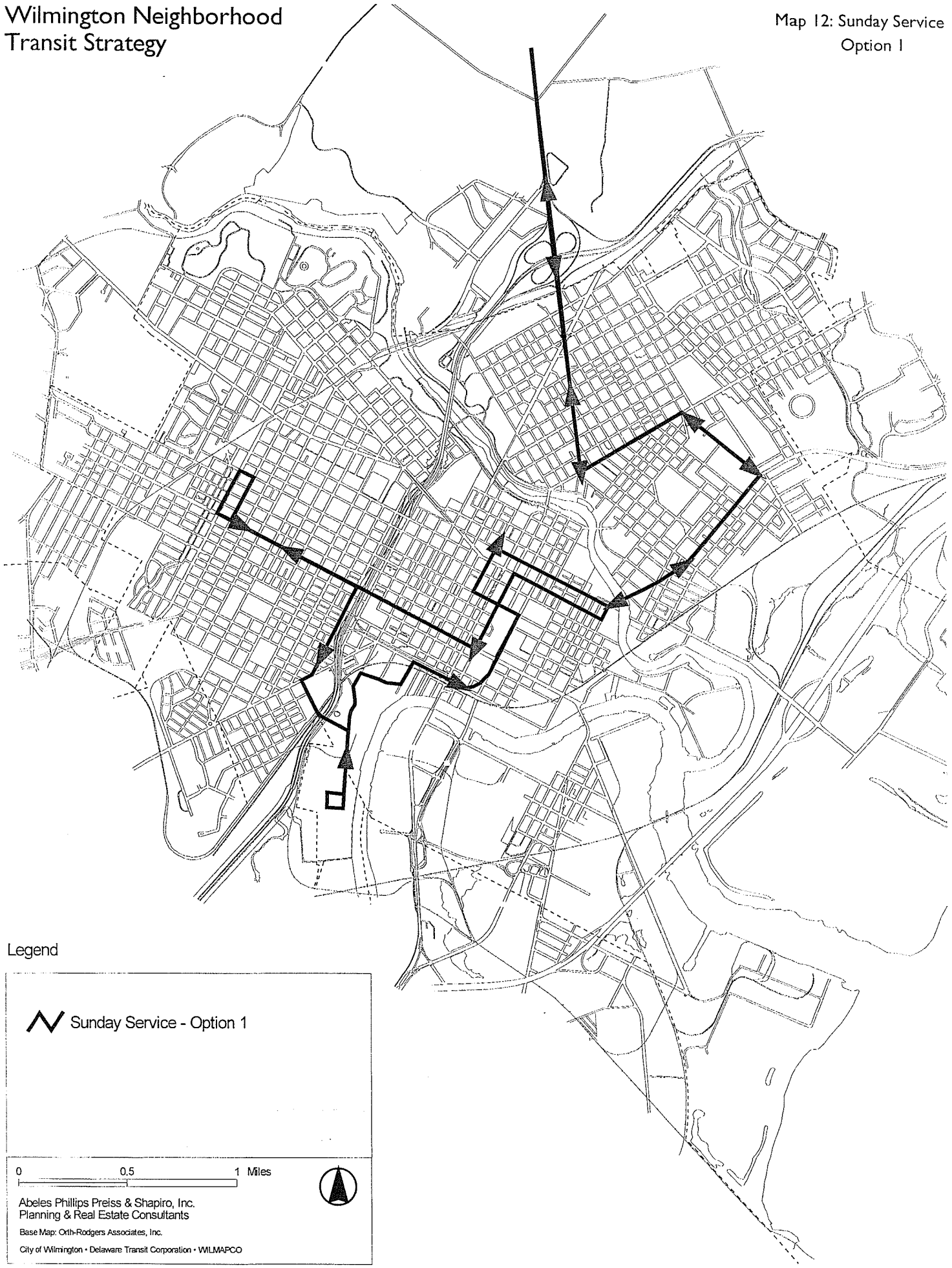
Another key destination, identified repeatedly in the neighborhood workshop, is Wilmington's churches. However, the number and distribution of churches, combined with the fact that church attendees may also be scattered all over Wilmington, makes it very difficult to design a single fixed-route service that will adequately address this transportation issue. However, two of the Sunday service options would address the issue to some degree, by providing a city circulator that would run within 1,000 feet of a portion of Wilmington's churches. The best solution may be a subscription-based service designed and supported by the churches themselves.

Recommendations

- **Implement a Sunday bus service connecting those neighborhoods with the greatest number of transit riders with the in-town and suburban destinations that are most likely to attract weekend riders.** Three Sunday service options are presented for Wilmington. Option 1 is a single fixed-route bus originating on Union Street and proceeding down each corridor before heading up US202. Option 2 combines a Shipyard Shops to Concord Mall/US202 service with an in-town circulator. Option 3 adds a third route from Rodney Square to the Christiana Mall and nearby destinations. Although any of the services would be a vast improvement over the current lack of service, Options 2 or 3 are strongly preferred because they better address in-town destinations as well as the need to get to church. The in-town circulator will also provide an important test of the circulator concept that might be extended to other days including Saturday. The options are diagramed on *Maps 12 – 14.*

Wilmington Neighborhood Transit Strategy

Map 12: Sunday Service Option 1



Legend

Sunday Service - Option 1

0 0.5 1 Miles

Abeles Phillips Preiss & Shapiro, Inc.
Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

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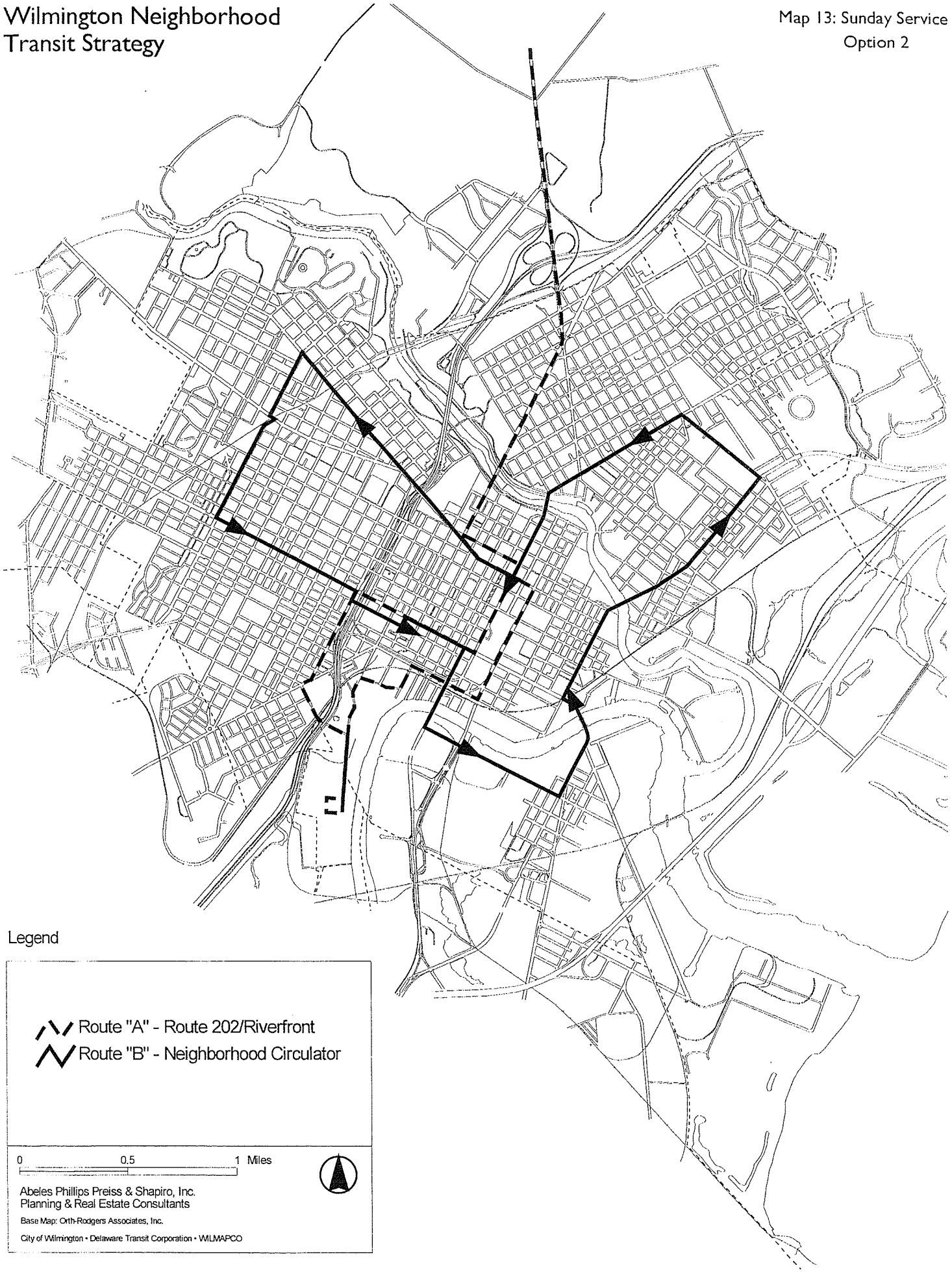
Wilmington Neighborhood Transit Strategy

Map 13: Sunday Service
Option 2



Legend

Route "A" - Route 202/Riverfront
Route "B" - Neighborhood Circulator

0 0.5 1 Miles

Abeles Phillips Preiss & Shapiro, Inc.
Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

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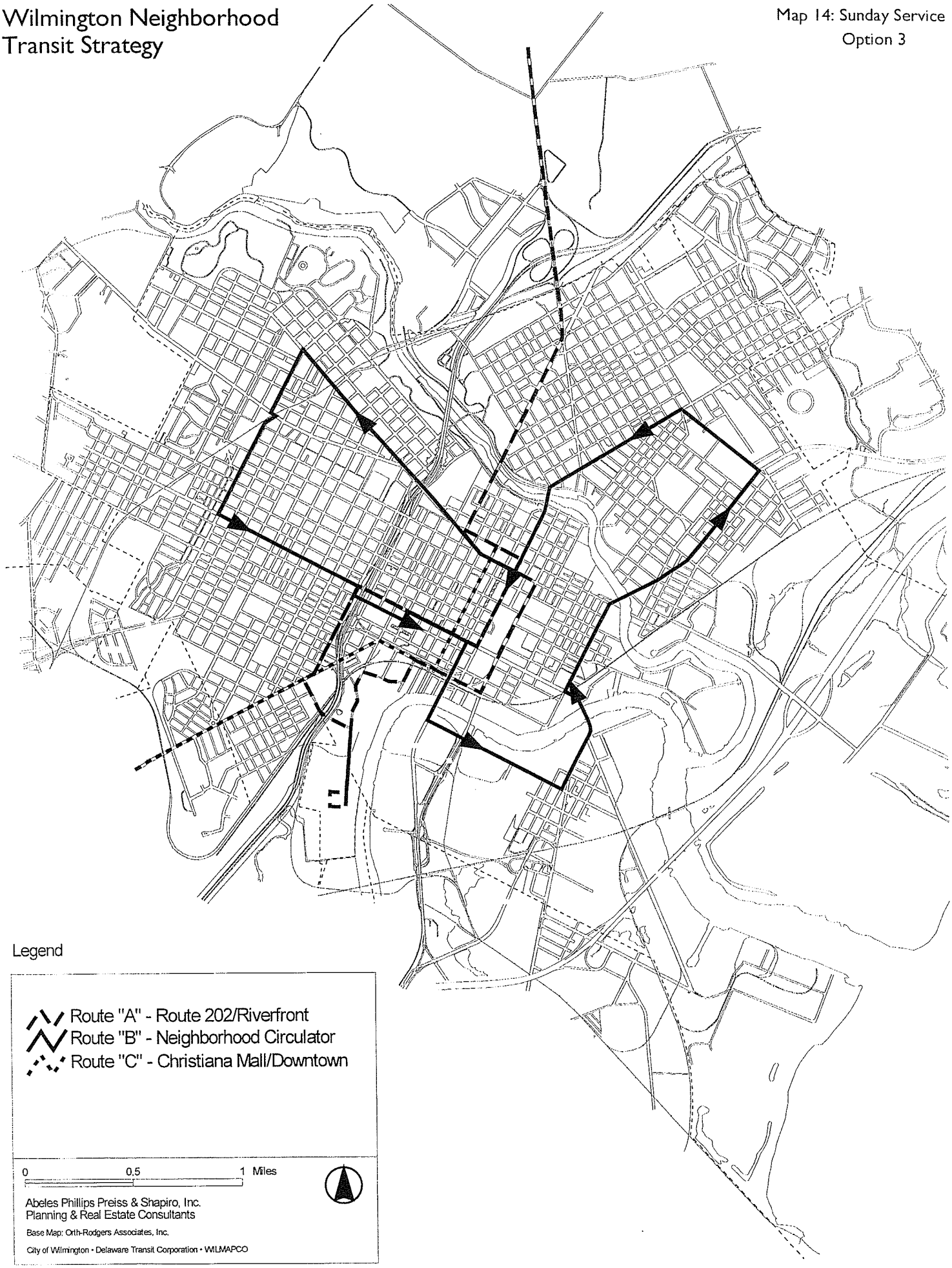
Wilmington Neighborhood Transit Strategy

Map 14: Sunday Service
Option 3



Legend

Route "A" - Route 202/Riverfront
Route "B" - Neighborhood Circulator
Route "C" - Christiana Mall/Downtown

0 0.5 1 Miles

Abeles Phillips Preiss & Shapiro, Inc.
Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

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- **Option 1: Single Fixed Route**

  The single fixed route option attempts to connect the major sources of transit demand with the major destinations. The resulting route is necessarily circuitous, and it does not include some areas such as Trolley Square. The route originates on Union Street and West 4th. It proceeds through Browntown to the riverfront, then through the downtown and up Northeast Boulevard. The route then cuts down 30th Street to North Market Street, before continuing up Concord Pike to the shopping malls on Route 202.

  This route has the advantage of serving several areas with low incomes and low rates of auto ownership, including the West 4th Street corridor, the Eastside, Northeast Boulevard, and North Market Street. It also services several in-town commercial areas, including Union Street, the riverfront, downtown, and North Market Street. However, it has several disadvantages. It does not serve Trolley Square. It serves the Adams Four shopping center in one direction only. West Center City residents bound for the Concord Mall must either walk to Rodney Square or must take the bus from 4th Street and circulate through the riverfront and the rest of the route before exiting Wilmington.

  It would be possible to reconfigure the route to include Trolley Square. However, this would make a circuitous route even longer. An individual boarding a bus at Trolley Square for the Concord Mall would not want to spend the better part of the next hour circulating around Wilmington before even leaving the city limits.

- **Option 2: Route 202 Connector plus In-Town Circulator**

  In order to provide adequate coverage in Wilmington without creating an excessively complicated bus route, it is recommended that the Sunday service actually be split into two services. The first service would be a relatively simple fixed route connecting the riverfront at one end with the Concord Mall at the other end. It would also serve downtown and Christiana Hospital as an intermediate destination.

  This transit spine would be fed by an in-town circulator service that would traverse each of the targeted neighborhoods as part of a large loop. This loop would take in Trolley Square/Delaware Avenue, Union Street, West 4th, Adams Four, 17th Street in Southbridge, Church Street on the Eastside, Northeast Boulevard, 30th Street, North Market Street, and Rodney Square. There would be three main transfer points between this route and the Concord Pike route: Rodney Square, the train station area on Martin Luther King, and the Adams Four shopping center.

  Since the service will be contracted out, a variety of vehicle and frequency options are possible. Without the benefit of ridership projections, it is recommended that the

circulator run at relatively frequent intervals of 30 minutes, to encourage casual use. The entire loop should take around one hour or less to traverse based a ten-mile loop and a ten mile-per-hour or greater vehicle speed; therefore, two or three vehicles would provide adequate service, accounting for a 5 to 10 minute layover time. Smaller shuttle vans would be a good choice, as they would be less disruptive to the neighborhoods served, and would not feel as empty as large buses if ridership is low. For the Concord Pike connector, a full-size bus is recommended, both because of the longer distance of the route, as well as to accommodate potentially many riders. Hourly headways would be reasonable, but a forced transfer point with every other circulator at Rodney Square is strongly recommended.

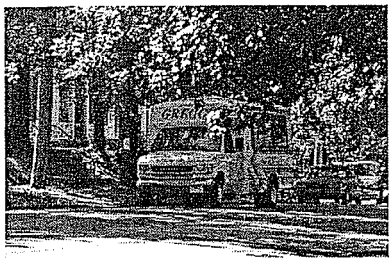
- **Option 3: Option 2 plus Christiana Mall**
  This service proposal is identical to Option 2, but includes a third route connecting downtown at Rodney Square with the Christiana Mall and neighboring destinations. This bus could run down I-95 as an express service, but should more likely run on SR4, thereby providing increased service to Browntown and Hedgeville, as well as residential areas outside of Wilmington adjacent to SR4. This bus might take in the Shipyard Shops on its return journey, increasing access to that destination for people who live outside of Wilmington.

- **Explore the option of addressing access to Sunday church services with a subscription-style shuttle bus service similar to the Night Owl.** (The Night Owl is described under Night Service.) Although the loops proposed as parts of Options 2 and 3 would address some churches, they would not address many or most. As noted, the origins and destinations are too diverse to service with a fixed route system. Fortunately, the demand for this type of service occurs at regular and predictable times.

  For the subscription service, riders would submit in advance their pick up location and church destination, along with the time they need to arrive. The fare would be paid by a combination of the individual riders and by the churches, with the shortfall made up by the City and possibly DTC. One difference from the Night Owl service is that for each rider, the arrival rather than the departure time is fixed. Therefore, because of the difficulty in ride planning, each rider would likely have a half-hour or more "window" in which they would have to wait at the designated pick-up spot. There would also be a half-hour or greater period for the shuttles to discharge their passengers at their destinations.

Night Service

Currently, no DART buses leave Rodney Square later 11:13 PM on a weeknight or 8:09 on a Saturday. Of the 27 bus lines serving Wilmington, 13 provide service from Rodney Square after 10 PM, 4 provide service between 7 PM and 10 PM, and 10 stop running before 7 PM. On Saturdays, almost all buses that run on Saturday make their final departure from Rodney



Demand-responsive services can accomodate off-hour work schedules and scattered destinations such as churches.

Square at 7:30 PM, although the Route 2 departs at 6:30 PM.

The only later service is provided via DTC's new experimental Night Owl service. This is a subscription service specifically aimed at employees working later shifts. It provides rides between any home location and any work location within the city limits of Wilmington. The fare is $3.00, but is reduced to $2.00 if the employer contributes to the service, and $1.00 if the patron is a Welfare-to-Work client. The service runs seven days a week until approximately 1:30 AM—it is not an all-night service. The Night Owl also provides late night service on Monday through Saturday and all day service on Sunday.

Interested riders subscribe with their employers through the Transportation Management Association (TMA). Subscribers must file a ride plan when signing up for the service, giving their origin, destination, the time of day and the days they need the ride. This allows DTC to create a custom routing for the van in advance, in order to most efficiently handle all the requested rides. While this system greatly improves routing, it does not allow for last minute deviations from the schedule, such as being asked to work late.

Marketing for the service is mainly done via outreach to employers, rather than end users. This is likely because the system is viewed primarily as a Welfare-to-Work program. Thus far, the service has received favorable reviews from its clients. However, there would be great value in making the existence of the service more widely known. In the neighborhood workshops, not one person was aware of the availability of the service. People seeking employment should be aware of the existence of this type of service even before they get a job—this knowledge might allow them to broaden their job search. Wider knowledge of the service would also help broaden its ridership base, helping to support future expansion.

While the Night Owl service is an appropriate means of extending bus service to later hours, it does not address non-work destinations, nor does it address locations outside of Wilmington (in its current configuration). As noted, around half of the buses serving Wilmington stop running relatively early in the evening. Most buses that run later have their final run from Rodney Square at 10:35. While this is reasonably late for a smaller city such as Wilmington, it is recommended that those routes that attract riders at that time of night be extended such that the last bus leaves at 11 PM or later. Pushing the service a half-hour later will psychologically reinforce the notion that the bus service is available later at night, as 11 PM is a more resonant time than 10:30.

Certain routes such that stop earlier should have late night service added. For example, the Route 10 bus, which serves Trolley Square, has its last run at 7:58 PM. One routing proposal discussed later is to split the in-town and suburban legs of the Route 10 service into two different routes. A complementary action would be to extend the hours of operation of the late night route. Later service would allow downtown workers who live in Rodney Square to either

work later, or to access downtown restaurants and entertainment venues after work, while still having a transit ride home. This added flexibility would increase the viability of the bus service as a commuting mode for residents of Wilmington's densest, most mixed-use neighborhood.

Recommendations

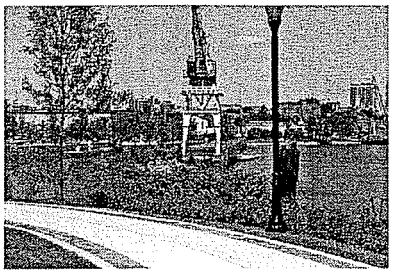
- **Continue to promote and expand the Night Owl service.** The Night Owl service is an important initiative to provide transit service to second and third shift workers, as well as Sunday workers, who do not have access to an automobile. If the current service proves successful, DTC may consider expanding the area to include parts of New Castle County. Given the important role of the service in assisting with Welfare to Work efforts, and the large number of jobs in suburban locations, any expansion of the service deserves strong support.

- **Market the Night Owl service directly to riders as well as to employers.** This would inform Welfare to Work clients who have not yet found employment that this service exists. It would also help attract non-Welfare to Work clients to the service. Finally, more members of the general public should be aware of DTC's efforts to address these types of critical service needs.

- **Extend existing night service on routes that have it until 11 PM or later.** This modest change, adding an extra 30 minutes of service from Rodney Square, will help the service take in more night workers, as well as discretionary riders dining or attending events downtown.

- **On a trail basis, extend service on the in-town Route 10 bus until 10:30 or 11 PM.** This will test the market for discretionary riders at this time of the night. The Route 10 is an appropriate choice, as it serves a relatively prosperous area that is also the densest neighborhood in Wilmington, and the most transit and walking friendly. Due to the shortness of the route, only a single bus would be needed.

- **Extend the City Circuit service to at least 9:30 PM six days a week.** Currently, the City Circuit stops running at 7 PM on weekdays and 7:30 PM on Saturdays. This does not correspond to the hours at the Shipyard Shops, nor does it match with the peak business hours for uses such as Kahunaville. Extending the hours of service will make it more feasible for downtown workers and neighborhood residents to access the riverfront via transit, knowing that they won't be stranded if they stay for dinner. Extending the service to 9:30 will also allow mall employees to ride this bus home from work. Recognizing that the City Circuit is used not only by riverfront shoppers and diners, but also by remote parkers who work downtown, the later hours will allow these workers to stay downtown longer and still get back to their cars.



Enhanced transit access for the riverfront will benefit both neighborhoods and riverfront developments.

7.2 Suggested Route Changes

By and large, the existing route structure provides excellent coverage for Wilmington's neighborhoods. Nearly every household is within 1,000 feet of a bus stop. However, as the historical overview of the transit service showed, there has been considerable inertia in the route structure. To some degree this is appropriate, as the actual physical structure of Wilmington has not dramatically changed for some time. However, the routes are out of sync with many new developments, including the Shipyard Shops and other riverfront development, and the development of outlying shopping destinations such as Trolley Square. Therefore, some route modifications are proposed to accomplish the following goals:

- Increase the level of service and connectivity for Wilmington's neighborhoods.
- Reinforce secondary commercial areas such as Union Street and Adams Four.
- Increase the level of service to and from the Shipyard Shops.

While these routes have been mapped, more detailed investigations are needed to assess the feasibility and viability of each route. Moreover, these modifications should be vetted with the appropriate parties, including Neighborhood Planning Councils, the Riverfront Development Corporation, Wilmington Renaissance, the City, and others, as well as DTC.

Recommendations

(Each of these recommendations is shown on *Maps 15 - 18*).

- **Extend the Route 1 bus route to include the riverfront.** Route 1 has the highest ridership of any route in the system. After this bus enters downtown, it should run a loop to and from the Shipyard Shops, similar to the City Circuit. This will allow residents of North Wilmington, as well as suburban residents to the north, to access the riverfront without making a transfer. It will also increase the level of service generally to and from the Riverfront. This route modification should be reconsidered once the trolley is in operation.

- **Reroute the off-peak, inbound Route 5 bus down Beech Street and through the riverfront.** This bus approaches Wilmington on Maryland Avenue. Once north of Beech Street, it serves relatively few residences. Therefore, it is recommended that the inbound leg of this route loop through the riverfront before proceeding to downtown. This will provide better access to the riverfront for Browntown residents, as well as residents of Elsmere and other communities to the southwest. Since the riverfront is not an early morning destination, however, it is recommended that the bus route be kept as is during the AM peak commuting period, switching over between 10 and 11 AM. The change should be in effect all day on Saturday. The outbound service would be unaffected by this change.

- **Reroute the in-bound Route 4 bus through the middle of the Adams Four shopping**

center. In fact, this bus once made this detour. The Adams Four shopping center is one of the few shopping centers with a supermarket serving inner city neighborhoods. However, the center suffers from a poor design that gives the stores very poor visibility. Running a bus through the middle of the center will provide a higher level of convenience for shoppers; will provide increased visibility for stores; and the new stop will create the opportunity for contructing a new landscaped amenity in the currently bleak parking lot.

The City Circuit should connect all the downtown hotels with the riverfront and downtown attractions.

- **Reroute the northern part of the City Circuit on to Delaware Avenue, up West and/or Washington Streets, and back on 13th Street.** This minor change will allow the City Circuit to more directly address the full extent of the office district, the downtown hotels, and the Christiana Care hospital and surgical center. The rerouting should be coupled with increased marketing of the City Circuit to hotel guests, as an easy means of getting to and from the riverfront. These marketing efforts will be bolstered by the new, later hours of operation recommended above.

- **Split Route 10 into an in-town portion and a suburban express portion.** This recommendation is also made in the state-wide transit study being undertaken by DTC. The suburban portion of the route will function better in limited-stop configuration, and the in-town portion will be more reliable without a suburban leg.

7.3 Improving Service Delivery

Beyond the system's hours of operation, other issues include frequency, speed, and customer service. Attendees at the neighborhood workshops were not just interested in Sunday service; they also had concerns over security, the courtesy of bus drivers towards the elderly and the handicapped, and the location of bus stops and shelters.

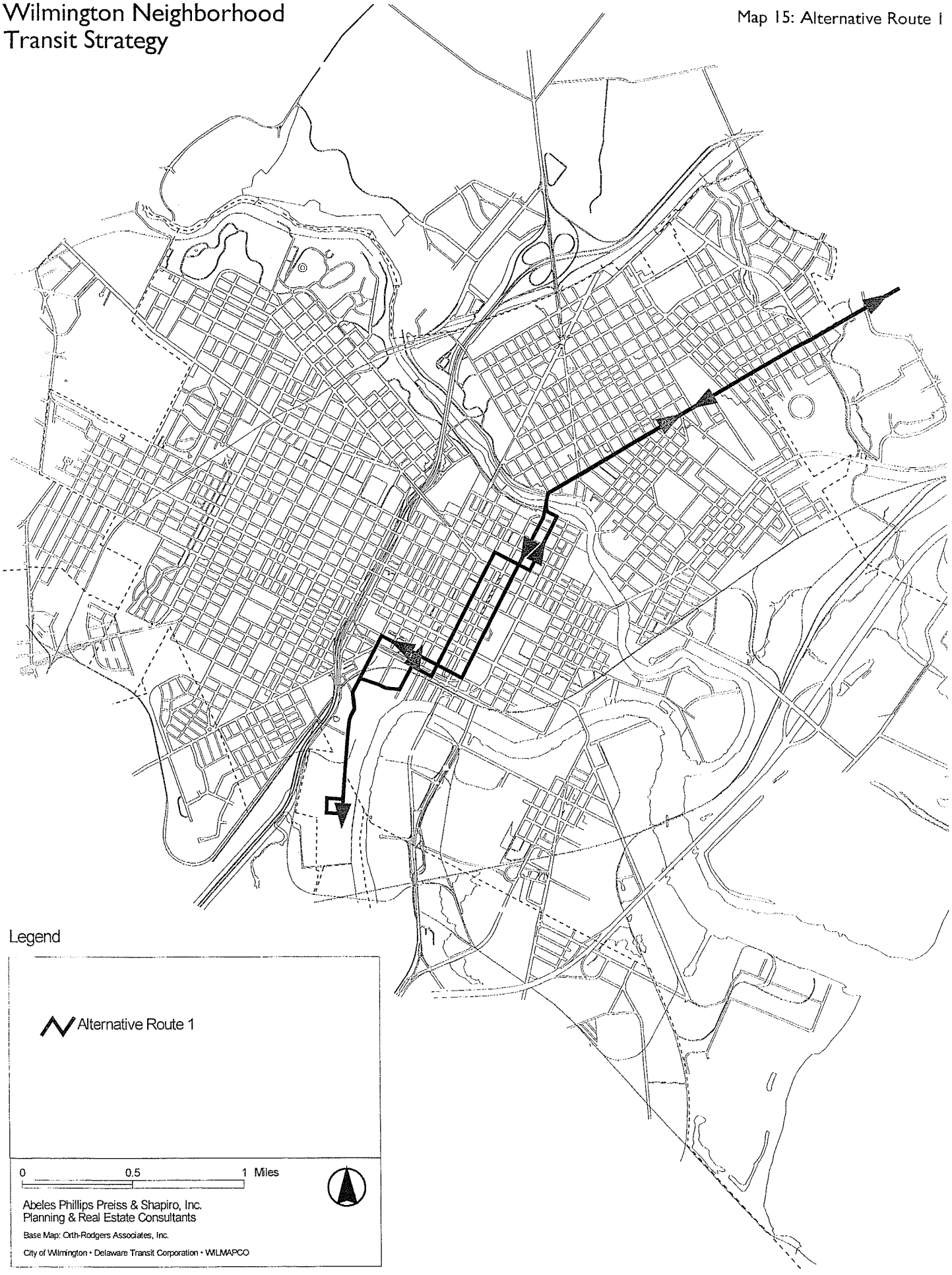
Frequency

The headways between buses are a key element influencing the convenience of the transit service. If headways are not frequent enough, riders may be faced with transit rides that get them to their destinations either too early or too late. If the rider misses the intended bus, she will be that much later for work if the next bus is 30 minutes or more away. Moreover, a 12-minute headway is often considered a magic number for transit service. If the maximum wait at a stop is no more than about 12 minutes, there is evidence that most riders will not feel the need to check a timetable before going to the stop. If headways are greater than 12 minutes, riders will typically check to see when the next bus is arriving before heading to the bus stop. Clearly, shorter headways encourage impulse (and more frequent) usage of the system, as opposed to planned (and less frequent) usage.

There are two strategies for decreasing headways. One is to simply run more buses during the peak periods. Each new bus will decrease the headway by a certain amount, based on the num-

Wilmington Neighborhood Transit Strategy

Map 15: Alternative Route 1



Legend

Alternative Route 1

0 0.5 1 Miles

Abeles Phillips Preiss & Shapiro, Inc.
Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

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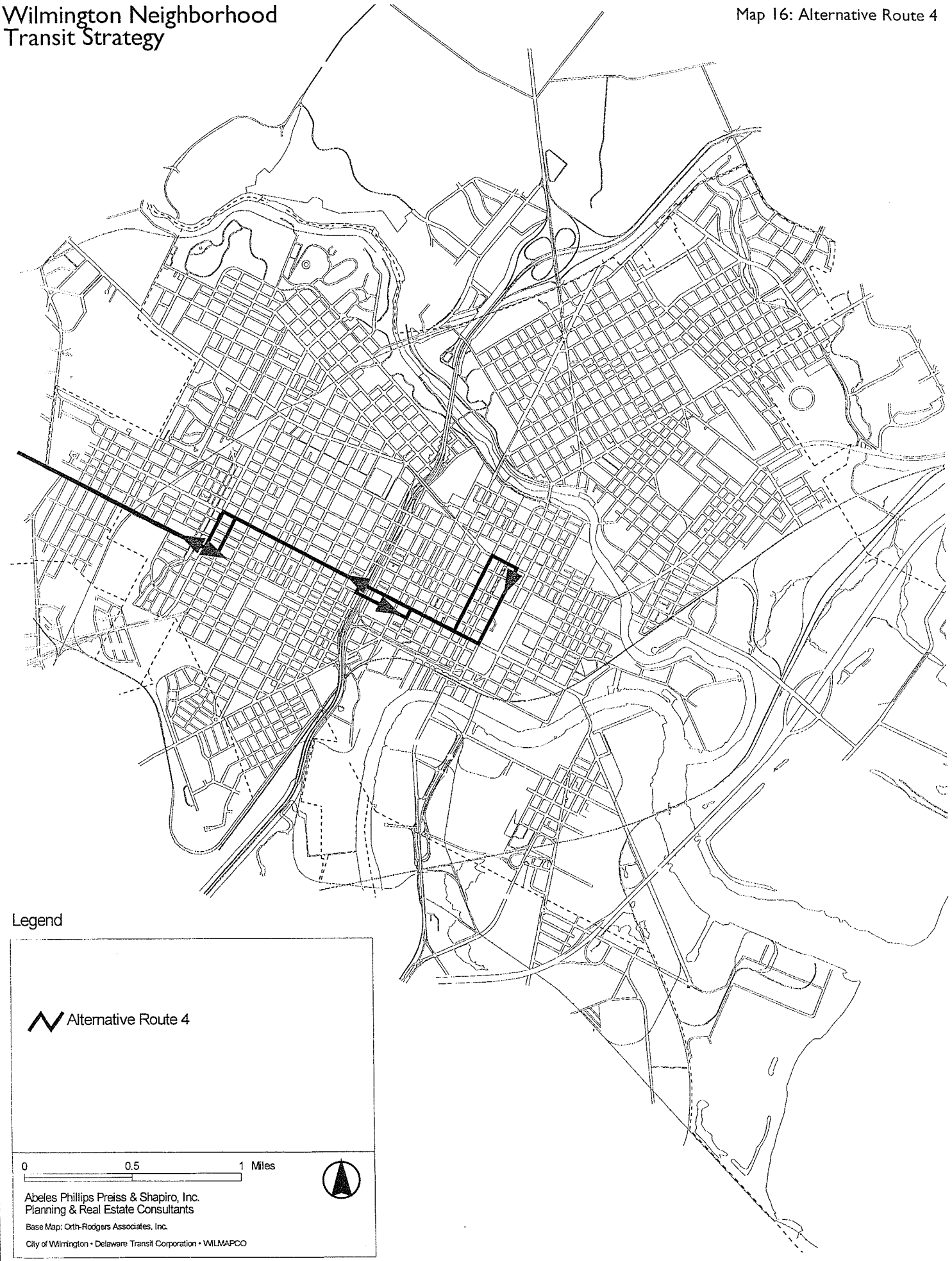
Wilmington Neighborhood Transit Strategy

Map 16: Alternative Route 4



Legend

Alternative Route 4

0 0.5 1 Miles

Abeles Phillips Preiss & Shapiro, Inc.
Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

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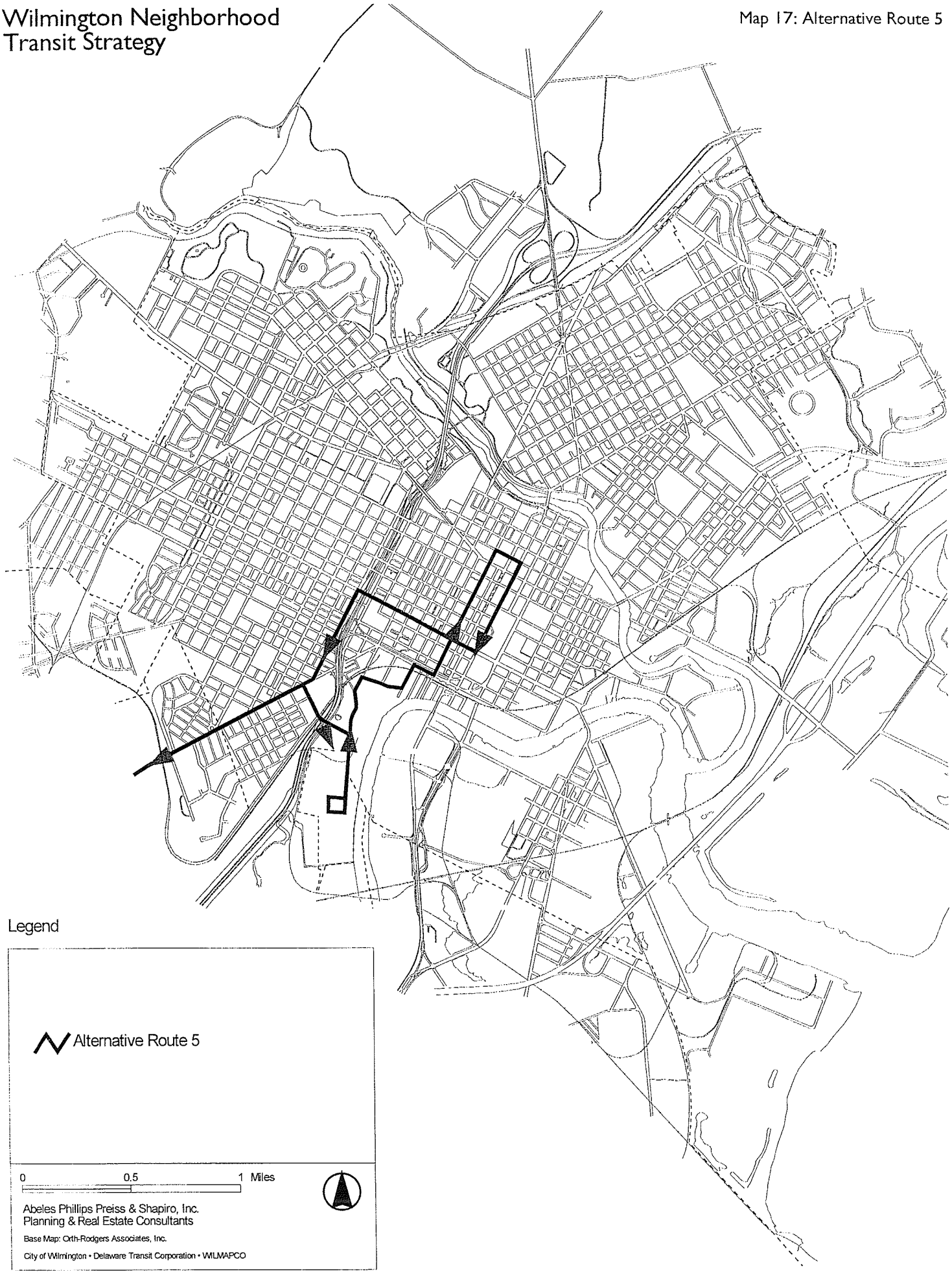
Wilmington Neighborhood Transit Strategy

Map 17: Alternative Route 5



Legend

Alternative Route 5

0 0.5 1 Miles

Abeles Phillips Preiss & Shapiro, Inc.
Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

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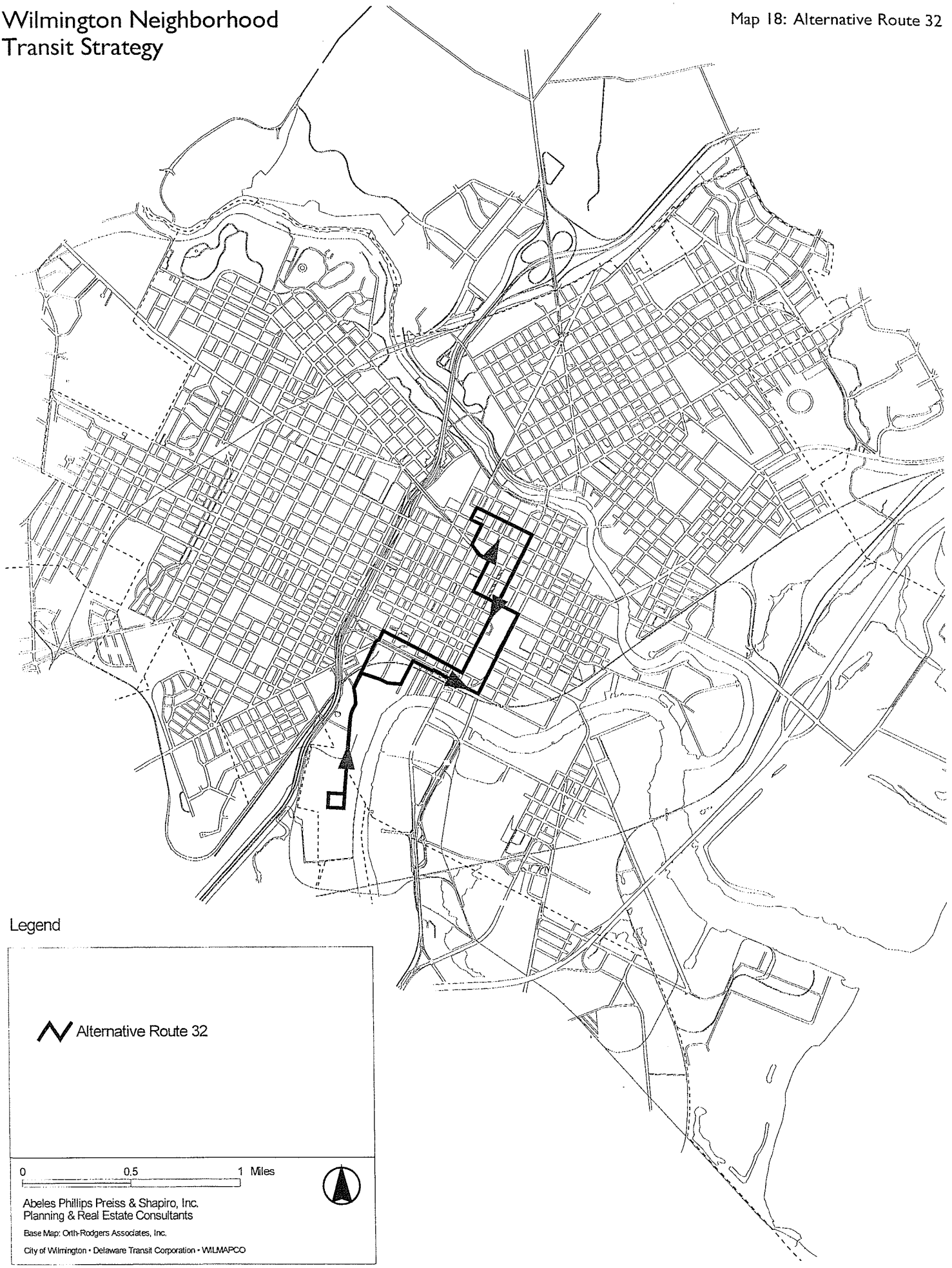
Wilmington Neighborhood Transit Strategy

Map 18: Alternative Route 32



Legend

Alternative Route 32

0 0.5 1 Miles

Abeles Phillips Preiss & Shapiro, Inc.
Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

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ber of buses on the route and the existing headways. For example, a ten-mile loop with two buses might have 30-minute headways. A third bus would reduce the headways to 20 minutes, and a fourth bus would reduce the headway to 15 minutes. As more buses are added to the route there are diminishing returns associated with each extra bus, with the biggest drop in headway occurring with the addition of the first bus.

Overcrowding on buses is a sign that more buses covering the route may be needed. Serving the route with more buses, thus decreasing headways, can best relieve overcrowded conditions. Currently, DTC does not collect information detailed enough to quantitatively assess the level of crowding on buses during the peak periods. At the community meetings overcrowding was reported for both the Route 1 and 4 buses during the AM and PM peak periods. In lieu of detailed quantitative data, the bus operators themselves can help provide ongoing feedback regarding bus crowding during peak usage periods.

Another strategy for reducing headways does not involve running additional buses, but instead consolidating multiple bus routes along key corridors. An example is the downtown. Since a great number of buses stop in front of the train station and at Rodney Square, it is possible to take a bus from the train station up the hill during the day without ever waiting more than a few minutes. The trade-off is in coverage. If routes are consolidated, that riders will typically have a longer walk to a stop, although they will have a shorter wait at the stop. Finally, consolidating routes will increase boardings at the stops, helping justify a higher level of amenities at those stops, including shelters and benches.

A final strategy for reducing headways is to "turn back" buses before they reach the end of their run. For example, during the AM peak the Route 20 bus might turn back towards Wilmington at Centerville Road instead of running all the way to Hockessin. This serves to increase service in the most populated areas, but provides less service in outlying areas.

Recommendations

- **Create a formal procedure to evaluate crowding conditions on buses.** This should include not only better quantitative data, but also regular reports from bus drivers regarding conditions on their route.

- **Consider making West 4th Street more of a transit corridor, with more buses entering and exiting on West 4th between downtown and Union Street.** Keeping in mind the trade-offs involved, placing one more route on 4th Street would improve service in this transit-dependent corridor, while also better connecting Little Italy with the downtown. Longer term, consider reconfiguring West 4th physically as a better transit corridor. Possible improvements include converting the outer lanes to bus priority; bumping out the transit stops so that buses do not need to pull out of the priority lane (if street topology does not permit, this can be accomplished with paint); and improving the quality of the

transit stops and facilities.

- **Add buses on routes experiencing crowded peak-period conditions.** These probably include the numbers 1 and 4. Alternatively, crowding might be addressed via turn backs. Detailed boarding information is needed to make this decision, however. The state-wide plan is also looking at adding buses to these routes.

- **Experiment with more frequent service on the Route 10, as part of the recommended splitting of the route into in-town and suburban service.** This will help test the hypothesis that more discretionary riders can be attracted with higher levels of service.

Facilities and Amenities

For riders, the transit trip begins at the moment when they arrive at the stop to wait for the bus. The level of amenity provided at the stop will greatly influence the rider's perception of service quality. Moreover, the quality of signage and information provided at stops will determine the visibility and legibility of the service. The following are some of the equipment and amenities typically found at transit stops, in approximate order of increasing expense:

A lack of transit stop amenities can discourage ridership.

- A sign marking the transit stop.
- Route information on the sign.
- A route map.
- Up-to-date schedule information.
- A clearly demarcated waiting area.
- Trash receptacles.
- Benches.
- An emergency phone.
- An unlighted shelter.
- A lighted shelter.

DTC issued a detailed policy in March of 2000 governing the location and design of bus stops, and setting thresholds for different levels of amenity based on average daily boardings at each stop. There are three hierarchies of stops that DTC strives to provide:

- Stops with a paved waiting area.
- Stops with benches.
- Stops with shelters.

DTC's policy is that every stop should provide a paved waiting area. Benches and shelters are to be provided for stops that meet usage thresholds. There are three different thresholds based on whether an area is rated as having a high, moderate, or low transit density. Most of Wilmington qualifies as having a high transit density, because population densities are high-

er than 3,000 people per square mile. The thresholds for benches and shelters are given in Table 2.

Table 2: Thresholds for Bus Stop Amenities

	High Transit Density	*Moderate Transit Density*
Benches	20 avg. daily boardings	10 avg. daily boardings
Shelters	40 avg. daily boardings	20 avg. daily boardings

Source: DTC, Bus Stop and Passenger Facilities Policy, 2000.

For the last two years, DTC has not been collecting the detailed boarding information necessary to apply these standards. Collecting this data should be a priority.

There are other factors governing the location of shelters and benches, including the presence of elderly transit users near the stop. It is also the policy of DTC to locate stops in close proximity to concentrations of elderly residents, such as senior housing towers.

Major stops are defined as those which have benches and shelters, or other stops in high-traffic locations. DTC's policy is to provide information boards at major stops depicting routes and schedules for all routes that serve the stop.

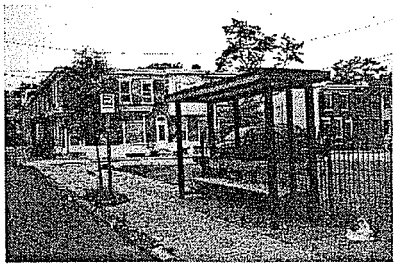
Stops are to be spaced around 750 feet apart in areas of high transit density, which covers most of Wilmington. This corresponds to around three city blocks. "Flag stops"—stops that result from someone flagging down the bus or requesting a stop from the driver—are not allowed for either pick-ups or discharges. Note that the fewer the stops, the more likely that remaining stops will meet one of the average daily boarding thresholds listed above. As is discussed later, bus stop spacing in Wilmington is actually much shorter in many areas than 750 feet.

There are many other sections in DTC's guidelines detailing issues such as lighting in shelters, the provision of phones and trash receptacles, handicapped access, and other stop design issues. In sum, DTC's guidelines provide detailed, clear and logical criteria for stop design and outfitting. However, the newness of the policy, coupled with fiscal constraints, means that the actual facilities provided at present substantially deviate from the guidelines.

The facilities provided at Wilmington's 562 transit stops vary greatly depending on the location. The major transfer points—Rodney Square and the train station—have attractive and spacious areas to wait for the bus. These stops also have the most complete access to information about the transit system, although at the train station it is necessary to hunt around in the station building to find the information, and the existence of the information is not clearly posted at the stop itself. Only Rodney Square has a system map posted at the waiting area.

Other stops are severely lacking in rider information. Route maps and schedules are generally not posted on shelters. Most bus stop marker signs do have route numbers identifying which buses serve the stop, although some lack even this rudimentary information.

In Wilmington, 36 stops have shelter of some sort, or around 6 percent of the total number of stops. These are shown on *Map 19: Bus Shelter Locations.* Fourteen of those shelters are located in the downtown area, with the remainder located in the neighborhoods. Shelters are the most important amenity to a rider, because they provide a refuge from rain, snow and wind.



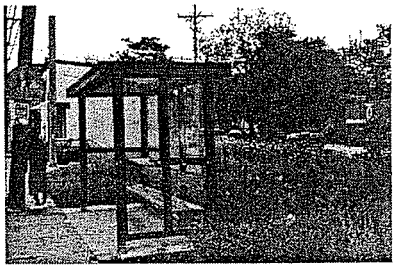
Shelters are an important amenity for transit stops.

Many stops do not provide appropriate waiting areas. One stop on the north end of Union Street has less than three feet of sidewalk width. Stops along Northeast Boulevard are often bleak and uninviting, and may be located in front of abandoned lots and buildings, adding to a feeling of low security.

Some stops provide little system information.

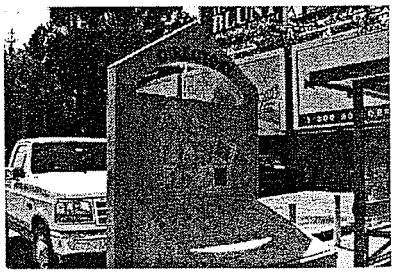
Until recently, little thought was given to the "place-making" potential of transit stops. The Wilmington Initiatives have placed new emphasis on beautifying streetscapes, and have set the stage for thinking about transit stops as places for civic-minded street furniture. The handsome transit structures at Rodney Square clearly add value and image to this central open space. In different ways, and at a smaller scale, transit stops can do the same for the neighborhoods. In fact, a few examples in Wilmington do exist:

- The inbound bus stop in Southbridge on New Castle Avenue, across from Henrietta Johnson Medical Center, is set amidst an attractive flower garden on a small triangle of land, and is adjacent to an historical marker providing information regarding the history of the area and its African American heritage. The stop already serves as a community focal point—a nicer shelter, better landscaping and a community art project would make it even more so.



This Southbridge stop could be reinforced as a focal point.

- The inbound bus stop in Trolley Square at DuPont and Delaware provides a map of the surrounding area keyed to a directory of area merchants, much like the maps and directories provided at enclosed shopping malls. Other commercial areas such as Union Street would benefit from such a kiosk, which, if located in an area of pedestrian traffic, would be observed by passersby as well as transit riders.



Merchant information is provided at the transit stop in Trolley Square.

There are other ways to maximize the place-making attributes of transit stops, including the following:

- Sponsor community art projects at key transit stops.
- Create transit facilities that respond to the neighborhood heritage, such as shelter with Roman columns for a central stop in Little Italy. Local merchants might help pay for this amenity, with a matching grant from DTC.

Wilmington Neighborhood Transit Strategy

Map 19: Bus Shelter Locations

Legend

Bus Shelter Location

0 0.5 1 Miles

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Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

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- Consider an "Adopt a Stop" program to get community residents involved in the stop's landscaping and upkeep, recognizing however that community interest in such projects tends to wane over time.

Finally, the transit stops should also reinforce the image of DTC and the DART system. The current signs blend in too much with their surroundings. DTC should commission the design of an eye-catching logo—such as the cat paw that represents Orlando's LYNX system—and post it at every bus stop sign. Assuming that the trolley goes forward, it might provide a suitable logo, since it would serve as the main trunk of the transit network.

Recommendations

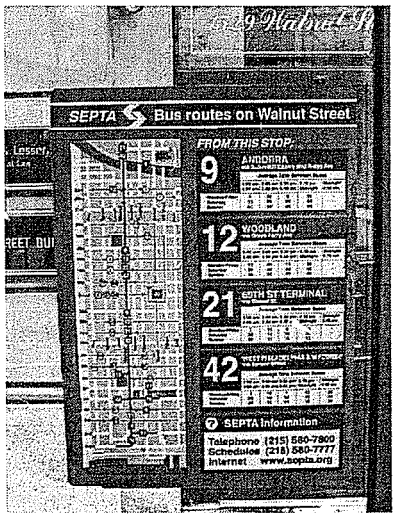
- **Reduce the number of stops in Wilmington.** Currently, the bus stops at almost every block. As a result, Wilmington's buses make slow progress through the City. The Route 8, for example, averages just over 9 miles per hour. Consolidating the stops will help justify a higher level of amenity at remaining stops, by boosting ridership. It will also help minimize bus and vehicular conflicts. The location of the consolidated stops should be coordinated with senior housing facilities, key commercial nodes, neighborhood amenities, and other considerations.

- **To mitigate the loss of stops, implement a request-a-stop policy during off peak hours.** This courtesy will be of the most value to the elderly and the handicapped. Such a policy is already in place for New York City Transit Authority buses, which will allow requested stops anywhere along their prescribed route during the evening and late night hours. This not only increases convenience, it can also help increase public safety by placing riders closer to their doors.

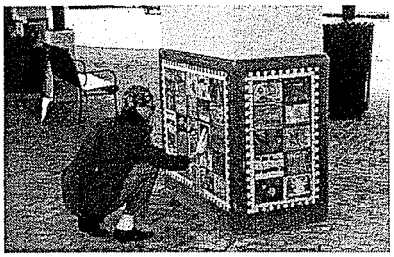
- **Provide increased information, including route maps and timetables, at every major bus stop.** Over time, expand this information to include all, or at least the majority of, transit stops. Fortunately, DTC's route brochures already have the necessary maps and timetables nicely formatted. All that it is necessary is to adjust the formatting for display on a pole or bus shelter.

- **Provide full system information at the train station bus waiting area.** Also provide better signage pointing travelers to the waiting area (a la an airport's "Ground Transportation" sign). Make it clear to passengers arriving by train that there are 11 bus lines that can take them to Rodney Square and intermediate destinations.

- **Provide stops with benches and shelters at every senior residence, on both sides of the street.** To a large extent, this has already been accomplished. However, there are a few exceptions, especially where senior housing does not front directly on a bus route. In these cases, the shelters and benches should be provided at the nearest bus stops to the housing.



Route maps and timetables should be provided at major stops.



Art is a cost-effective means of enhancing the transit system.

Outdoor advertising offers a trade-off: free shelters, but with commercialization of public amenities.

- **Supplementing the policy of putting shelters at points of greatest demand, implement a policy of providing attractive shelters at key commercial nodes, and providing attractive shelters at neighborhood focal points.** DTC should work with neighborhood planning councils to identify key neighborhoods nodes that would be appropriate for a signature stop. DTC, the council and the City could sponsor neighborhood projects (such as artwork by local artists or children) at key stations in each neighborhood. DTC could also name the stop after the neighborhood or locale in which it is located. If appropriate, DTC should provide (or encourage others to provide) a directory and map of neighborhood merchants and attractions at the stop (a la Trolley Square). Little Italy's restaurant row is one area where this strategy would be effective.

- **Partner with adjacent merchants to provide better amenities at bus stops.** These might include landscaping improvements that benefit the stop and the business, such as flower pots. Or they might not include other moderate-cost improvements, such as seating or benches that the merchant might place at the stop either permanently, or during business hours. These improvements could be funded through matching grants.

- **Create and implement an "Arts for Transit" program to help dress-up and beautify transit stops throughout the city.** Adding art to transit stops has proven to be one of the best, and most cost-effective, ways to enhance the image of the transit system and make it more "fun" to use. Better yet, art projects can transform bus stops even in the bleakest of environments—for example, art should be targeted for areas such as Northeast Boulevard, where in the near term substantial revitalization is unlikely.

- **Partner with community groups to create an "Adopt a Stop" program.** Involving community residents with the landscaping, beautification and upkeep of transit stops can be a wonderful tool for outreach and for creating a sense of ownership over these facilities. Since the enthusiasm for these types of projects tends to wane over time, realistic measures should also be put in place for the City or DTC to take over some of the maintenance functions of these neighborhood amenities; and community groups should be prepared for the need to involve new people in these projects as the original participants lose interest.

- **Consider contracting with an outdoor advertising agency to provide more bus shelters.** While foisting more advertising on the public, this strategy would provide a much greater number of shelters without at no cost to DTC. These shelters should be confined to the commercial and traffic corridors in the city, including Northeast Boulevard, North Market, Concord Pike, Maryland Avenue, 2nd and 4th Streets, Lancaster Boulevard, etc. To address community concerns, advertising on these shelters should restrict certain categories, such as liquor and cigarette ads; they should be well lighted; and they should not be prone to vandalism. Programs such as this have been successfully implemented in

Philadelphia and New York City.

It should be stressed that the decision to use outdoor advertising to underwrite transit shelters is a local decision that the City and affected communities must make. It may also require modifications to the City's zoning code. Currently, billboard advertising is not permitted in the C-4 commercial district covering much of downtown, and there have been discussions about banning billboards from the C-3 district as well. An exception would have to be made for advertising on transit shelters. In a related matter, the City is also currently debating whether to allow advertising on newsstands downtown.

- **More clearly delineate bus stops and waiting areas, even in the absence of benches or shelters.** As noted earlier, one strategy is to create a splashier DART sign to affix to each stop, like the LYNX system in Orlando. Another low cost strategy would be to define stops and waiting areas using colored paint and striping on the sidewalk and street bed. Such treatments should be confined to areas where they will not impact community character.

Customer Service and Safety

Those neighborhood workshops held in the meeting facilities of senior residences had high levels of senior participation. Across these meetings, the same concerns were raised—that bus drivers in Wilmington are too often disposed to view seniors and the disabled as inconveniences interfering with their schedule, rather than as valued customers. This likely applies to only a few bus drivers, and in fact it was pointed out that most drivers are quite courteous. Yet, the complaint was voiced too many times to be ignored.

Official DTC policy is to replace its aging vehicles with buses that kneel, and today all, or almost all, of the fleet has this capability. However, it was reported that some drivers are reluctant to kneel the bus for seniors and the disabled, even when the bus has this functionality. Moreover, others reportedly lacked facility in operating the wheel chair securements. Finally, although the front seats of the bus are to be reserved for seniors and the disabled, sometimes this rule is not enforced, with the result that seniors must struggle to the back of the bus, or stand.

There are also issues of tolerance. As a diverse city, home to many ethnic and racial groups, accommodating of this diversity is clearly an important function of the transit system. Once again, while most drivers are courteous, some have reportedly lacked sensitivity, and others have reportedly engaged in a form of "profiling" when deciding whether to pick up a passenger waiting at a stop.

However, courtesy is also a two-way street. Bus drivers are public servants and professionals entrusted with the lives and safety of hundreds of individuals each day. The passengers should

treat the drivers with the same respect they would expect to receive. Moreover, passengers must be respectful of the rights of the people with whom they share the bus, by observing the rules and not behaving in a disruptive manner.

Finally, safety is a key concern for both riders and drivers. At the neighborhood meetings, it was urged that DTC continue its pilot program of installing cameras in buses to record illegal activity. This should help improve security for both drivers and passengers. DTC buses should also be equipped with "panic buttons" that contact the police and central headquarters, and can relay information about the location, speed and direction of the bus. Drivers should also be trained in how to deal with criminal activity on their bus.

Recommendations

- **Institute a dedicated hot line for complaints that includes procedures for follow-up.** While DTC does provide a forum for complaints, the same phone number is used for general information, paratransit reservations, and complaints. Given their different natures, it makes sense to separate at least the phone numbers for these services, if not the services themselves. Moreover, following up on complaints with call-backs or letters will make it clear that DTC takes public input seriously and acts upon it when appropriate.

- **Partner with a program such as the American Public Transportation Association's Transit Ambassador program to provide enhanced sensitivity and security training for drivers.** This program, through a series of workshops, walks drivers through a variety of different situations and conflicts that may occur on a bus. This type of training gives drivers the tools they need to effectively manage the wide variety of situations they are likely to encounter on the job, situations which will often require on-the-spot decisions and judgment calls.

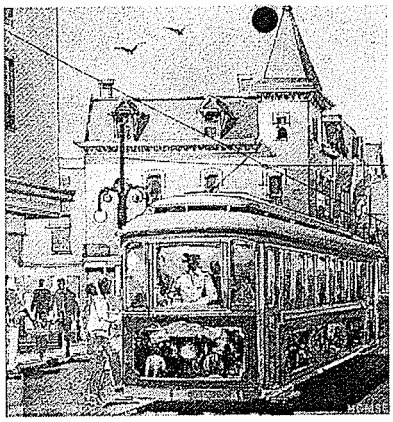
- **Ensure that all drivers are well-trained in the use of the wheelchair securements.** This is a basic function that every driver should be able to perform quickly and efficiently.

- **Launch a public relations campaign aimed at passengers to promote courtesy.** This can take the form of on-board advertising, as well as a clearly posted sign in each bus outlining do's and don'ts for transit riders. Through the Transit Ambassador program (or a program like it) drivers can also learn to take a more active role in enforcing rules, such as asking riders to give up the front seats for seniors and the disabled.

- **Continue efforts to increase security through the use of cameras and emergency call systems.** Security cameras can have a big impact on bus security, and their more widespread adoption should be supported. DTC is also working on its emergency call system "panic button" that drivers can operate in case of a criminal incident on a bus (such as

someone pulling a knife or firearm). This system currently alerts police and central headquarters, but in the future will also provide the police with more exact information as to bus location, direction and speed, enabling faster response times.

8 Long-Term Transit Strategies



The Market Street Trolley is the most dramatic addition planned for the transit system.

The bulk of the transit strategies contained in this report can be implemented in the short term of 1 to 3 years. Some actions could be taken even sooner. These strategies are accordingly incremental, rather than revolutionary, in nature. Yet, there is also a need to look at the bolder, long-term actions that will guide transit in Wilmington into the future. This chapter discusses one long-term strategy that is already moving forward—the introduction of fixed-rail trolley service in downtown Wilmington—and several responses to this development, including neighborhood circulator shuttles, more substantial modifications to the bus network, and a new transit center at the train station.

8.1 The Market Street Trolley

The Market Street trolley is a bold transit investment that is expected to begin operation in a few years. This new rail system will call for a substantial rethinking and reconfiguration of existing transit services in Wilmington. Much has been written about the trolley to date, but the underlying concept is rather simple. Wilmington's long linear downtown and riverfront area is full of destinations, employment centers, and attractions that cannot function as a synergistic whole because they are stretched along a corridor that is too long to be walkable. A rail trolley will provide a physical link between all of these elements, and firmly tie the riverfront to the downtown, resulting in a whole that is greater than the sum of its parts. A fixed rail system is proposed in order to give this link the high profile and aura of permanence that a bus could not provide.

The preferred route for the trolley is shown on *Map 20: Market Street Trolley.* The route connects the Shipyard Shops on one end with the northern core of the downtown business district on the other. It also loops west to connect with the Christiana Care hospital and the hotels and offices along Delaware Avenue. The trolley runs both directions on Market Street, providing increased access and visibility to Wilmington's historic downtown shopping street. While there will be a transfer point wherever a bus route intersects the trolley route, the major transfer nodes are planned for Rodney Square and the trolley's closest approach to the train station.

Largely in response to the trolley, DTC has proposed to construct a new transit center on a portion of the parking lot adjacent to the train station. This new facility would replace the existing secondary transfer hub in front of the train station, and would become as an important a transfer node as Rodney Square. A two hub strategy is appropriate, since Wilmington in essence has two central business districts—one centered on Rodney Square in the north end, the other centered around the train station and the FirstUSA buildings in the south end.

There are several other long-term transit plans that impact the need for, and function of, a trolley. A ferry connection between Wilmington, New Castle, and the New Jersey towns of Penns Grove and Salem has been proposed. A logical landing for this ferry would be the bank of the Christina River near the train station. The Delmarva Rail Passenger Association has developed

Wilmington Neighborhood Transit Strategy

Map 20: Market Street Trolley Preferred Alignment

Legend

Market Street Trolley Preferred Alignment

Existing Routes

0 0.5 1 Miles

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Planning & Real Estate Consultants

Base Map: Orth-Rodgers Associates, Inc.

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a suggested 10-year Passenger Rail Plan that calls for light rail running from Wilmington to Bear to Newark. State rail service stretching as far south as Rehoboth would be a later addition. Finally, DTC has as a long-term plan increases in rail service on Route R2 between Newark, Wilmington and Philadelphia.

Some of these proposals are more likely to be implemented than others. Yet, the end result of all of them will be more people arriving in Wilmington via the train station and its surroundings. Most of these arrivals will need to reach other destinations within the downtown, and therefore the need for fast, convenient and affordable north-south connections within the downtown will be stronger than ever. While a City Circuit or similar bus could fulfill this role in the short term, in the long term the trolley will provide a higher-quality north-south connection than could be provided with buses alone.

The Trolley and Existing Transit Service

The trolley primarily serves commercial and cultural destinations located in the downtown and on the riverfront. Although some new residential development is planned for the trolley route, it will not directly serve a large residential population, at least initially. Therefore, connections are needed between residential neighborhoods and the trolley for the trolley to improve mobility for significant number of Wilmington's residents. These connections can be provided by a combination of the existing bus network, and new routes specifically designed for this purpose. Because the first option is the easiest, it is worth looking at the relationship between the existing buses and the trolley in some detail.

Since the trolley is primarily a north-south connector, the bus system that feeds the trolley should naturally have a east-west orientation. To a large extent, this is already the case. The existing bus routes provide for east-west circulation along many downtown streets, including Martin Luther King, 2nd, 4th, 8th, 9th, 10th and 11th streets. All of these routes cross Market Street and/or Rodney Square, therefore providing transfer points with the trolley. During the week, when many buses are in operation, the existing bus network will provide good connectivity between the neighborhoods and the trolley.

On the weekends, however, fewer routes are in operation, and the buses typically run less frequently. Therefore, the neighborhoods will not enjoy a high level of connectivity with the trolley unless extra service of some sort is added. Since a fundamental concept behind the trolley is to attract leisure and discretionary riders with frequent service, extra service will be needed to extend this same benefit to the neighborhoods. A different type of service may also be needed to attract trolley riders onto buses linking other attractions, such as Union Street.

Moreover, the downtown loops that almost all buses currently follow will be largely redundant once the trolley begins operations. Already, there is excess capacity in the downtown—around 800 buses a day run along King Street, for example, and most of these runs have few riders.

To a large extent, these loops are required to address the need for commuters to reach both the northern and southern ends of the downtown business district. The trolley will not completely remove this need, and not all commuters will want to make an extra transfer to reach their destination. One solution to this problem is to through-route the buses, an option that will be discussed later.

The connection between the trolley and the train station needs particular attention. With Amtrak and SEPTA R2 service, the train station is already an important portal to the City, and it will become more important in the future. Yet, the trolley does not directly serve the train station—Market Street is two blocks away. Therefore, a physical link is needed between the trolley and the train station, so that people unfamiliar with Wilmington arriving by train can easily find their way from the train station to the trolley, and vice versa. This connection would ideally be weather proof, so that the connection works effectively in spite of rain, wind and snow.

Other Issues

Beyond the relationship of the trolley to the rest of the transit system, there are other issues to address. As has been noted, the trolley is conceived of as a tool for supporting economic development as much as for moving people. The economic development benefits will mostly register within the area directly served by the trolley route. However, to the extent that the trolley helps promote Wilmington as a tourist destination, there may be potential to spread additional spin-off to other areas that rely in part on visitor spending, such as the Little Italy restaurant row. To do this, however, will require a combination of marketing efforts and improved transit links.

The construction of the trolley can be expected to have an impact on the already uncertain fortunes of many Market Street merchants. In the long term, the trolley will greatly improve the prospects for retail and services along Market Street, but care must be taken that the construction period does not drive otherwise viable merchants out of business in the interim. For this reason, it will be important to work closely with the local merchants throughout the planning and construction period, to ensure that any negative impacts will be minimized. A model is the outreach that SEPTA undertook as part of the reconstruction of the Frankford Elevated Line several years ago, an effort that helped spark additional planning and renewal initiatives in the Frankford neighborhood.

Because of the economic development focus, the trolley needs to attract as many riders as possible for these benefits to be realized. Therefore, it is expected that the trolley will offer frequent service with a low fare, requiring it to be heavily subsidized. This will impact the operating budget of DTC, or whatever agency operates the trolley. From a transit perspective, this subsidy will be partly justified if the trolley can be used to increase total ridership on the entire transit system. Fortunately, there are at least four ways in which the

trolley might accomplish this goal:

- The high-profile, high-image nature of the trolley can be used as a marketing tool bolstering the image of the entire transit system.
- By attracting more tourists to the downtown area for weekend stays, the trolley will help provide support for enhanced weekend transit service, including Sunday service.
- Attracting discretionary riders, visitors and tourists to the trolley is a first step towards attracting these same riders to the DART system.
- The trolley is expected to spark and support additional development—office, retail and residential—in the downtown and on the riverfront. It will therefore increase the mass of transit supportive development in Wilmington.

Recommendations

- **Involve the downtown merchants, residents, and business community throughout the planning and construction phase, to help minimize the disruption caused by the trolley's construction.** While a major infrastructure project such as the trolley cannot be undertaken without some impact, by meeting regularly with the affected parties throughout the planning and construction process, it should be possible to craft a strategy for minimizing the disruption. A major goal will be to avoid undermining retailing on Market Street during the construction period.

- **Use the trolley as a marketing hook for the rest of the transit system.** This could involve a logo with a trolley on it. The trolley facilities can also disseminate transit information to a wider audience. Trolley riders should also be made aware of other destinations they can reach via DART buses.

- **Provide high-amenity, high-design trolley stops where bus routes intersect the trolley line.** These would certainly include 9th, 4th and 2nd Streets, as well as at the proposed bus facility near the Train Station. These stops should encourage transferring by offering comfortable and sheltered places to wait, and should also provide detailed transit information.

- **Use the proposed transit center at the train station to connect the trolley, the buses, and the train station into one seamless transportation system.** One issue with the trolley route is that it does not directly serve the train station. The new transit center should be designed to effectively extend the train station to the trolley. This transit center should provide very detailed transit information, aimed as much at the out-of-town visitor as the regular transit rider.

8.2 Rethinking the Bus and Transit Network

Of all of the challenges posed by the trolley, rethinking the bus service is perhaps the most important. The downtown area currently receives a high level of service by virtue of the large number of buses circulating throughout the downtown. However, this capacity clearly becomes redundant once the trolley begins operation. Therefore, a "post-trolley" routing strategy is needed to reconfigure the bus system, particularly the downtown portion. This will involve a large number of operating parameters, and a full treatment of this subject is beyond the scope of this report. However, there are several general strategies for reconfiguring the bus system after the trolley is running. All of these assume that the trolley will run at frequent headways during much of the day, and that transfers will therefore be relatively pleasant and hassle-free. The strategies are not exclusive, but could be implemented in any combination. Moreover, some of these strategies could be implemented even in advance of the trolley, as they address neighborhood mobility as much as trolley connections.

- **Strategy 1:** Add one or more neighborhood circulators to connect the neighborhoods to the trolley, and "feed" riders onto the trolley. Design these circulators to address other mobility needs as well.
- **Strategy 2:** Through-route the buses. This could mean using the same bus to run multiple routes, i.e. the Route 1 bus might become the Route 5 bus after leaving Rodney Square. Alternately, new local through routes could be designed to supplement or replace selected in-town routes.
- **Strategy 3:** Create an additional transfer node at the train station, and split transfer duties between this new center and Rodney Square. This DTC proposal calls for a new bus facility, with an indoor waiting area and information center, to be constructed on a portion of the train station parking lot.

Each of these is considered in the following sections.

Neighborhood Circulators

To date, the concept of implementing a system of neighborhood circulators connecting Wilmington's residential areas with the trolley has received the most attention. In fact, the implementation of such a "trolley feeder" service has been included as an element of the planning and budgeting for the project. However, these neighborhood circulators represent more than just a method of connecting neighborhoods with the trolley. They also provide opportunities to increase the overall level of mobility of Wilmington residents, and connect origins and destinations together independent of the trolley route.

One possible neighborhood circulator has already been proposed—the neighborhood loop that is a component of options 2 and 3 of the proposed Sunday service. This loop connects the areas of Wilmington with the greatest demand for transit service both with the trolley, as well as several other significant in-town destinations such as Trolley Square, Adams Four, and Union

Street. If the circulator ran in both directions, it would make the service even more convenient, and would better reinforce the east-west connection needed to supplement the trolley's north-south connection. Yet, this circulator would have to run very frequently to provide a higher level of service than is already available during the week. Therefore, this trolley feeder loop might make the most sense for Saturday and Sunday service, when the regular system is scaled back. The circulator could be superimposed over the existing route system, or any future routings. The system coverage for the dual-flow circulator is shown on *Map 21: Neighborhood Circulator, Dual Flow Option.*

Although this circulator has many advantages, it also has several disadvantages. The route is relatively long and circuitous. At least four vehicles would be needed to provide an adequate level of service. Several neighborhoods are left "out of the loop," including Browntown, Triangle, and Brandywine Hills. Finally, some senior housing facilities in the Triangle area are not directly served by this routing.

An alternative approach to running many vehicles on a long loop would be to run one or two vehicles each on a series of shorter loops. These loops could be designed in such as way as to provide more complete coverage than could be achieved with a single loop. A greater variety of origins and destinations could be connected with multiple loops, albeit often with a transfer.

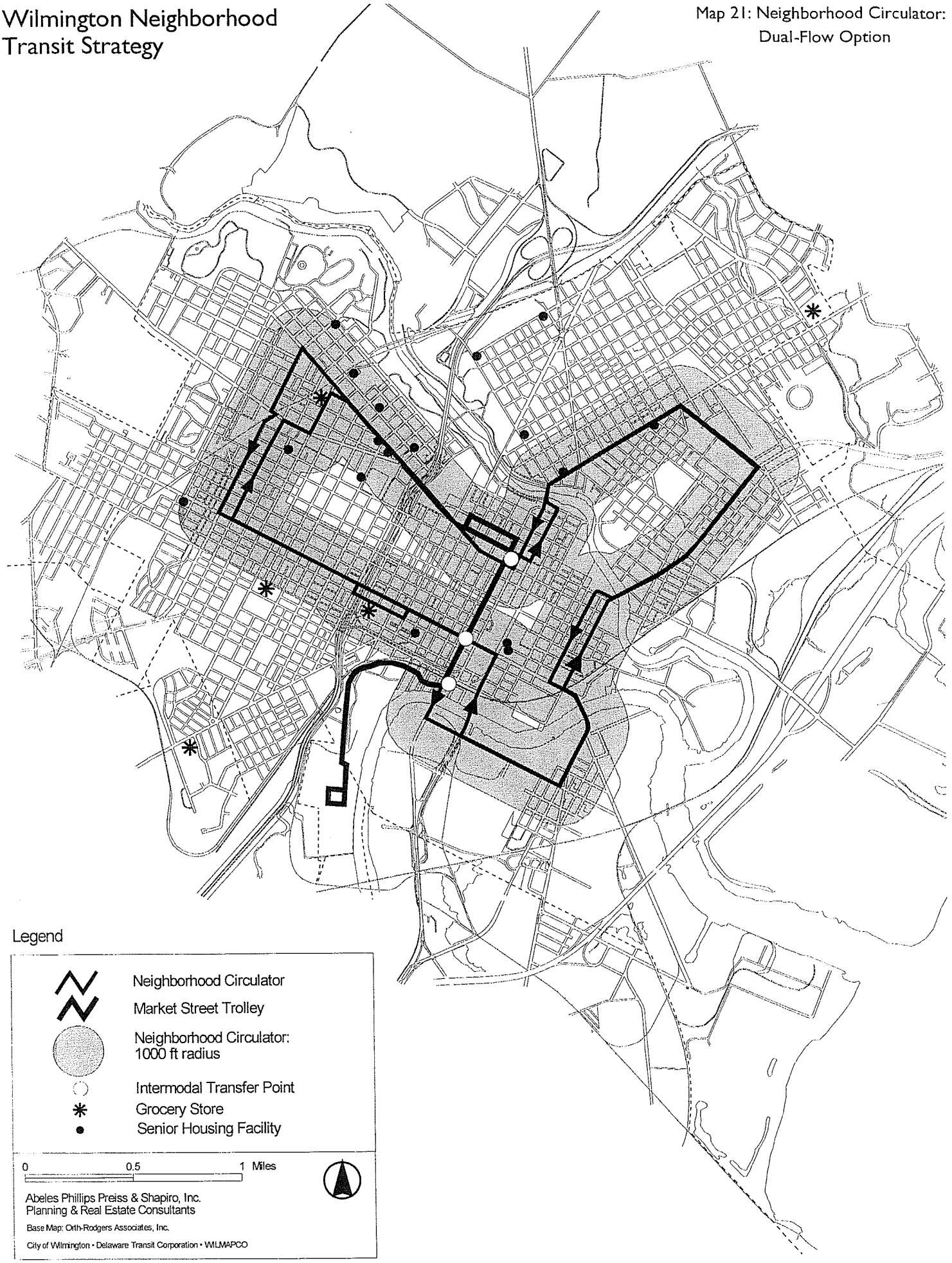
Although more detailed planning and additional community outreach is needed to better define these or any other circulator loops, a series of four loops are proposed to act as trolley feeders and neighborhood circulators. The proposed routes are shown on *Map 22: Neighborhood Circulator, Four-Route Option.* These routes were drawn with the following criteria in mind:

- A route should run in front of or near every senior housing facility.
- Every neighborhood should be connected with the trolley.
- Every neighborhood should have a transfer-free connection to a grocery store.
- Wherever possible, 2-way movement should be provided for on major corridors, such as West 4th and North Market.
- Every loop should converge on Rodney Square, where there will be a timed transfer between the loops (i.e. all vehicles would be scheduled to converge on Rodney Square at the same time, and would not leave until all had made the connection).

The proposed circulators address each of these concerns. Nearly every senior housing facility has a route that directly serves its front door. All routes connect with the trolley at one of three points: Rodney Square, the train station, and/or 4th Street (which becomes a new, secondary intermodal point). The northeast neighborhoods are connected transfer-free with the SuperFresh market on North Market Street, and the remaining neighborhoods are connected with either the Acme supermarket in Trolley Square, or the Thriftway in Adams Four (it should be noted that this latter supermarket would benefit from an upgrade to better capture and serve

Wilmington Neighborhood Transit Strategy

Map 21: Neighborhood Circulator: Dual-Flow Option



Legend

- Neighborhood Circulator
- Market Street Trolley
- Neighborhood Circulator: 1000 ft radius
- Intermodal Transfer Point
- Grocery Store
- Senior Housing Facility

0 0.5 1 Miles

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Base Map: Orth-Rodgers Associates, Inc.

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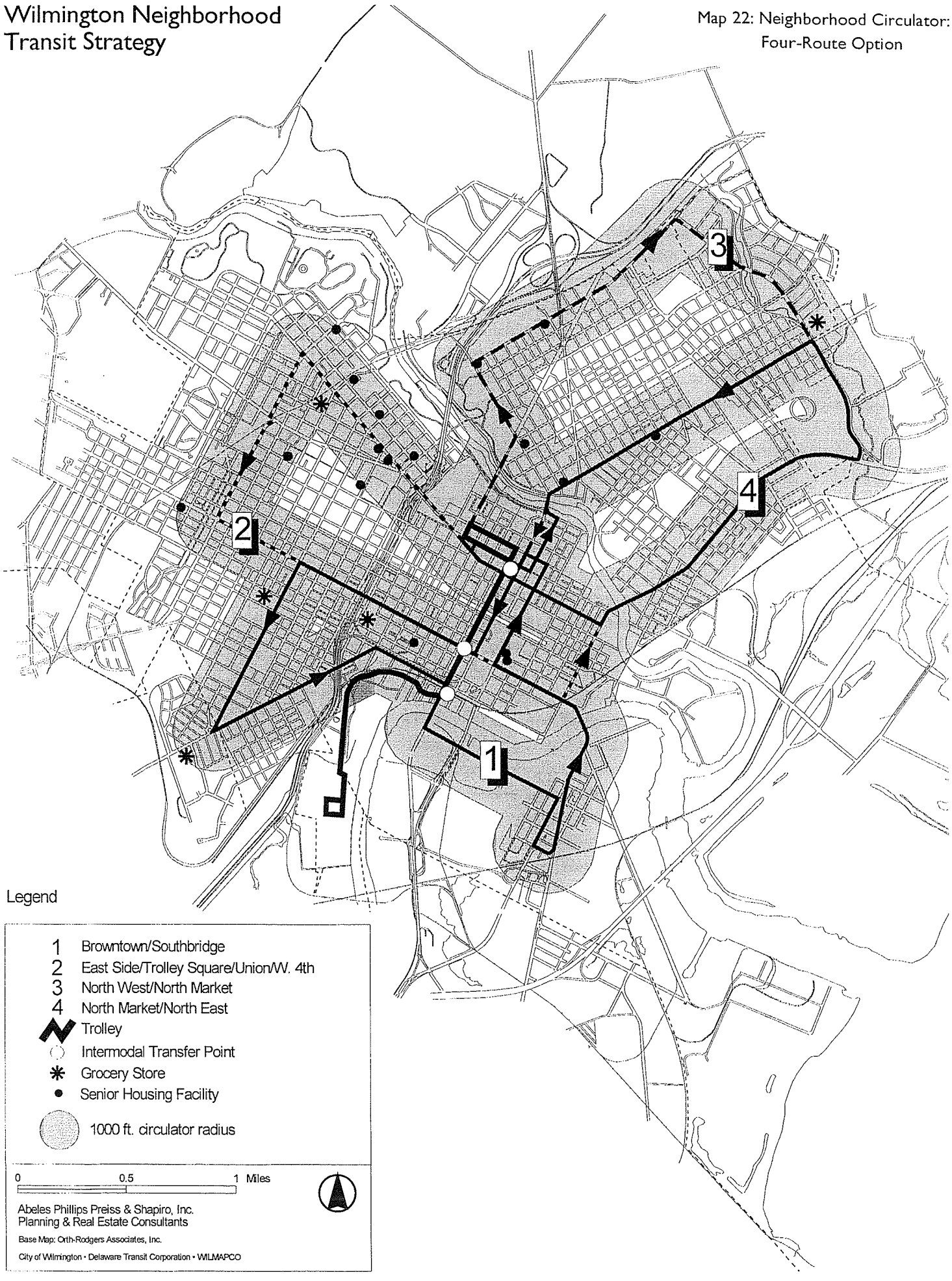
Wilmington Neighborhood Transit Strategy

Map 22: Neighborhood Circulator: Four-Route Option



Legend

- 1 Browntown/Southbridge
- 2 East Side/Trolley Square/Union/W. 4th
- 3 North West/North Market
- 4 North Market/North East
- Trolley
- Intermodal Transfer Point
- Grocery Store
- Senior Housing Facility
- 1000 ft. circulator radius

0 0.5 1 Miles

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Base Map: Orth-Rodgers Associates, Inc.

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its expanded, transit-based market). Two-way movement is provided for on the length of North Market Street, and on a significant portion of West 4th Street. Finally, all of the buses will make a forced, or timed transfer at Rodney Square. No vehicle will be allowed to depart from Rodney Square until the others have arrived. In this way, a rider can depend upon being able to make a transfer to another circulator with a minimal waiting time.

The proposed routes were subjected to an additional constraint: that streets currently hosting transit service are preferred, so that the circulators run on streets where riders and residents are accustomed to seeing buses. This is particularly important if full-size buses are used. However, if smaller vehicles are used, this constraint may not apply, and more flexibility could be applied to the routing.

Both of these circulator proposals would affect the delivery of Sunday service, but not dramatically. Whatever neighborhood loops are eventually implemented would replace the in-town loop proposed for Sunday service. The two city-to-suburb connectors running up Route 202 and out to Christiana Mall/Churchmans Crossing would still be needed; however, both buses should leave from Rodney Square. Since the trolley would serve the riverfront, the riverfront leg of the Route 202 connector would be eliminated. In keeping with the need for timed transfers, the departure of both buses should be coordinated with the forced transfer of the circulators.

A variety of vehicles could be used to provide the neighborhood circulator service. The size of the vehicles should be based on projected ridership, but likely a smaller vehicle will provide adequate capacity, and will also promote a more positive image for the circulators, and provide more flexibility in the choice of routes. The vehicles should be "themed" to reinforce their relationship to the trolley. This might mean using rubber-tired replica trolley buses on the circulator route. However, such vehicles, while quaint, provide fewer seats and are less comfortable than regular buses. As an alternative, the buses could simply carry trolley logos on their front and side panels.

These neighborhood circulators could be implemented in advance of the trolley. In addition to connecting neighborhoods with the trolley alignment, they also address many in-town mobility concerns. The circulators might be used to expand the proposed Sunday service, or to supplement existing Saturday service. In particular, the dual-flow option might easily be used to enhance the Sunday service proposals. However, since these circulators are not conceived as commuter services, they may be less needed during the week.

As a final note, the same recommendations for contracting out Sunday service could be applied to the neighborhood circulators as well. However, over the longer term it may be a better option for the service to be operated by DTC, or by whatever entity is responsible for the operation of the trolley.

Through-Routes

Currently, most buses enter the downtown, loop within the downtown, and exit along the same corridor on which they entered. As noted in Chapter 4, there are advantages to this type of service. However, there are other ways of routing the buses that may provide more advantages, particularly after the advent of trolley service. One possibility is to "through-route" the buses that enter downtown. Instead of looping in the downtown and then returning along the same corridor, a through-routed bus would run along an entirely different route after leaving downtown.

Perhaps the easiest way to through-route the buses is to have one bus cover two routes. As an example, the Route 1 bus might become the Route 5 bus after leaving Rodney Square, and vice versa. After the Route 1 had discharged its passengers, its marquee would be changed to reflect that it would now be serving Route 5. Passengers already on the bus would be allowed to remain, or might be charged the 10-cent transfer fee if they wanted to ride beyond the downtown. The bus would make all the stops along Route 5 and, upon returning to Rodney Square, would then become the Route 1 bus again.

There are several advantages to this type of service. The redundant downtown loops are eliminated—the bus would traverse downtown in one direction only. No new routes are needed, and DTC's service delivery would be only minimally affected. Most importantly, people wishing to travel across town, or suburb-to-suburb, could do so without making a transfer (with the example given, a resident living near North Market could travel to the Christiana Mall without changing buses, which is impossible today).

Suburb-to-city buses are not the only ones that could be through-routed. In-town buses such as Routes 10 and 12 could be linked, or an in-town bus might be linked with a suburb-to-city bus. This latter option is more problematic, however, since buses with suburban routes typically run less frequently and are more difficult to keep on schedule. One constraint is that only buses with similar schedules could be through-routed, and that the through-routes would be best applied to mobility services as opposed to commuter services.

While the above discussion envisions through-routing buses by linking complementary routes together, another option would be to design new local through routes to replace or supplement the existing in-town routes, or to serve as weekday neighborhood circulators. Possible local through-routes to explore could include the following:

- The Route 1 bus could run along the Route 8 loop after leaving Rodney Square, either supplementing a scaled-back Route 8 service, or replacing the service altogether.
- The Route 2 bus might loop along 2nd Street, Greenhill Avenue and West 4th Street before heading back up the Concord Pike.
- The Route 5 bus might loop through the Eastside and Southbridge, picking up additional riders before returning to the Christiana Mall.

- A new downtown loop might be created to replace the existing Amtrak and Orange Street loops. This loop might run on Madison, 11th, Spruce and 4th Streets. This action would provide a very high level of service to the downtown neighborhoods, and would require only minimal adjustments to the existing bus schedules.

These types of through routes would effectively add local service without having to create new routes from scratch. They would also help to more effectively connect Wilmington's neighborhoods to the trolley.

Through-routes can be an important part of post-trolley system configuration. However, the final implementation of any through-routes requires substantial additional study and community outreach. Since the through-routes can help minimize the need for transfers, current transfer patterns should be analyzed as part of the decision making process. Routes that already experience a high number of route-to-route transfers would be prime candidates for linking into through-routes.

Train Station Transit Center

This DTC proposal calls for a new bus facility, with an indoor waiting area and information center, to be constructed on a portion of the train station parking lot. During the off-peak period, all routes coming from points south would terminate at the new terminal. Buses approaching from the north would continue to terminate at Rodney Square. The existing loops between Rodney Square and the train station would be eliminated. During the peak period, however, the bus routes would continue to serve both the northern and southern portions of the business district, much as they do now.

As noted, an important aspect of the transit center is the need to effectively link together three different transit modes: regional and long distance rail at the train station, local light-rail on Market Street, and the regional bus network. The transit center can help bridge the gap between the train station and the trolley, and in so doing, more fully integrate these systems with the bus system. Specifically, the transit center should provide a weather proof transfer point between all three systems, and should also provide full transit service information. The transit center could also provide other visitor information, thereby serving as the "gateway" entry point for visitors who arrive by means other than private auto.

The second major element of the transit center project is the concept of terminating bus routes from the south at this new transfer node, forcing a transfer to the trolley to access points further north. This action will have the advantage of simplifying the bus routing, and reducing bus congestion in the downtown. It will also necessarily boost ridership on the trolley. However, this option requires careful consideration. For many riders it will introduce a new forced transfer within view of their destination. This will likely make the trip downtown more frustrating, possibly depressing ridership levels. Moreover, because trolley cars carry as many or fewer

people than a typical bus, many trolleys will be needed to duplicate the capacity of the existing bus system. DTC is right to make this only an off-peak feature of the system—the trolley likely could not handle the full load of peak-period commuters entering and exiting the downtown.

The proposal for through-routing the buses can complement the transit center and dual-transfer node strategy. Most through-routed buses could be made to stop at both nodes. While the neighborhood circulator proposal is clearly more centered on Rodney Square, it could be modified to more strongly reinforce the transit center. However, while the southern end of the downtown business district continues to grow in importance, Rodney Square still clearly serves a greater concentration of employment and services, and will continue to do so for the foreseeable future. Therefore, it makes sense to continue Rodney Square's role as a transit hub.

Recommendations

- **Undertake a detailed study examining the use of through routes to better feed the trolley and serve Wilmington's residents.** This study should include a detailed analysis of transfer behavior, as well as public meetings with and/or surveys of transit riders. The through routes should be designed to address the needs of reverse commuters, and should target those areas with the greatest transit demand. The through routes might also address in-town commercial centers, including Trolley Square, Union Street, and North Market.

- **Also undertake a neighborhood circulator study, to expand upon the options presented in this report.** Two options are proposed: a single bi-directional loop, and a four-loop circulator system. The proposed routes address a number of concerns, but still require further refining through a community outreach process, as well as a more detailed study that will help quantify expected ridership levels and operating costs. This study will also determine whether it is better for DTC to operate the service, or for the service to be privately contracted.

- **Implement circulators initially on weekends, supplementing the existing Saturday service and replacing the proposed in-town portion of the Sunday service.** This new circulator service should be frequent and convenient. Therefore, if the single circulator route is chosen, it should be run in two directions. With either option, as many vehicles should be assigned to the service as is feasible, to reduce headways. (On weekdays it is assumed that the normal bus service, or a through-routed bus service, will provide adequate connections to the trolley route. However, if the neighborhood circulators prove popular, they could be implemented on a daily basis.)

- **As the trolley gains in popularity, provide additional transit links connecting other attractions to the trolley.** These could be marketed as adjuncts to the trolley service, rather than as regular DART routes. Possible ideas include a shuttle to and from the Little

Italy restaurant row, and a circulator connecting the trolley with museums and tourist attractions. These special purpose buses should likely be limited to weekends, and perhaps evenings in the case of Little Italy.

9 Land Use and Urban Design Strategies

Downtown Wilmington already provides a pedestrian-friendly environment.

The previous chapter discussed strategies that directly relate to the quality and quantity of transit service provided. Also included were strategies addressing the amenities of the transit environment, including shelters at transit stops, seating, and availability of transit information. These strategies would be the primary responsibility of DTC, although the City, non-profits, and civics would also have a role in implementation.

In contrast, this section discusses those factors that can increase transit use, and that can be at least partially influenced by actions of the City of Wilmington. Examples are given where available regarding what other jurisdictions are doing or have done to promote transit use. Keeping with the discussion above, they fall into four categories—the walking environment, auto parking, transit amenities, and land use patterns and densities. Note that each of these areas not only affects transit use, but also directly influences quality of life. Fundamental to this chapter is the notion that a livable urban environment, quality transit, and increased transit use go hand in hand.

9.1 The Walking and Transit Environment

In many communities zoning ordinances are being re-written to ensure that development sites are connected to transit stops with convenient and direct pedestrian paths. The purpose is to create direct non-circuitous walking routes through areas of that are interesting and pleasant to walk in, and that are safe and free from traffic conflicts. The following are some examples from around the nation:

- In Clark County, Washington developments are required to connect to the existing pedestrian network.
- In King County, Washington (which includes Seattle), developments must be designed to link as directly as possible to transit stops. Developments with multiple buildings must be interconnected by walkways to one another. Further, it is directed that walls not be erected to impede pedestrian travel and where there are significant slopes, stairs and ramps should be put in place. In King County, a set percent of an area must be devoted to pedestrian amenities for large developments. Numerous measures are in place to ensure that walkways are pleasant to walk in.
- In Ontario, Canada a "significant majority" of trip-generating activities must be within a 400-meter walking distance of a transit stop. Conversely, the Oregon Chapter of APA recommends that transit stops be provided close to large developments. According to Oregon APA and Ontario, Canada guidelines, sidewalks must be continuous and on both sides of a street, and not be interrupted by cul-de-sacs and dead-end streets.
- NJ TRANSIT guidelines recommend that where blocks are greater than 600 feet long, mid-block cut-throughs should be provided.
- In Spokane, Washington, floorspace bonuses are provided to developers who provide public amenities such as seating, shelter and public restrooms.

- In Vancouver, Washington most of the street frontage must be occupied by "interest-creating features", such as shops with windows, displays, and pedestrian entrances. Similar zoning requirements are in place in Charlotte, North Carolina and Santa Monica, California. Street trees are required in many ordinances to offer shade, visual relief and a buffer between pedestrians and street traffic.
- In Sacramento, California and Vancouver, Washington, ordinances allow a reduction of parking spaces if transit amenities are provided, included shelters, bus pull-outs, sitting areas and park and ride lots.

Changes in the walking environment aimed at making Wilmington more "transit-friendly" are likely to be small and incremental in nature. Downtown Wilmington already is laced with interesting shops, restaurants, a sidewalk and street grid, and walking short-cuts and connections to buildings and transit stops. Most streets—with the exception of Walnut, King and Delaware Avenue—are not especially wide and crossing them is not dangerous. Some of the land in the portion of the downtown from approximately Second to Sixth Street is filled with relatively soft uses, and application of the some of the pedestrian-friendly features described above could be helpful. Also, the grade drop-off to the north toward Market Street should be considered in designing development in that direction. The superblocks on the east side of downtown need a better mid-block crossings and pedestrian amenities. The popular pedestrian through way connecting the government center with Market Street between 8th and 9th Streets needs a signalized crosswalk.

The residential areas of Wilmington are generally pedestrian-friendly. The street network is a grid system with few dead-ends or cul-de-sacs. Sidewalks are in place throughout medium- and high-density areas. However, several of the larger arterials into and out of downtown Wilmington, such as Pennsylvania Avenue and Northeast Boulevard, would benefit from improved pedestrian facilities including striped crosswalks. In areas with higher pedestrian volumes, a prohibition of right turns on red may be appropriate.

Not all bus stops have good pedestrian access and amenities.

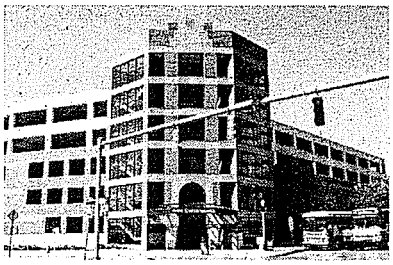
Recommendations

- **Install a new signalized crosswalk between 8th and 9th Streets on King Street, aligned with the popular pedestrian cut-through to Market Street.** This will help facilitate safer pedestrian flow, and will also calm traffic on King Street.

- **As part of the downtown and riverfront design guidelines originally recommended in the *Wilmington Transit Connector Study* (Abeles Phillips Preiss & Shapiro, 1999), include regulations governing transit access and the pedestrian environment.** These guidelines might include requirements for bus stop facilities for developments fronting on transit routes and set-asides for pedestrian spaces and amenities. The City has already implemented regulations governing permeability and prohibiting blank walls and other street-deadening features. In the C-3 and C-4 districts that govern much of downtown,

Major traffic arteries such as Pennsylvania Avenue need pedestrian enhancements.

Transit and pedestrian access should figure prominently in HOPE VI plans.



The availibility and cost of parking strongly influences transit use.

new buildings are required to have 50 percent of the ground floor area transparent. Moreover, in the downtown design district, buildings are required to respect the prevailing pattern of setbacks in the immediate area.

- **Stripe and signalize more crosswalks on major traffic arteries such as Pennsylvania Avenue.** Intersections adjacent to residential concentrations should be emphasized. For intersections with either a high number of pedestrian-vehicle accidents, or high pedestrian traffic, complement the pedestrian crossing with a no-turn-on-red restriction.

- **Implement pedestrian-friendly design standards on future HOPE VI reconstructions of public housing.** With the high number of households with no car, as well as the significant numbers of children, providing pedestrian enhancements for these developments should be a high priority.

- **Install pedestrian scale lighting along transit and pedestrian corridors in high-crime areas, particularly West 4th Street.** Traditional tall streetlights shine overlapping light on the street bed and a single layer of light on the sidewalks, making the sidewalks appear dark by comparison. Pedestrian-scale lights shine equal amounts on the streetbed and sidewalks, increasing the feeling of security.

- **Provide adequate pedestrian walkways for all of Wilmington's bridges.** Most bridges already have good walkways for pedestrians. However, some bridges such as the 4th Street Bridge, could be improved.

- **Continue to build on the accomplishments of the Wilmington Initiatives in improving the pedestrian quality of Wilmington's streets and sidewalks.** These projects have had a transforming effect on streets throughout the city.

9.2 Auto Parking

Both the availability of parking and the cost of parking can affect the use of transit[24]. More generally, parking ratios in buildings can be reduced if the employers have aggressive transportation demand management (TDM) programs or if nearby transit services are available. King County (home of Seattle, Washington) lowers parking requirements in areas where studies show that TDM programs are effective. Without studies, the reductions in parking can still be accomplished, but on a more gradual basis. Olympia, Washington has eliminated its minimum parking requirements entirely in its downtown (not unlike Wilmington), and Sacramento, California has done that in its historic district. Salt Lake City has established maximum ratios, which are to be ratcheted down over time. Other communities set the parking requirement for mixed-use developments at the level required for the more parking intensive use, not added to the requirement for a second or third use (King County).

24. *Creating Transit-Supportive Land Use Regulations*, Edited by Marya Morris, American Planning Association, Planning Advisory Service Report Number 468.

These parking reduction strategies would need to be reviewed very carefully for their applicability in Wilmington at this time. According to a 1999 report by Orth-Rodgers and Associates, off-street parking in downtown Wilmington is in short supply[25]. In their most recent report, Orth-Rodgers recommended implementing a maximum parking space-to-floorspace ratio of 2.4 for downtown office development. However, with parking supply limited, it could be dangerous for the economy of the downtown to consider restricting parking supplies below existing ratios of about 2.5. In an earlier 1997 study, Orth-Rodgers recommended that in the absence of any specific building requirements for a minimum ratio, a default value for future office buildings should be set at 3.0[26]. This would appear to be slightly higher than necessary since the downtown is functioning well with the actual ratios somewhat lower. More telling in the earlier parking report is the finding that where parking is provided free for employees, only six percent use transit, but that three times as many (18 percent) use transit when parking is not provided for free. The cost of parking in Wilmington has long been viewed as a metric for the transit fare structure, and is widely seen as influencing ridership.

This suggests that a reduction in the practice of free parking, instead of parking caps, is a sensible target to promote greater transit use. Most people provided free parking must now pay for transit, creating an uneven playing field. Fortunately, federal law makes it possible for employees to offer employees up to $65 toward a monthly transit pass, which is untaxed as income and which employees can deduct as a business expense. To the extent that employers increase transit ridership among their employees, they can reduce the cost of supplying parking. This can be tied to the concept of "cashing out" free parking, whereby all employees are given the market value of parking by their employers and then are charged if they use it. Workers who continue to drive are no better or worse off than before the program was implements. However, workers who forego parking and choose to travel by some other means pocket the money for their travel expenses, and experience a small profit if their travel expenses are less than the parking fees. In downtown Los Angeles, this has led to substantial reductions in auto use.

Recommendations

- **Expand employer adoption of transit pass programs.** Since the enabling legislation has been enacted at the federal level, encouraging wider adoption of these programs is largely a matter of better marketing the benefits, as well providing assistance guiding corporate human resource departments through the process of setting up the program. In fact, both the Transportation Management Association and the Delaware Valley Regional Planning Commission are currently both involved in promoting transit pass adoption and providing technical assistance.

- **Expand employer adoption of parking "cash out" policies.** Under this program, employers would pay employees directly the market value of their parking, and then charge them the same if they use it. Employer adoption can be encouraged through incen-

25. *City of Wilmington Consolidated Parking Study: Central Business District and Christina Riverfront,* Orth-Rodgers Associates, Inc., August 31, 1999.

26. *Wilmington Parking Authority Central Business District Parking Study,* Orth-Rodgers and Associates, November 20, 1997.

tives or mandated through ordinances. Employers are candidates for cashing out free parking today if they can save money by initiating such a program. If they now rent the spaces rather than own them, or if they own them and can rent them to others, then there is a built in incentive to provide the cash out and recover this forgone revenue. Mandatory requirements for employer trip reduction measures have occasionally been tried at the municipal level, and in these cases, cashing out could be an effective means of reducing trips.

Transit stops can and do reinforce retail locations.

9.3 Rethinking Retail Corridors

Wilmington residents have access within their city to four types of retail: Neighborhood, Community, Downtown, and Regional.

- Neighborhood shopping streets and nodes provide a small mix of convenience-oriented stores in a pedestrian setting, and primarily service a walk-in clientele with some patronage coming from pass-by traffic. These shops are typically not destination retail, although some specialty retail stores are typically found on neighborhood shopping streets. The major neighborhood shopping streets in Wilmington include parts of West 4th Street, Union Street, North Market Street, Maryland Avenue, and Delaware Avenue in Trolley Square.

- There is limited community shopping located along major traffic arterials. These include the SuperFresh shopping center on North Market Street, the Miller Road Shopping Center (technically outside of the city limits), the Adams Four shopping center, and shopping along Pennsylvania Avenue. However, most of the major arterials are dominated by auto-related uses, including service stations, car dealers, and others.

- Wilmington also has limited but growing downtown retailing. Currently, downtown retailing is dominated by stores that attract a walk-in trade from the office worker population. The downtown retail mix is therefore dominated by restaurants. It also has stores that appeal to an executive market, such as jewelry stores and specialty apparel stores. Some stores, such as the Happy Harry's, overlap with the transit rider market population. For the most part, though, the downtown does not do a good job of serving the shopping needs of the surrounding neighborhoods, and is mostly shuttered after working hours and on weekends.

- The Shipyard Shops represents the first regional retail development in Wilmington since the downtown declined as the center of retailing decades ago. While only the first phase is open, the Shipyard Shops have been able to attract high-profile discount apparel stores such as the LL Bean outlet. It also houses some smaller stores and a couple of restaurants. Neighborhood meetings indicate that the Shipyard Shops, and the riverfront in general,

are growing as a weekend destination for the residents of Wilmington's neighborhoods. While the Shipyard Shops has primarily an auto orientation, it puts destination comparison retailing within a much easier reach of Wilmington residents, including transit riders.

Looking first at neighborhood shopping, the availability of goods and services within walking distance of home is a key attribute of transit supportive areas. It is generally inconvenient to do convenience shopping via transit. Even in the most transit friendly cities such as New York, people typically do convenience shopping on foot and only use transit to access destination retail. Good neighborhood retail then directly affects people's willingness to adopt a transit-oriented lifestyle. In fact, this attribute is one variable in the scoring system for the Location Efficient Mortgage program discussed later.

Located throughout the City are a number of neighborhood commercial streets that greatly vary in their level of viability. These areas are typically zoned C-1 for neighborhood shopping or C-2 for secondary business centers. These districts permit a wide variety of retail uses, including heavier uses such as gasoline service stations, which are permitted by special exception in C-1, and as-of-right in C-2.

In addition, there are many corner stores scattered throughout Wilmington's older neighborhoods. These corner retail establishments are permitted by special exception of the Zoning Board of Adjustment, subject to a public hearing with notification sent out to all affected property owners. There is no unified land use policy dealing with corner retail locations. As a result, active stores and vacant storefronts tend to be scattered around Wilmington's neighborhoods at random. Many storefronts are occupied by liquor stores, which in some areas negatively impact surrounding residences by acting as magnets for "hanging out" and rowdy behavior.

As noted in the neighborhood chapter, most of Wilmington's neighborhoods lack quality food shopping within walking distance. The best supermarkets are located either at the edge of the city or right over the border. The best supermarkets capable of serving a walk-in clientele are the Acme in Trolley Square and the Thriftway in Adams Four. The Sav-a-Lot on Lancaster mainly deals in bulk items. There are also a few smaller food markets on North Market and Concord Avenue.

One reason for the poor neighborhood shopping is the lack of population to create a critical mass of retail in any one neighborhood. A viable neighborhood shopping district would typically provide around 50,000 square feet of retail space. Given median household income levels in Wilmington, and given that neighborhood convenience shopping would at best consume around 25 percent of disposable income, such a shopping street would have to service around 4,500 households (or around 10,800 people) to be viable. Given Wilmington's small neighborhood units, such a shopping street would have to draw from several neighborhood areas in order to be viable.

In an era where retail outlets tend to be larger, and more people have cars and drive to shop, the older retail corridors can no longer support the same amount of retail square footage as they did in their prime. At the same time, Wilmington's neighborhoods would lose a key amenity if there were no shopping within walking distance. Therefore, it makes sense to pursue a policy of consolidation and triage, concentrating retail in the most viable locations to increase synergy, and amortizing retail over time in other locations.

Certain corner store locations might benefit from rezoning.

The corner stores can provide a high level of convenience, but are only suitable for a limited range of uses. In general, corner retail will benefit from being adjacent to other viable corner stores. Once again, consolidation and triage are needed. Also, reasonable use controls can help control negative uses, such as liquor stores, which are better located on commercial streets. Finally, corner retail can benefit from many of the same public improvements—such as corner bump-outs and traffic calming, landscaping, and improved transit stops—that are being undertaken on major corridors through Wilmington as part of the Wilmington Initiatives.

In terms of community shopping, there are few development sites available to support additional community shopping developments. An exception is Northeast Boulevard, yet the string of retail failures, both within and outside of Wilmington, calls into question the wisdom of pursuing additional retail development along this corridor. The strategy should therefore be to increase visibility and access for Wilmington's existing community shopping centers. These strategies include such measures as routing buses through Adams Four (described earlier), routing buses through parking lots to stop near front doors, and providing better transit faculties at these shopping centers.

Finally, it makes sense to continue efforts to concentrate as many retail options as possible both downtown and on the riverfront. Having more retail in a central location will make this retail easier to serve with transit, increasing shopping options for transit dependent city residents and increasing transit ridership, especially on evenings and weekends. In the downtown on Market Street, retail uses will thrive to the extent that they can address multiple populations: downtown workers, downtown residents, transit riders, tourists and students. On the Riverfront, the regional orientation of the retail and entertainment provides the opportunity to place uses that are typically found only in suburban malls—big apparel stores, multiplex movie theaters—within reach of all of Wilmington's residents. As the riverfront expands, transit service to the riverfront should be likewise expanded.

Recommendations

- **Revise the C-1 use regulations such that gasoline service stations are not permitted, even by special exception.** Gas stations and repair shops are simply not in keeping with the purpose of the C-1 district under any circumstances. Such uses should be restricted to major thoroughfares, intersections near highway exits, and other areas with a heavier commercial flavor.

- **Undertake a series of retail corridor studies for each of Wilmington's neighborhood commercial streets.** These should begin with lot-by-lot field surveys of all of Wilmington's commercial corridors and nodes as a first step to reevaluating the zoning as part of a broader land use policy. By mapping types of retail (convenience versus comparison, auto-related, etc.), vacancies, urban design features, transit routes, existing and planned transit stops, and other data, a diagnostic picture of each of Wilmington's retailing areas will emerge, showing strengths and weaknesses. Such a map will also provide insight into the likely market populations each retail area currently serves. The purpose of each study will be to see where commercial revitalization, zoning and transit services and stops should be reduced, changed, or tweaked.

- **As part of the HOPE VI reconstruction of public housing in the northeast section of Wilmington, reconsider the function of Northeast Boulevard.** Of all of Wilmington's gateways, Northeast Boulevard is the most problematic. Moreover, it is the main traffic artery and transit corridor running between two of Wilmington's largest concentrations of public housing. The looming reconstruction of some of this housing provides both the motivation and opportunity to rethink this corridor. Northeast Boulevard, in spite of being a wide traffic artery, has lost its retailing energy, with the result that this street does not address the needs of drivers or adjacent residential areas. It may be appropriate to redevelop Northeast Boulevard for apartment housing and limited commercial uses. Appropriate buffering of the residential uses could help restore a landscaped boulevard feel to this corridor. Improved transit facilities would complement the redevelopment efforts.

- **Pursue a "four corner" strategy for selected retail corner locations.** This would involve three complementary actions:
  - Mapping the corner retail location with the C-1-A neighborhood retail district;
  - Pursuing landscaping and traffic calming improvements to the corner that would clearly distinguish its commercial nature; and
  - Where appropriate, locating a bus stop at the corner, with at least a bench, and preferably a shelter.

  Rezoning selected retail corners would allow retail stores as-of-right, but would put strict controls on use, hours of operation, and elements such as signage. Parking requirements would be minimal, and parking would not be required for small stores. Corners with active or successful businesses, especially corners with two or more active stores, would be targeted for rezoning.

  The C-1-A district is an existing zone that already contains many of the regulations needed for retail corners. Only neighborhood-scale uses are permitted, and stores cannot exceed 1,500 square feet on the ground floor and 2,500 square feet overall. Parking is not

required for stores of 1,500 square feet or less; residential uses are allowed as of right; hours of operation are limited to 6:30 am to 9:00 pm; and signs can only be illuminated during business hours.

Two modifications to the C-1-A district are recommended, however. First, liquor stores should be specifically prohibited. Second, public and private garages should only be permitted via approval of the zoning board of adjustment. The C-1-A regulations can be modified with little impact, as this district has been mapped only in a few very small areas to date.

- **Pursue a drugstore for the site at the intersection of Northeast Boulevard and 12th Street.** A grocery store at this location failed, and another grocery store would likely suffer a similar fate. However, as the site is located on a major corridor and served by an exit off of I-495, it is ideal for a Rite Aid, Walgreens, or other drugstore chain that has been expanding into inner city markets. These types of stores often function like general stores, and would greatly expand the range of goods available to area residents. One or more bus stops should be included as part of this project, and integrated into the site plan.

- **Provide inbound and outbound bus stops on Route 1 serving the Superfresh supermarket on North Market Street.** The closest stop is inbound is down the hill from this grocery store, and the pedestrian access requires negotiating several stairs and a tunnel-like approach. The stop should instead be located on the corner of North Market and Lea Boulevard.

9.4 Transportation Improvements

Since the bus service uses public streets, the routing and performance of the bus system is heavily dependent on traffic patterns and conditions. Certain routes which might be favorable from a transit perspective are currently impossible due to street directions and patterns. Restricted turning movements and physical obstacles also influence transit routes. Traffic congestion reduces the effectiveness of the bus network, and can hamper efforts to achieve greater on-time performance.

Recommendations

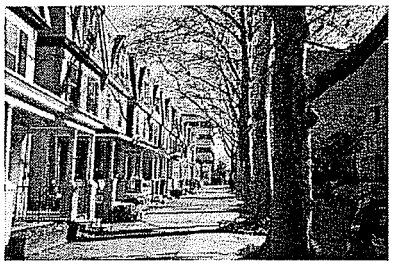
- **Properly signalize the intersection of Union Street and Pennsylvania Avenue.** Union Street is split at this location due to a railroad overpass and viaduct. The leg of Union north of Pennsylvania Avenue is properly signalized, but the southern leg is not. Since Union is one-way southbound at this point, there is high demand for left turn movements onto Union from west-bound Pennsylvania, but this turn is quite difficult. This not only makes bus turns at this intersection problematic—it also hampers vehicular access to Little Italy's restaurant row. Therefore, a properly timed signal with a left-turn arrow should be

installed covering the entire intersection.

- **Construct a new bridge connecting the Riverfront with Route 13/South Market Street in South Wilmington.** Roadway access to the riverfront is extremely limited. Only two streets—Madison and Beech—provide ingress, and only West and Beech Streets provide a means of egress. The road network is not only inadequate from a vehicular point of view, but it also makes it difficult to serve the area with transit, as it is currently impossible to have a through route that serves all the attractions. Instead, buses must loop around in the riverfront. A new bridge over the Christina River would, however, provide a significant advantage. Commuter buses coming up Route 13 from the south, of which there are many, could now be routed through the riverfront. This would provide park and ride facilities located on underutilized lots on the riverfront with a very high level of service, without adding any more buses to the network. It would also increase regional transit access to the riverfront, and eventually, the trolley.

- **Provide for improved access to the Riverfront from Browntown via Beech Street.** Access to the riverfront from Browntown and Hedgeville is problematic because the only access point, Beech Street, is too narrow to support frequent two-way traffic. Widening this street to better accommodate two-way traffic will facilitate both vehicular movement as well as future bus routes. This should be undertaken as part of RDC's plan to improve pedestrian connections between Browntown and the riverfront.

10 Housing Strategies



The following chapter examines potential linkages between housing policy—attempts to encourage greater levels of homeownership and buyer interest in Wilmington's older neighborhoods—and the City's transit infrastructure. While at first glance the two might seem to have a tenuous relationship, recent innovations in housing finance argue that there is more of a link than might initially be thought.

Specifically, this chapter looks at two relatively new mortgage instruments that relate mortgage amount and terms to a household's ability to reduce transportation costs. These programs are the **Location Efficient Mortgage,** and the **Downtown Walk to Work Mortgage.** Both programs are currently sponsored by Fannie Mae and are receiving trials in selected cities in the U.S. The theory behind both programs is simple: in-town households will spend a small portion of the income on transportation as compared with suburban households, and therefore should be able to afford a somewhat higher mortgage.

In addition to these programs, this chapter also examines the application of employer-assisted housing programs to Wilmington.

10.1 Location Efficient Mortgage

The **Location Efficient Mortgage** (LEM) is a vehicle conceived by the Center for Neighborhood Technology in Chicago that seeks to encourage residents to use mass transit and offers homebuyers a financial incentive to live in more densely populated, urbanized areas where:

- Good public transportation is available;
- Most everyday needs (such as schools, churches, retail and services, recreational facilities entertainment) are within walking distance; and
- Reliance on an automobile for daily commutation and day-to-day activities is not required.

The underlying premise is that families living in location efficient areas have lower than average automobile-related transportation expenses and therefore have more income available for mortgage payments. As noted in Chapter 2, the average American household spends around $14,000 a year on transportation making it the second biggest household expense behind housing. Making do with one less car can save a household thousands per year, with the magnitude of the savings depending upon the factors listed above.

The LEM Program

In 1999 Fannie Mae, the nation's largest secondary mortgage institution, launched a $100 million pilot project making LEMs available in several large cities including Chicago, Los Angeles, Seattle, and the San Francisco Bay Area

Fannie Mae has committed to underwrite mortgages. It does not provide funding for developing the program. Funds to establish and implement an LEM program must come from other sources such as local or state government, foundations or not-for-profit agencies.

Interest in LEMs has been high in urban areas around the country since it was introduced. A number of cities including Atlanta, Las Vegas and Minneapolis are looking to establish LEM programs. Reportedly, Fannie Mae and cooperating lenders are interested in extending the program to these and other cities if it can be demonstrated that conditions exist to make LEMs an attractive and viable alternative to traditional mortgages in densely populated areas with good public transportation. According to Michelle Desiderio, Senior Product Developer with Fannie Mae's central office in Washington, DC, a commitment by Fannie Mae to purchase LEMs in Wilmington may be realizable if conditions indicate that it would be a useful tool.

It should be stressed that LEMs are only one tool, and alone will not necessarily have significant impact on utilization of public transit or increased home ownership in urban areas. Transit service levels, transit subsidy programs, attractiveness of the area and housing stock, energy efficient design and credits, alternative transportation approaches (e.g. FlexCar, an experiment launched in Portland, Oregon in 1998), transit-oriented development initiatives and market conditions are all important considerations.

Most of the $100 million Fannie Mae committed in 1999 for purchase of LEMs has been allocated. Fannie Mae has designated two nationwide lenders, Countrywide Home Loans, Inc. and CitiCorp as authorized lenders, as well as a number of smaller local institutions in the pilot cities. Fannie Mae is also considering increasing this commitment if the pilot program demonstrates success. An evaluation effort is underway, but no firm conclusions have been drawn as yet.

How the LEM works

LEMs are 15- to 30-year fixed-rate mortgages for single-unit, owner-occupied houses and condominiums. They allow borrowers to qualify for higher mortgages than under traditional lending guidelines based on the calculated additional income available for mortgage payments as a result of savings in transportation expenses resulting from living in a more location efficient area. The basic features of the LEM in comparison with traditional mortgages are as follows:

- Low down-payment requirements; as low as 3 percent of appraised value (versus 5-20 percent with a conventional mortgage)
- Loan to value ratios up to 97 percent (versus 80-95 percent with a conventional mortgage)
- Maximum housing expense to income ratio of 35 percent (versus 28 percent with a conventional mortgage)

- Maximum debt-to-income ratio of 45 percent (versus 36 percent with a conventional mortgage)
- No income restrictions
- Maximum mortgage amount of $252,000

Actual terms of a LEM are based on computer models developed by the Center for Neighborhood Technology (CNT) for the Institute for Locational Efficiency (ILE) and are specifically designed for each city in which new loans are made. Models have been developed for Chicago, Seattle and San Francisco. For any given property in a city, the model will assess the location efficiency and then estimate the savings in automobile-related expenses a prospective owner would enjoy—the Location Efficient Value (LEV). This LEV is then added to the mortgage applicant's income in calculating the housing-expense-to-income and debt-to-income ratios that determine the maximum mortgage amount.

The LEM computer model calculates the LEV in three steps. First, an econometric model is constructed to predict both vehicle miles traveled and number of autos owned per given residence using six independent variables:

- Household income
- Number of persons in the household
- Households per residential acre
- Households per total acre
- Pedestrian factor
- Transit access

Next, an econometric model estimating vehicle miles traveled, and auto expenses (based on Federal Highway Administration figures developed in 1992) is prepared. Automobile expenses for the applicant's household are subtracted from the estimated automobile expenses for a household of similar size and wealth in a neighborhood with relatively low density, poor transit and low pedestrian friendliness.

Finally, the resultant LEV, expressed in dollars, is added to the applicant's income to determine the maximum mortgage the applicant would qualify for given the before stated criteria.

In Chicago, for example, the estimated LEV for different geographical areas around the city ranges from $116 to $540 per month. These estimates are based on a family of three with a $40,000 year annual income. The average savings is $300 per month. In Los Angeles typical savings are $200 to $250.

Based on results in Chicago, the pilot city with the most advanced LEM program, the additional amount a borrower may qualify for with a LEM is substantial and may equal as much

as a year's income for certain buyers. For example, a purchaser in certain areas of Chicago who might otherwise qualify for a $125,000 conventional mortgage may be able to qualify for as much $185,000 with a LEM.

Buyers using the LEM are required to complete homebuyer counseling before the purchase of the home and are requested to participate in an annual survey conducted by the ILE. This survey is for informational purposes only.

Experience to Date

Discussions with Kim Houvelor of the Center for Neighborhood Technology (CNT) and Fannie Mae representatives in Chicago indicate that about one LEM is currently being closed each week in Chicago. This is expected to increase to about three per week by the end of the year. About seventy prospective purchasers have been pre-qualified to date in the Chicago area.

In Los Angeles, according to Barbara Hiedman, Partnership Director for Fannie Mae, only ten mortgages have been closed to date. Reportedly there have been no closings to date in San Francisco, in part because of the extraordinarily high cost of housing in the Bay Area and the difficulty in obtaining the required data to complete the model necessary to compute LEV.

Actual experience thus far has indicated that the predominant market profile of LEM customers appears to be:

- Mostly first-time home buyers
- Young adults (25 to 40 years old), single and couples, and some "empty nesters" who want to live close in and are not adverse to using transit
- Mostly moderate and middle-income (80 percent of the median income or higher in Chicago; 100 – 120 percent median income in Los Angeles)
- Own one car or none
- Prefer to live in an urban or extra-urban (close in suburban centers) areas with basic services within a convenient walk—less than 1/2 mile from their home

Again, it should be noted that there are no income restrictions associated with LEMs. Experience seems to indicate that the product to date has not been used to help provide affordable housing for lower-income people. Rather, its actual appeal appears to be more for moderate and middle-income buyers wanting to live in more upscale areas and who want to stretch their incomes to qualify for higher mortgages than would otherwise be possible.

Applicability to Wilmington

Based on the experience of the pilot cities to date, it appears as if a LEM program could be an additional tool to increase the marketability of residential real estate in the City of Wilmington.

Because the program seems particularly attractive to first-time homebuyers with incomes at 80 percent of median or above, it would complement existing first-time buyer homeownership programs sponsored by the City and State, which generally target homebuyers with incomes below this level.

Furthermore, first-time homebuyers considering purchasing a home in Wilmington often are lured instead to newly constructed townhouse units in Bear or Newark that are relatively affordable, but offer up-to-date features, such as multiple bathrooms, garages, a family room, and updated kitchens. It may be possible to design a LEM program in Wilmington that packages both the purchase mortgage and funds for remodeling along with technical assistance to encourage buyers to purchase in the City and upgrade the home at the same time. A LEM program could also be marketed by developers of new infill housing throughout the City.

It should be noted, that the savings associated with a LEM (the LEV), are largely related to the availability of shopping and services within close proximity to residential neighborhoods in a city as well as the frequency and convenience of transit service to those neighborhoods. Pedestrian access to goods and services in combination with pedestrian or frequent-service transit access to employment ultimately reduces the day-to-day reliance on automobile use. In other words, the value of this tool is directly related to the quality of the transit service, and the power of the program will be enhanced the more transit service is available.

Because transit service in Wilmington is limited to bus service, with somewhat extended off-peak-hour headways, and neighborhood shopping and services are sparse in many City neighborhoods, savings levels (LEVs) in Wilmington can be expected to be lower than the Chicago experience. Actual savings would vary from neighborhood to neighborhood, being highest in the areas within walking distance of downtown, and in true mixed-use areas such as Trolley Square.

Recommendations

- **Conduct a feasibility study to determine if the LEM would in fact be useful as a tool in Wilmington.** The study would also assist the City in making a case to Fannie Mae for a commitment to purchase LEMs. As outlined by the Institute for Locational Efficiency, the determination of feasibility involves four steps, or work tasks:

  - Form an interagency Steering Committee to guide the effort and a Technical Committee to administer and coordinate participation of public agencies, not-for-profit organizations and other interested parties in the process;
  - Determine essential community support for the program;
  - Compile data needed and construct a numerical model to estimate (preliminarily) potential LEVs for designated geographical areas; and
  - Analyze results and prepare the feasibility report.

ILE estimates the typical cost for an initial feasibility study is in the range of $20,000 to $25,000. The most critical factor in the assessment of feasibility is the availability and accuracy of data needed to construct the LEV model. Design and development of a complete LEM program reportedly ranges in cost between $130,000 and $230,000.

10.2 The Cincinnati Downtown Walk to Work Mortgage

The Cincinnati Downtown Walk to Work (DWW) initiative is a $5 million pilot recently announced by Fannie Mae as one component of a $9 billion "House Central and Southern Ohio" investment plan. The initiative was created as an incentive to encourage homeownership in downtown Cincinnati. As stated in a Fannie Mae news release on July 17, 2000 the program was specifically designed to "allow homebuyers in downtown Cincinnati to capitalize on reduced commuting costs in the form of extra cash to qualify for a new home". This pilot is the first such initiative undertaken by Fannie Mae.

Fannie Mae's Central and Southern Ohio Partnership Office is administering the program. The program is just one month old and no loans have actually closed as yet. However, there has been reportedly considerable interest in the community and a number of applications have already been submitted.

How the Cincinnati DWW Works

The Cincinnati DWW is a low down payment mortgage that takes into account savings realized in commuting expenses as the result of homebuyers living within walking distance of their place of employment. Commuting expenses considered include auto mileage, parking and public transportation costs. The calculated savings are added to the borrower's income and allow the buyer to qualify for a larger mortgage than they might otherwise be able to obtain.

A simple worksheet developed by Fannie Mae is used by the borrower and lender to calculate the amount of annual savings, which range from a minimum of $1,200 to a maximum of $4,800 for a borrower and co-borrower. All borrowers who qualify receive a minimum credit of $100 per month.

Like the Location Efficient Mortgage (LEM) there are no income restrictions with the DWW mortgage and loans are available up to $252,700. However, with the DWW borrowers must have a minimum down payment of five percent unless the loan is approved using Fannie Mae's automated underwriting technology, or the borrower qualifies for a loan under the Fannie Mae Community Lending Products.

The mortgage is only available to homebuyers who will purchase a home within a defined target area of downtown and walking distance (ten blocks) of their place of employment. Fannie May has agreed to purchase mortgages originated under the pilot program by selected lenders.

The participating lenders in Cincinnati are Bank One and Provident.

10.3 Other Walk to Work and Employer-Assisted Housing Programs

The Cincinnati DWW initiative is a unique product in that it allows the calculated savings in commuting expense to be added to the borrower's income in determining the amount of mortgage for which they might qualify. There are however, many programs scattered around the country where employees of cities, schools, hospitals and private corporations are being offered attractive incentives to entice people to buy homes and live in neighborhoods within walking distance of their place of employment or in targeted neighborhoods.

Fannie Mae has actively supported these programs through their Employer-Assisted Housing Program (EAH), and has participated in over 40 programs initiated by municipalities, non-profit organizations, universities, hospitals and private corporations. EAH programs have been established for public employees in such cities as Baltimore, MD; Charlotte, NC; Hartford, CT; and Boston, MA. Universities with EAH programs include the University of Pennsylvania, Princeton, the University of Maryland and Johns Hopkins. Two universities, Loyola in Chicago, IL and St. Norbert College in De Pere, WI, offer EAH programs for their faculty and staff that are billed as Walk to Work programs.

In addition, many private corporations have implemented EAH programs. Fannie Mae started its own EAH program in 1991, offering a forgivable loan to eligible employees. Since its origination more than 1,000 Fannie Mae employees have participated in the program. MBNA has a significant presence in Wilmington and they offer employer-assisted housing benefits to their employees, although Fannie Mae is not a participant in the program. The MBNA program consists of a simple $5,000 grant towards the purchase of a home located east of I-95 and between the rivers. The stipulations are that purchaser must live in the house for one year, own it for five, and work for MBNA for five years. Roughly 30 people have taken advantage of the program over the past two years.

How EAH Programs Work

EAH programs offer assistance provided by the employer that might include grants, low interest loans, loan guarantees, and/or forgivable second mortgages to assist in the purchase or improvement of homes in targeted areas. Typically, these programs involve a three-way partnership of the employer, participating private lenders and Fannie Mae. Fannie Mae works with the sponsor (employer) to help structure the program, identify and enlist preferred lenders, promote the program and provide homebuyer education. Of course, an important ingredient is Fannie Mae's commitment to buy mortgages originated under these programs.

The benefits of these programs can be significant for employees, employers and for the community. As outlined in Fannie Mae's informational material for EAH these benefits include:

For Employers:
- Highly effective recruiting tool
- Reduction of training and hiring costs
- Tax deductions on benefits
- Greater employee retention and loyalty
- Improved employee morale
- Goodwill in the community

For Employees:
- Realization of the dream of homeownership
- Enhanced lifestyle associated with homeownership such as greater community and school involvement and quality of life
- Increased job satisfaction and loyalty to the employer
- Reduced commuting time

For the community:
- Increase in tax base due to rise in homeownership
- Increase in business for local realtors and local businesses
- Greater community involvement due to increased homeownership
- Community revitalization tool
- Increased stability in the neighborhood

Applicability to Wilmington

Both the DWW and EAH programs could be valuable tools to encourage home ownership in the downtown and close in residential areas of Wilmington. The compact nature of the central business district and existing residential neighborhoods that are within walking distance of the business core, and where a quarter or more of all work trips were made by walking in 1990, lend themselves to such programs. Programs like these would also complement existing first-time buyer homeownership programs sponsored by the City and State. Moreover, these programs would be attractive to low and moderate-income residents as well as more affluent purchasers who might choose to live in the city. An added bonus is the presence in the City of strong financial institutions and corporations which may be willing to participate in such programs, given the benefits they stand to realize.

The flexibility of these programs would allow the City and local employers to design programs that would help the City achieve specific objectives such as making home ownership realizable for many more of its citizens, revitalizing downtown residential neighborhoods, increasing the tax base, and reducing the use of automobiles for commutation. These would also help private corporations to attract and retain quality employees as well as improve their standing in the community. As with the Location Efficient Mortgage (LEM) it may be possible to design programs in Wilmington that package both the purchase mortgage and funds for remodeling

along with technical assistance to encourage buyers to purchase in the City and upgrade the home at the same time. It could also be a useful marketing tool for developers of new infill housing.

Recommendations

- **Pursue both the Downtown Walk to Work Mortgage and Employer-Assisted Housing programs in Wilmington.** A review of programs where they have been implemented and discussions with representatives of Fannie Mae in their headquarters in Washington, DC and the regional office in Philadelphia indicate that there appears to be considerable potential for these programs in Wilmington. The City, through its Department of Real Estate and Housing, should take the lead in applying these programs in Wilmington.

  Fannie Mae representatives expressed willingness and a desire to assist in any way they can to help advance such initiatives in Wilmington. They are prepared to offer their services as a consultant and active partner to help the City, housing and economic development agencies, local institutions and private corporations where appropriate to design, implement and market such programs. They would also identify and enlist the cooperation of lenders who may be willing to participate.

Appendix A: Neighborhood Issues

This appendix has two purposes: (1) to set forth a series of informal observations regarding each neighborhood group, and (2) to record in greater detail the results of the community workshops.

Although a small city, Wilmington is home to a diverse and eclectic array of neighborhoods. Wilmington's neighborhoods range from areas such as Southbridge, struggling with abandonment and decay; to the old-money ambiance of Wawaset Park. Between these extremes, the majority of Wilmington residents live in middle and mixed-income communities, which, while still stable, are coping with a variety of urban issues including crime, demographic transitions, and an aging housing stock.

In order to more fully understand the issues in each neighborhood, and how these might relate to transit service, a series of neighborhood workshops were conducted. For the purposes of these workshops, the city was divided into six neighborhood groups based neighborhood borders, transportation corridors, and geographic features and barriers. In addition to these workshops, in depth field surveys were undertaken in each neighborhood, noting housing type and condition, commercial areas, and open space resources. Finally, past neighborhood planning documents—including the Empowerment Zone/Enterprise Community plan and Wilmington Initiatives meeting records—were reviewed for insight.

The six neighborhood groups were as follows:

1. The downtown neighborhoods, between I-95 and the rivers, as well as Southbridge. This area includes West Center City, Trinity Vicinity, Quaker Hill, Midtown Brandywine, the Eastside, the Upper Eastside, and Southbridge.
2. The area south of Lancaster Avenue and west of I-95. This area includes the neighborhoods of Browntown, Hedgeville, Bayard Square, and Union Park Gardens.
3. The area between Lancaster Avenue and Pennsylvania Avenue, west of I-95. This area includes Hilltop, Little Italy, Wawaset Heights, and Wawaset Park.
4. The area between Pennsylvania Avenue and the Brandywine Creek, west of I-95. This area includes Trolley Square, 40 Acres, and Rockford Park.
5. The area north of the Brandywine Creek and west of Market Street. This area includes the Triangle, the 9th Ward, Northwest, and Brandywine Hills.
6. The area north of Wilmington of the Brandywine Creek and east of Market Street. The Northeast neighborhoods here are less well defined, but include the public housing of Riverside and Eastlake, as well as the Price's Run community.

The following chapter is looks at the issues facing each of these neighborhood groups. For each neighborhood group, a thumbnail overview of the constituent neighborhoods is provided. This is followed a short list of planning and development issues, and then by brief synopsis of the accompanying neighborhood workshop.

A.1 Neighborhood Group 1

The downtown neighborhoods consist of three residential enclaves separated from each other by the major commercial portions of the downtown: West Center City, the Eastside, and Midtown Brandywine. Within these enclaves are even further divisions: Quaker Hill and Trinity Vicinity in West Center City, and the Upper Eastside which is distinguished from the remainder of the Eastside. The small neighborhood of Southbridge lies just over the 4th Street Bridge from the Eastside.

The downtown neighborhoods enjoy perhaps the best transit service, because almost all bus routes must pass through these neighborhoods in order to reach the downtown. Moreover, the compact size of the downtown means that most residents are a relatively easy walk from either Rodney Square or the train station, and can therefore catch almost any bus that serves Wilmington. Southbridge, on the other hand, is served by two bus lines, and is relatively isolated from the downtown.

The downtown neighborhoods are mostly composed of small row houses. The housing stock is quite old: as of 1990, the percentage of units built before 1939 was 46 percent on the Eastside, 57 percent in West Center City, and 28 percent in Southbridge (the concentration of public housing is responsible for the lower percentage in Southbridge). Because of the age of the housing, these units are typically small, lack modern conveniences such as multiple bathrooms, and offer small yards and no off street parking. However, these neighborhoods are also historic. Historic districts include the Old Swedes Church district on the Eastside, and the Quaker Hill historic district in West Center City. There are many charming streetscapes found in these neighborhoods.

Planning and development issues affecting this neighborhood group include:

- The relative isolation of each neighborhood enclave prevents the downtown neighborhoods from functioning as a cohesive whole. Positive developments on the Eastside, for instance, do not produce any benefits for West Center City, and vice versa.
- Large superblocks impede pedestrian movement between the Eastside and downtown. These pedestrian barriers will likewise hamper access to the Market Street Trolley for Eastside residents.
- There is a lack of a critical mass of population to support a locally-serving retail area in any one neighborhood. Rather, the retail strategy for these neighborhoods should be to combine their spending power to support a greater mass and variety of retail in the downtown.
- Southbridge is particularly isolated, not only from goods and services, but also from the rest of the City. The small number of households in this neighborhood, combined with the low incomes, means that Southbridge cannot support its own retail beyond perhaps a small convenience store or two. Rather, the goal should be to enhance both the pedestri-

an and transit access of Southbridge to the downtown, the riverfront, and other parts of the city, as well as suburban retail.

Neighborhood Meeting

This meeting was held in conjunction with a Neighborhood Planning Council meeting and drew residents of all four neighborhoods. The proportion of participants who were active transit riders was low, however. The following concerns were raised:

Neighborhood issues:

- Criminal activity, including drug dealing and vandalism
- Lack of maintenance in the parks and on the sidewalks
- A lack of youth-oriented activities and play spaces

Neighborhood Assets:

- Proximity to downtown.
- New housing development, particularly McCaulley Court
- Particularly charming portions of the neighborhood, including Trinity Vicinity on the west side; and 6th and 13th streets on the east side

Transit comments:

- There is a need for Sunday transit service. Destinations considered important include the malls—Concord, Christiana, Tri-State, and Brandywine Commons—as well as Corporate Commons, churches, and the riverfront.
- Other service improvement ideas included better and more readily available system information, particularly at Rodney Square; a one-week pass good for all modes; park-and-ride lots targeting reverse commuters.
- When asked why they don't use the system more, answers included the frequency of the service, long waits for transfers, mismatches with work schedules, and unreliability in inclement weather.

A.2 Neighborhood Group 2

This area can has two distinct characters. On either side of Maryland Avenue are found the row house neighborhoods of Browntown and Hedgeville. These areas abut the historic manufacturing areas that lined the railroad tracks and the riverfront—hence, the housing stock is dominated by two-story row houses originally built for industrial workers. Almost 60 percent of the housing stock was constructed prior to 1939. Compared with the city, income levels are lower but homeownership rates are higher, indicating that this neighborhood has undergone a lower level of turnover. In fact, half the households in this neighborhood had, as of 1990, lived in the neighborhood since before 1970, or more than 20 years.

The traffic and commercial artery bisecting these neighborhoods is Maryland Avenue. This street has shallow C-1 and C-2 zoning for much of its length. The lack of depth of the commercial zoning, along with small development sites, have resulted in a commercial character dominated by convenience stores, gas stations, and an eclectic mix of small businesses. Because of adjoining industrial buildings and sites, much of the commercial portion of the corridor is single-loaded, i.e., stores are found on only one side of the street. The corridor no longer functions well as a neighborhood shopping street, but neither is there an obvious opportunity to redevelop it for commercial uses oriented to the pass by traffic.

The Bayard Square and Union Park Gardens neighborhoods are of more recent vintage, with the bulk of the housing built during the 1940s and 1950s, when automobile ownership and suburbanization had begun to greatly expand. Accordingly, these neighborhoods exhibit a more suburban character, yet they are still considerably denser than typical suburbs, and sport a significant number of attached homes. This area is generally stable, with homeownership rates of around percent.

The commercial corridor adjoining these neighborhoods is Lancaster Avenue. This street is a major route into and out of Wilmington from the West. The commercial character varies considerable along its length. In the westernmost section, the street is dominated by auto-related uses and convenience retail serving an auto-based clientele. More neighborhood-scale retail uses are found in the area around Union and Lincoln Streets, which serve as a southerly extension of the Little Italy district to the north. A Sav-a-Lot discount bulk food store is found between Clayton and Broom streets. Other retail is confined to a smattering of smaller stores.

Planning and development issues affecting this neighborhood group include the following:

- There are inadequate vehicular and pedestrian connections to riverfront development. The only access is via Beech Street, which very narrow. This also affects the potential for transit access to the riverfront.
- Retail along Maryland Avenue is marginal and does not serve the surrounding neighborhoods well. With fewer than 2,000 households within walking distance, there is not enough market support for a full-service neighborhood corridor on Maryland—rather, retail needs should addressed through improved access to the riverfront and downtown, as well as some pedestrian upgrades on Maryland. The market for food stores is largely addressed by the large Super-Valu supermarket just over the city line at Robinson Lane.
- Lancaster Avenue also lacks for neighborhood-serving retail. This roadway also does not make for an attractive entryway into either the neighborhoods or downtown.

Neighborhood Meeting

This neighborhood meeting had originally been combined with Neighborhood Group 3, and the resulting extra meeting was therefore dominated by representatives of the Little Italy and

West 4th Street communities. Several major points were raised at the meeting:

- Little Italy would benefit from a circulator connecting the restaurant row with the downtown and riverfront attractions.
- Peak period buses on West 4th Street are often overcrowded.
- The neighborhood should be better connected with the Adams Four shopping center, which offers the closest full-service grocery.
- Snow clearance is a issue for the #8, due to the narrowness of the streets.
- A $3 – 4 "casual" ride service is helping to fill the transit gap from Adams Four.
- Sunday bus service is needed to the malls and the riverfront.
- Cab service is so bad as to be practically unusable.
- There are not enough crosswalks on West 4th. Traffic speeds are excessive on West 4th. The concentration seniors and children in the area argues for traffic calming.
- There is room for improvement in ethic acceptance on the part of some bus drivers.
- There are not enough shelters on West 4th.

A.3 Neighborhood Group 3

This area includes a wide diversity of neighborhoods, ranging from the modest row houses of Hilltop to the pastoral setting of Wawaset Park. The Hilltop neighborhood is home to Wilmington's greatest concentration of Hispanic residents. While much of the neighborhood fabric is stable, there are clear signs of disinvestment along West 4th Streets and some of the north-south streets, including Franklin, Harrison, and Van Buren. One issue fueling the disinvestment is crime. Like West Center City, the combination of an inner city location and proximity to a major highway has made Hilltop a magnet for drug dealing.

Median households incomes in the area east of Union Street are modest, ranging from $24,700 in 1990 to $27,600. Homeownership rates vary greatly, from a low of 31 percent to a high of around 61 percent. Wawaset Park area, which is in the same census track as the Rockford Park area to the north, is one of the wealthiest parts of Wilmington.

The Little Italy restaurant row on Union Street is home to Wilmington's largest concentration of restaurants. Once a popular destination, its popularity has started to decline in recent years, and restaurant energy has started to move downtown. This street is currently receiving a comprehensive streetscape upgrade, including new brick sidewalks, traffic calming features, and new lighting and banners. An important challenge is how to enhance and augment the impact of these capital investments.

Other assets of the neighborhoods include the open space resources provided by the many small parks, and Saint Francis hospital, which is a major employer and potential generator of business for West 4th and Union Streets.

Planning and development issues affecting this neighborhood group include the following:

- West 4th Street is the major east-west route running through the neighborhood and connecting with downtown. The street is currently experiencing problems with crime including drug dealing on certain corners. The retail along West 4th consists of a mix of locally-serving convenience retail and stores that are likely located there for the low rent. Unlike some other older commercial corridors, the relatively high population densities along the corridor should help support more retail than currently exists. This street is targeted for a Wilmington Initiatives upgrade in the near future, which should help enhance some of the latent market potential.
- The Union Street restaurant row is home to Wilmington's largest restaurant district, yet it is not well linked with other attractions in Wilmington, either physically or through marketing. The one-way street pattern on Lincoln and Union, coupled with the difficult intersection of Union with Pennsylvania, hampers vehicular access to the street. The soon to be completed streetscape upgrades should help bolster the image of Union Street—yet it will still be necessary to undertake other promotional activities in order to maximize the return on this infrastructure investment.

Neighborhood Meeting

The neighborhood meeting was held in conjunction with a Neighborhood Planning Council meeting and was well attended. Both regular transit riders and non-riders were represented. Public comments included the following:

Walking Environment:

- No turn on red restrictions on certain streets should be considered
- Better pedestrian crossings are needed on Pennsylvania Avenue; re-stripe crosswalks
- There should be better enforcement of pedestrian right-of-way
- A signal and crosswalk between 8th and 9th Street on King Street is needed

Transit:

- More benches are needed, but they should be designed to prevent sleeping
- The Route 8 bus is too large for 8th and 9th streets
- Bus stops should consume as few parking spaces as possible
- Snow removal on bus routes needs to be improved
- Stops need to be well lighted, particularly those with trees or shelters
- Advertisements on shelters would be OK, but not in historic district, and only with content controls—no "trash" ads
- Better service is needed to churches and malls on Sunday

Weekend and Sunday Service:

- The service should serve the malls, Routes 6 and 202

- Saturday service is very unreliable
- Last bus from Route 202 is at 7 PM—too early for workers or for teenagers
- Need a "city circuit" style service for mall and funscape
- There should be a cultural loop bus
- A "Fun Saturday" bus could connect recreational destinations on weekends, and could be used to promote events and attractions

A.4 Neighborhood Group 4

This area represents one of the most successful areas of Wilmington. The Trolley Square/40 Acres neighborhood, as the densest neighborhood, has been able to sustain the liveliest mixed-use environment in the City. With a variety of both homeownership and rental opportunities, the neighborhood has increasingly become the choice of white-color professionals seeking to reside within the City, close to downtown but with an established residential character. While car ownership rates are reasonably high, and the population is mid- to upper-income, the density and mixed-use character of the neighborhood make it an idea place to attract discretionary transit riders. Transit can provide a very short commute time, without the hassle of finding and paying for parking.

The area to the west, along Bancroft Parkway and by Rockford Park, is one of the most affluent neighborhoods in Wilmington. This area is much less dense, and is characterized by larger homes located on substantial lots. This area has excellent access to open space resources. The lower densities, high incomes, and purely residential character of this area makes it less amenable to transit use, although a few people can be expected to ride for the same reasons as listed above.

Planning and development issues affecting this neighborhood group include the following:

- The Pennsylvania Avenue corridor is largely inhospitable to pedestrians. Many intersections lack appropriate crosswalks.
- The area is home to a large senior population housed in high-rises located throughout the neighborhood. This population requires and an additional level of transit service, especially during off-peak periods.
- Much existing commercial development in Trolley Square is in the form of suburban shopping plazas, with the parking lot facing the street and the buildings set back behind the parking. Pedestrian connections between the sidewalk and the front doors of these shops should be improved, to the benefit of both transit riders and neighborhood residents.
- As two of Wilmington's most successful neighborhoods, there is little need for, or possibility of, significant change to the built form or scale of either neighborhood. Planning should be instead focused on the details that make for livable urban streets.

Neighborhood Meeting

The meeting was held at the Luther Towers and attracted a large proportion of senior citizens. The following issues were raised:

- Sunday service is strongly desired. Sunday destinations include Route 202, church, and restaurants.
- Some drivers do not pull the bus to the curb, are reluctant to kneel the bus, and are occasionally rude to seniors.
- Several complaints related to stops. There are not enough shelters, and the shelters are too small. The stop does not directly serve Luther Towers. The nearest stop to the VA hospital is 300 yards away, and there is no shelter.
- Cabs will not make short trips from places like Luther Towers to Trolley Square. It is impossible to get a cab on Sundays or late at night, and difficult other times.
- The buses don't run on schedule on Saturdays. Transfers can be lengthy.
- The ice rink may impede transfers at Rodney Square.
- Rodney Square does not feel secure after dark.

A.5 Neighborhood Group 5

The area stretching west of North Market includes the stable middle-class neighborhood of Baynard Boulevard/Triangle, the upscale neighborhood of Brandywine Hills, and the less stable areas around Concord Pike and North Market. Many parts of this neighborhood group are facing an uncertain future, and should be considered "at-risk." Transit and planning strategies can play a vital role in helping the neighborhood swing in the direction of stability and renewal.

About half of the neighborhood is zoned R-2 for semi-detached buildings, and another half is zoned for one-family row houses. Nearly half of the housing was built prior to 1939. Baynard Boulevard is a handsome residential street framed by large single-family homes. Along Concord Avenue and North Market Street housing tends to be row houses. Homeownership rates range from a low of 38 percent south of Concord Avenue and west of Washington, to around 70 percent north of Concord Pike and west of Washington.

The major commercial artery running along on side of the neighborhood is North Market Street. While the southernmost blocks of this street provide an attractive shopping environment, conditions quickly deteriorate to the north. The area north of 30th Street the street loses its pedestrian orientation and continuous streetwall, and becomes increasing characterized by auto-related uses and free-standing stores such as the Rite Aid. There is also a recently cleared development site in this area. A large Superfresh supermarket is located at the northern end of North Market, at the corner with Lea Boulevard. This supermarket offers the best food shopping in the city limits.

Planning and development issues in this neighborhood group include:

- North Market Street is not serving its adjoining residential areas as a good neighborhood shopping street. With fewer than 3,000 households located within an easy walk of North Market south of 30th Street, there is insufficient market support for a retail corridor of this length. In some areas, the attractive quality of the street suggests an opportunity to supplement the walk-in trade with pass-by traffic. In other areas, it may be necessary to encourage through zoning the gradual conversion of buildings and lots to residential uses. The planned Wilmington Initiatives upgrades to North Market Street will have a beneficial effect for the street's merchants.
- Concord Avenue has small clusters of retail that add little to the community, including two liquor stores and a gas station. The zoning boundaries do not correspond to the actual extent of the commercial uses. As discussed later, liquor stores and gas stations should be prohibited from locating off of commercial streets.
- A similar problem is found at the intersection of West Park Drive and Washington Street, although most of these uses are abandoned. The commercial zoning here should be replaced with residential.
- The intersection of Concord Avenue with Baynard Boulevard is confusing and hazardous for both vehicles and pedestrians.
- Issues of crime and other nuisances are having a destabilizing effect on neighborhoods near North Market Street that otherwise are not heavily impacted by blight or abandonment. Quick action should be taken to ensure that these areas do not decline further.

Neighborhood Meeting

The meeting for this neighborhood was held at Haring House and attracted a high proportion of senior citizens. The following concerns were voiced:

- There should be Sunday service to the malls.
- On-time performance is basically good, but Saturday service is unreliable.
- There should be a direct connection from the northern neighborhoods to the Riverfront.
- The all-day pass should be better publicized.
- More bus stops should have shelters.
- Not all buses kneel, and some drivers are reluctant to kneel them.
- Street geometries sometimes do not allow the drivers to pull the bus out of the travel lane.

A.6 Neighborhood Group 6

This area contains Wilmington's largest concentration of public housing, and is accordingly one of the poorest sectors of the City. The larger of the two public housing communities is Riverside, located east of Northeast Boulevard. This development accounts for most of the housing on this side of Northeast Boulevard, save for a small collection of small row houses

just north of 12th Street. The other public housing community, Eastlake, is located across Northeast Boulevard adjacent to Brown, Burton and Winchester Park. This development has been targeted for a HOPE VI reconstruction. Directly to the north of Eastlake is a small enclave of neatly maintained row houses. Additional row house enclaves are found in the northern end of the sector.

Northeast Boulevard is a major arterial running through the area. Northeast Boulevard connects directly with I-495 north of Wilmington. Although a wide, 4-lane thoroughfare, traffic along this street is light during except for rush hours. In spite of its physical attributes, this road has apparently lost its value for retailing. Vacancies are rampant both in Wilmington and in shopping plazas to the north. The fact that the corridor runs through some of the poorest areas in Wilmington has no doubt contributed to the decline.

The many negative issues facing the northeast neighborhoods are tempered by the existence of a significant open space and recreational resource located in the middle of the area—Brown, Burton and Winchester Park. This is a large, well maintained and attractive park which includes play areas, ball fields, and a swimming pool. Access to this park is important for all the residents of the Northeast, including Riverside, which further emphasizes the need for improved pedestrian connections along Northeast Boulevard.

Planning and development issues in this neighborhood group include:

- The loss of retailing energy along Northeast Boulevard has resulted in a large amount of unused and underutilized land along the corridor. A rethinking of the zoning along this arterial may be in order.
- Northeast Boulevard also provides a very poor pedestrian environment, even though it is surrounded by high concentrations of households with no vehicle. Safe pedestrian crossings are hard to come by, and as a result mid-block crossings in the midst of traffic are a frequent occurrence.
- The presence of C-5 heavy commercial and M-1 manufacturing districts invites the development of more intense uses that must be reconciled against their proximity to residential neighborhoods. On the other hand, industrial business could be a valuable source of jobs, and the reinvigoration of the Todds Lane industrial park is a goal of the Empowerment Zone plan. The width of Northeast Boulevard and its access to I-495 make it favorable as a truck route.
- The closing of the grocery store at Northeast and 12th Street has left a prominent vacancy in an important site. While a grocery store is likely not viable in this location, due to the lack of local population, a drugstore might do well here, especially given its location at an important entry and exit point from the downtown.
- The planned HOPE VI reconstruction of the Eastlake public housing community provides an opportunity to more up-to-date design standards to the new development. At issue is

the need to connect the housing to three different environments—the row house neighborhood to the north, the large park to the west, and Northeast Boulevard to the east. A key consideration is how to use the redevelopment to knit these areas together into a more cohesive whole.

Neighborhood Meeting

The following concerns were raised:

- Sunday service is needed to provide access to Church, Work and Shopping.
- Not all buses kneel, and some drivers are reluctant to kneel those that do.
- Some drivers accelerate before everyone has had a chance to sit.
- The #1, 2 and 6 buses are sometimes overcrowded.
- Important work sites to serve include Route 202, Christiana Hospital, DuPont Highway, Route 40, and all three malls.
- Bus service ends before the malls close.
- Waiting and boarding areas are inaccessible when it snows. Some stops are in areas where the sidewalks are too narrow.
- Bus stops with security issues include North Market and 23rd, North Market and 24th, and stops in front of schools.
- A stop should be located in front of every senior and disabled residence.