

# **DOWNTOWN WILMINGTON TRANSPORTATION STUDY**

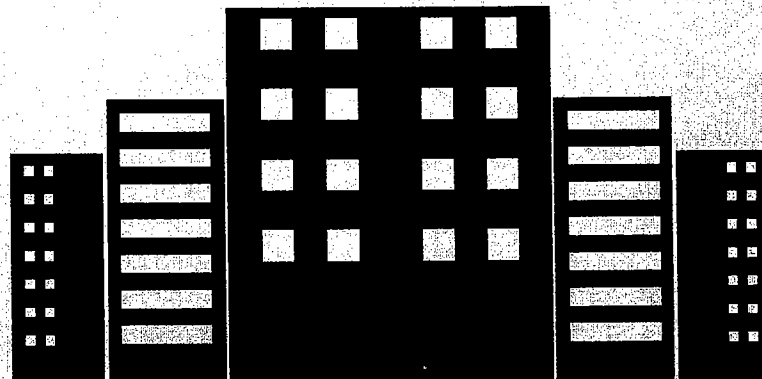
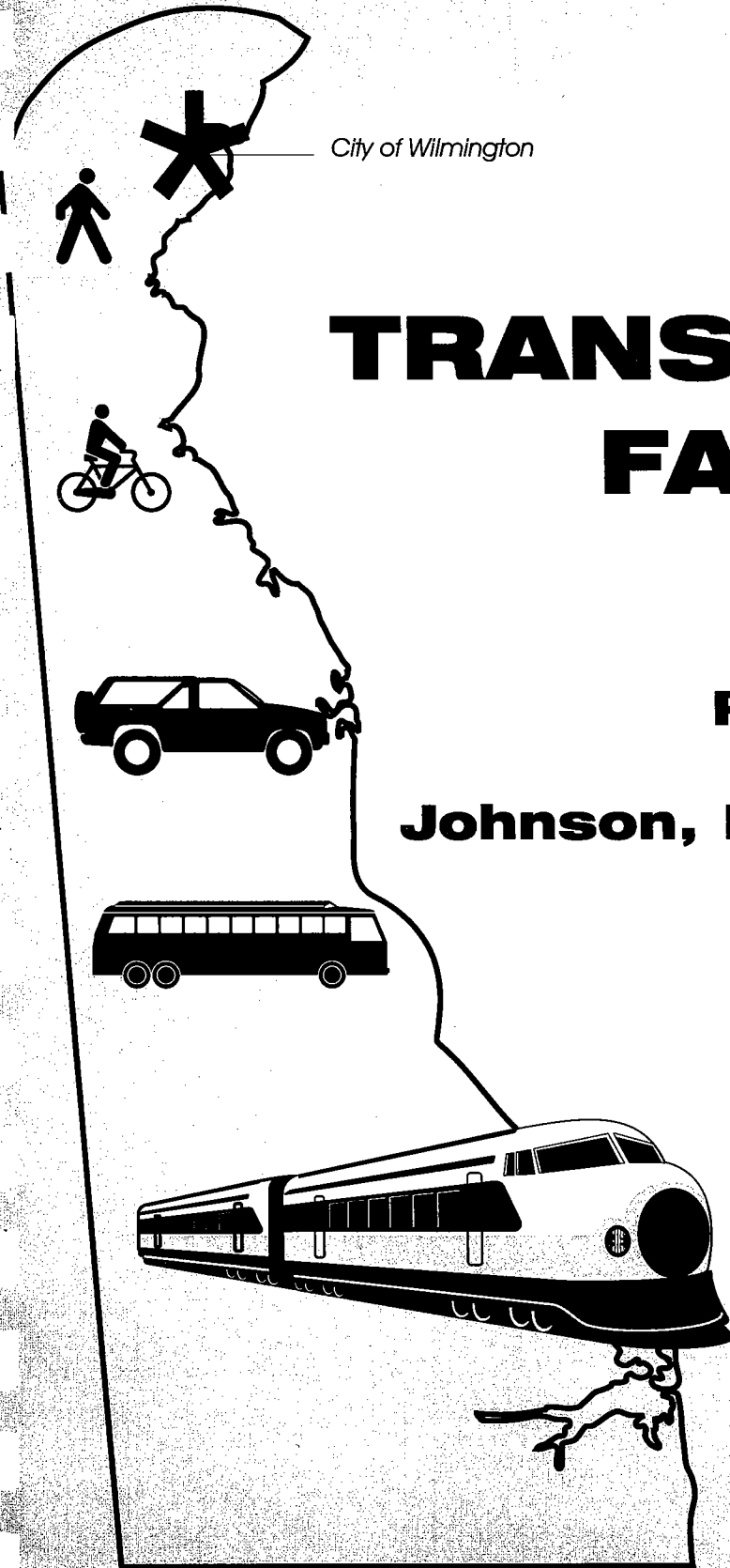
*City of Wilmington*

## **TRANSPORTATION FACT BOOK**

**Prepared by:**

**Johnson, Mirmiran & Thompson**

**JUNE 25, 1996**



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# Introduction

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*This transportation fact book is a summary of data collected to date as part of the Downtown Wilmington Transportation Study. The data included in this book is serving as a foundation for the process of formulating recommendations for the improvement of transportation facilities throughout the Downtown Wilmington area.*

***The Transportation Fact Book outlines the following:***

- **Project Purpose and Goals**
- **Examples of Transportation Headaches**
- **Existing Pedestrian Facilities**
- **Existing Bicycle Facilities**
- **Existing Traffic Patterns**
- **Existing Bus Facilities**
- **Existing Rail Facilities**
- **Summary of Meetings**
- **List of References**

*The most critical element in evaluating each mode of transportation is the interconnectivity of each mode with other modes of transportation.*

## Project Purpose and Goals

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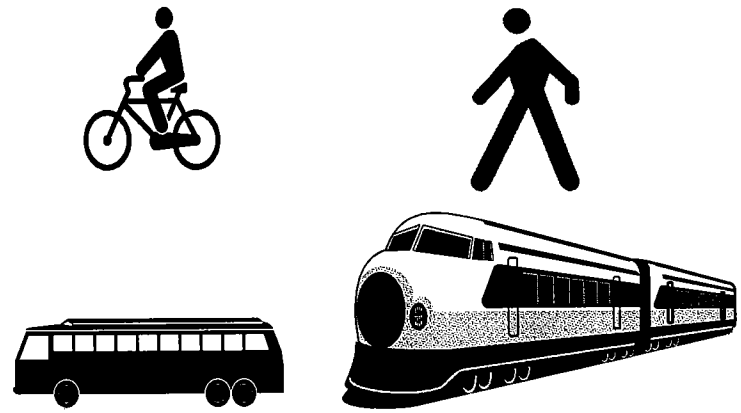
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**The Downtown Wilmington Transportation Study is the initial project in the series of studies referred to as "The Wilmington Studies". These studies represent a comprehensive effort, lead by an agency team representing the City of Wilmington, The Delaware Department of Transportation (DelDOT), and the Wilmington Area Planning Council (WILMAPCO). *The overall goals of the Downtown Wilmington Transportation Study are:***

- 1. To Promote Economic Development***
  - 2. To Improve the Physical Environment for Business Workers and Residents***
  - 3. To Enhance Accessibility to, and within the Downtown in Support of other Stated Goals.***
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The purpose of the study is to assess and analyze the current condition of the transportation system in the downtown area. The study focuses on all modes of transportation including: **rail, mass transit, automobile, bicycle, and pedestrians**. The study aims to present recommendations that improve **efficiency** and **quality** of transportation in the downtown area while allowing for the safe and efficient movement of people and goods.



## **EXAMPLES OF TRANSPORTATION HEADACHES:**

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- **ON AVERAGE, IT IS FASTER TO WALK FROM THE TRAIN STATION TO MBNA THAN TO TAKE THE DOWNTOWNER.**
  - **A BICYCLE COMMUTER IN THE DOWNTOWN WILL NOT ENCOUNTER A SINGLE BICYCLE LANE OR BICYCLE ROUTE SIGN.**
  - **A MOTORIST TRAVELLING NORTHBOUND ON MARKET STREET FROM THE MALL TO RODNEY SQUARE MUST GO 15 BLOCKS OUT OF THEIR WAY TO MAKE THE 4 BLOCK TRIP.**
  - **AN EMPLOYEE OF DUPONT WHO WALKS HOME TO TROLLEY SQUARE MUST CROSS 5 LANES OF TRAFFIC WITHOUT ANY PEDESTRIAN PROVISIONS AND VAULT OVER A CONCRETE BARRIER TO THE SIDEWALK.**
  - **MLK BOULEVARD PROVIDES EXCESS CAR CAPACITY FROM I-95 TO THE DOWNTOWN, WHILE PROVIDING POOR LOCAL ACCESS TO DEVELOPMENT, SEVERS THE LINK BETWEEN THE DOWNTOWN AND THE WATERFRONT, AND DISSUADES PEDESTRIANS AND BICYCLES..**
  - **A MOTORIST TRAVELLING WESTBOUND ON 5TH STREET MUST GO 7 BLOCKS OUT OF HIS WAY AROUND THE "SUPER BLOCK" TO CONTINUE OF 5TH STREET.**
  - **A WEEKEND STROLLER IN BRANDYWINE PARK WHO WANTS TO TO GO TO THE CHRISTIANA RIVERFRONT AREA, WOULD NOT FIND A DESIGNATED CONNECTION.**
  - **A VISITOR TRAVELLING SOUTH ON WASHINGTON STREET, TO A BLUE ROCKS GAME, MAY FIND HIMSELF UNEXPECTEDLY ON I-95 HEADING OUT OF THE CITY WITHOUT ANY WARNING.**
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## Existing Pedestrian Facilities

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The downtown Wilmington Area presents a wide variety of facilities for pedestrians. JMT received specific information from the City of Wilmington on sidewalk widths throughout the study area. Subsequent field investigations by JMT have revealed a varied environment for pedestrians ranging from very comfortable, well landscaped streetscapes, to areas with no sidewalks at all. ✓

Pedestrian crossing facilities at intersections throughout the downtown area are infrequent and inconsistent in their function. Motorists often have a green light to proceed with a right or left turn while pedestrians also have a signal to walk.

Areas of prime concern for pedestrian movement include the area immediately surrounding the train station, the circulation around the major office buildings downtown, and the Market Street pedestrian mall. ✓

*A number of elements combine to form a comfortable and safe pedestrian environment in the urban environment, including:*

- ◆ *Buffers from Traffic*
- ◆ *Articulation of Vertical and Horizontal Space*
- ◆ *Trees and Landscaping*
- ◆ *Amenities such as Streetlighting, Benches, Trash Receptacles*
- ◆ *Well defined and signaled crossings of streets*

Specific areas within the Downtown area illustrating this variety of pedestrian environments are shown in the photographs on the following pages.



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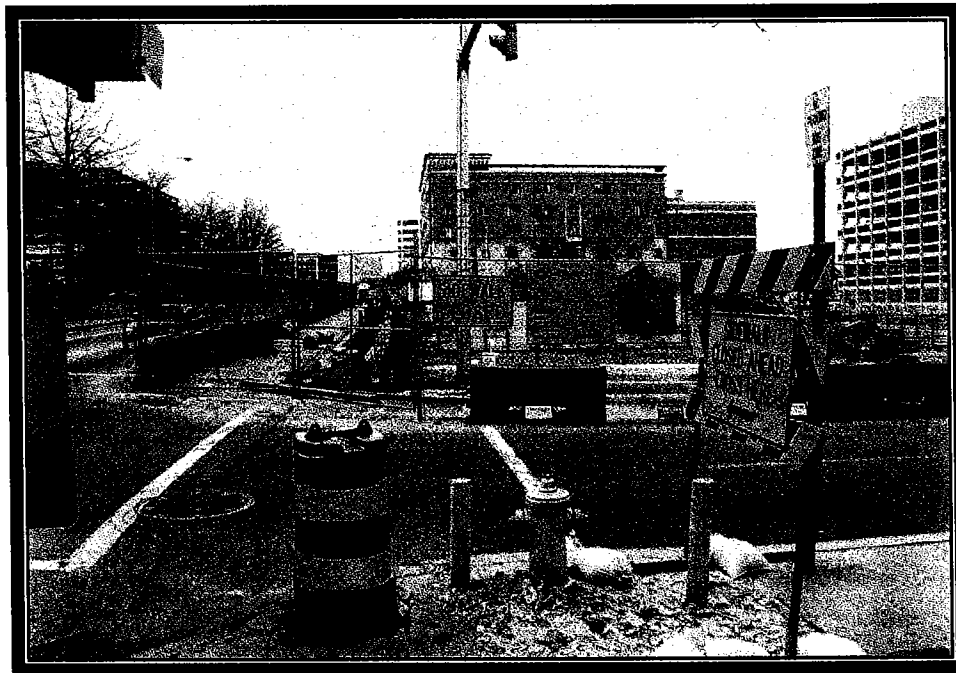
## Existing Pedestrian Facilities

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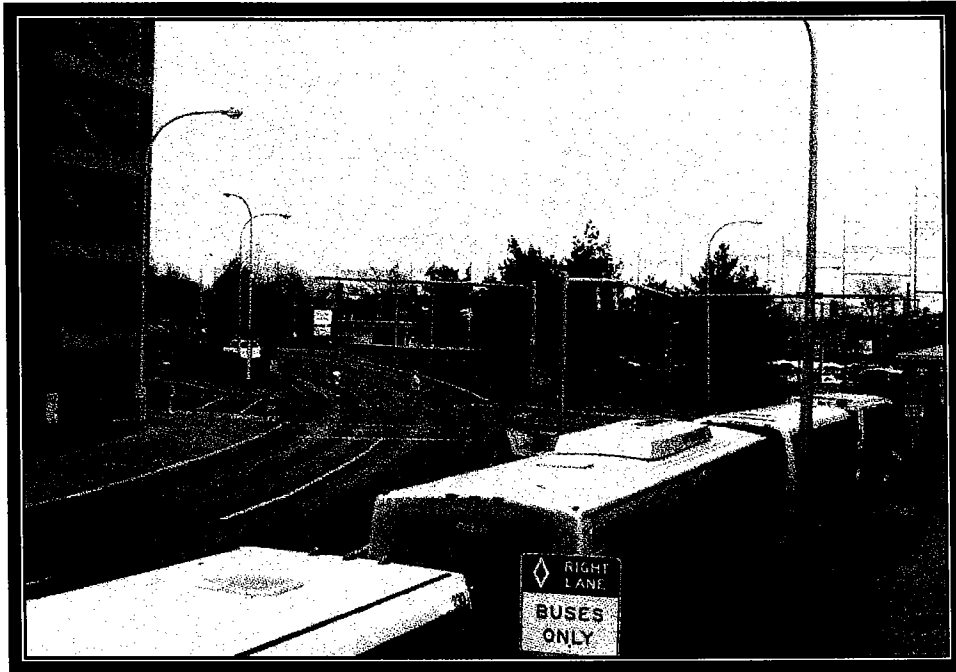
**The following existing conditions with regard to the Pedestrian Facilities were noted in JMT's field investigations:**

- MLK Jr. Boulevard presents a barrier to the riverfront as pedestrian facilities and crossings are dangerous.*
- Numerous intersections have no pedestrian signals despite pedestrian volumes and traffic volumes warranting signals.*
- Pedestrian crossing at the intersection of 12th Street, Delaware Avenue, and Madison Avenue is extremely dangerous.*
- In general, designs of parking garage exits and entrances do not address pedestrian safety.*

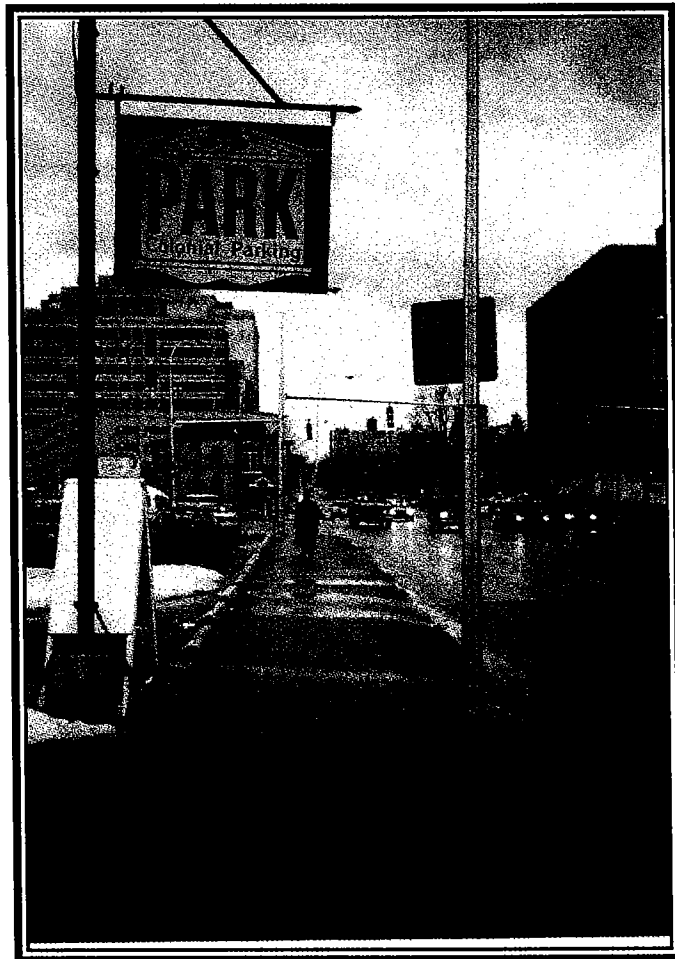


***Construction at 11th Street and West Street creates potentially dangerous and confusing circumstances for pedestrians.***

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***Pedestrian Crossings around the train station are unfriendly***



***No buffers, no landscaping, no articulation of space; poor facilities for pedestrians***

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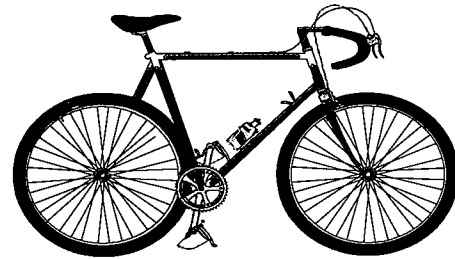
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# Existing Bicycle Facilities

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*The Downtown Wilmington area currently contains very limited facilities for commuters using bicycles.*



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**In 1994, Orth-Rodgers analyzed roadways throughout the City of Wilmington for suitability as bicycle routes. The study examined:**

- *Posted speeds*
- *Road width*
- *Number of lanes*
- *Presence of absence of painted shoulders*
- *Traffic Volumes*
- *Presence of absence of on-street parking*

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**Based on the above criteria, streets were rated as **PREFERRED**, **SECONDARY**, or **LESS DESIRABLE** as bicycle routes.**

Within the Downtown Wilmington area, three portions of roadways were ranked as **PREFERRED BIKE ROUTES**. They include the following:

- *Lovering Ave. West of Adams*
- *Baynard Boulevard Bridge over Brandywine Creek*
- *Park Drive from Adams St. to West St.*

Four sections of roadway were determined to be **SECONDARY BIKE ROUTES**:

- *Adams St. from Lovering Ave. to Park Drive*
- *West St. from 13th St. to Park Drive*
- *13th St. from Washington St. to West St.*
- *14th St. from Washington St. to West St.*

Three roadways were designated as **LESS DESIRABLE** Bicycle Routes:

- *Washington St. from 13th St. to the Baynard Blvd. Bridge*
  - *9th St. throughout the study area*
  - *8th St. throughout the study area*
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## Existing Bicycle Facilities

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The Bicycle Route Map prepared by DeIDOT designates four suitability categories for Bike Routes. These include **PRIMARY**, **SECONDARY**, **DANGEROUS** and **SCENIC**. The routes are defined as follows:

**PRIMARY ROUTES** - *Light to medium motor vehicle traffic, good shoulder areas, and are used by local bicyclists on a regular basis.*

**SECONDARY ROUTES** - *Above medium motor vehicle traffic, good or poor shoulder areas, and are used with extra caution by local bicyclists.*

**DANGEROUS ROUTES** - *Heavy to extremely heavy motor vehicle traffic or poor shoulder areas and are not usually used by local bicyclists.*

**SCENIC ROUTES** - *Primary routes with good scenery or views.*

**THERE ARE NO PRIMARY OR SCENIC ROUTES DESIGNATED WITHIN THE DOWNTOWN STUDY AREAS!**

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The Bicycle Route Map prepared by DeIDOT in 1994 designates a number of **SECONDARY** bike routes throughout the downtown area.

- 11th St. from Washington St. to King St.
- 12th St. from Washington St. to Walnut St.
- Washington St. from 11th St. to the Baynard Blvd. Bridge
- Park Drive from Washington St. to West St.
- West St. from 13th St. to Park Drive
- 13th St. from Washington St. to West St.
- King St. from 11th St. to South Market St.
- Walnut St. from 12th St. to 5th St.
- 5th St. from Walnut St. to Pine St.

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**The DeIDOT Map designates the U.S.13 Routes across the Christina River as DANGEROUS.**

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Contacts with the Northern Delaware Greenways Commission have indicated that the Northern Delaware Greenway is planning to proceed from the northern suburbs down Baynard Boulevard, across the Brandywine Creek Bridge and into the Downtown area. Additional connections are planned into the Downtown area along the Christina Riverfront. At this time it is not clear as to the exact location of bicycle facilities, if any, along the riverwalk.

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# Existing Traffic Patterns

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**Traffic counts were conducted throughout Wilmington's Central Business District, and JMT determined Average Daily Traffic (ADT)\* for the streets to study the city's traffic patterns.**

**The ADTs' indicate traffic distribution in the Downtown Area district varies greatly between streets. Certain streets such as Martin Luther King Boulevard and King Street act as the primary routes for traffic. Other roadways like Tatnall Street and 6th Street carry a much lower volume of traffic.**

*\*The ADTs' represent the typical daily traffic volume on a street. For a two way street, the ADT is the sum of traffic in both directions for a twenty-four hour period.*

**The ADT volumes of various Wilmington streets were analyzed. Current traffic patterns show that approximately 80% of all north/south traffic is concentrated on four roads (King Street, Walnut Street, Orange Street and Adams Street) and approximately 50% of the east/west traffic is concentrated on five roads (Martin Luther King Boulevard, Delaware Avenue, 4th Street, 11th Street and 12th Street).**

**ADTs' for several roadways in Baltimore and Philadelphia were investigated to provide a comparison with similar major roadways in Downtown Wilmington. The traffic capacity of the Wilmington Street system is controlled by the ability of signalized intersections to handle major street traffic. Presently, signals within the city are not coordinated meaning additional delay occurs along the major streets. The comparison revealed that the roadways within Wilmington contain excess capacity which is not being utilized properly. A review of the existing signalized intersections revealed that a few of the intersections are new capacity while 70% of the intersections are under 50% utilized.**

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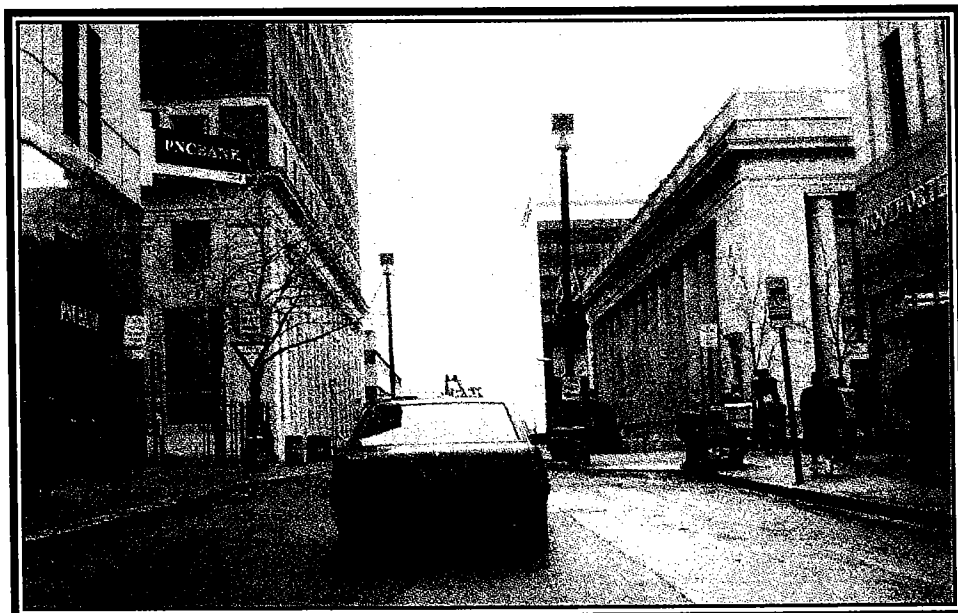
## Existing Traffic Patterns

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Various aspects of traffic operations in Wilmington have been identified, which are either trouble spots or inconsistencies in the street system. They include:

- ◆ Confusion is created for motorists traveling on Delaware Avenue at the Eleventh Street split.
- ◆ Nearly two dozen inconsistencies in the existing road system such as road closures, opposing traffic and adjacent roads in the same direction. Examples of this include:
  - *Four streets, Madison Avenue, Windsor Street, Jefferson Street and Wollaston Street are all adjacent northbound streets.*
  - *Market Street north of Ninth Street is southbound only, and south of Ninth Street is northbound only.*
  - *Sixth Street and Seventh Street both run eastbound.*
- ◆ The PM peak at King Street north of 2nd Street backs-up.
- ◆ Traffic progression through 11th Street at Washington Street is slow.
- ◆ Motorists are unable to get from the downtown area to the Blue Rocks Stadium easily.
- ◆ Inconsistent sign, signal type, and placement causes confusion for visitors to the downtown.
- ◆ Less than 50% of the Southbound roadways connect to MLK Jr. Boulevard



*Example of roadway inconsistency which creates confusion for motorists*

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# ADT Wilmington Streets

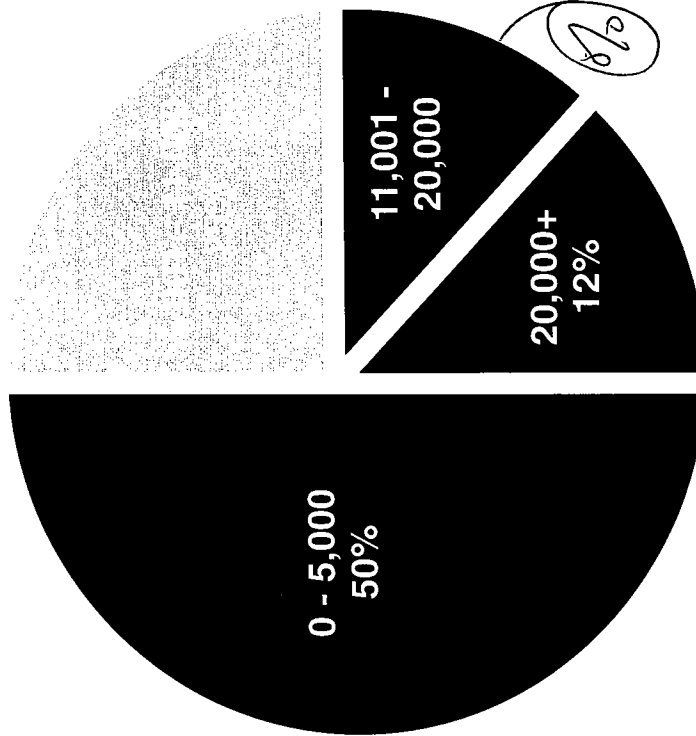
## Streets

Streets	ADT
Monroe Street	
3rd Street	
15th Street	
Madison Street	
14th Street	
6th Street	
5th Street	
Tatnall Street	
Jefferson Street	
Market Street	
7th Street	
West Street	
8th Street	
Shipleigh Street	0 - 5,000
13th Street	
10th Street West	
French Street	
9th Street	

11th Street	Adams Street Middle
MLK Blvd, East (EB)	16th Street
Washington Street, South	12th Street East
Orange Street	Walnut North
Delaware Avenue Middle	
	5,001 - 11,000

Washington Street North	Adams Street
10th Street East	King Street North
4th Street	2nd Street
	11,001 - 20,000

12th Street West	MLK Blvd Middle (WB & EB)
King Street South	Delaware Avenue West
Walnut Street South	
	20,000+



## LEVEL OF SERVICE

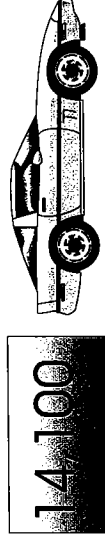
LEVEL OF SERVICE	2	4	6
A	5,200	10,500	15,700
B	7,500	15,000	22,500
C	9,300	18,600	28,000
D	11,200	22,500	33,750
E	15,000	30,000	45,000

# ADTs for Familiar Roadways

Martin Luther King Jr. Blvd.  
Wilmington (4 lanes)



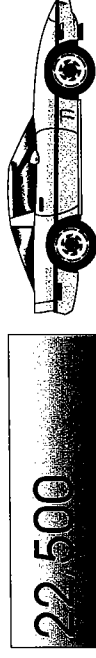
Broad Street, Philadelphia  
(2 lanes)



Delaware Ave., Wilmington  
(3 lanes)



Walnut St., Wilmington  
(5 lanes)



Charles St., Baltimore  
(4 lanes)



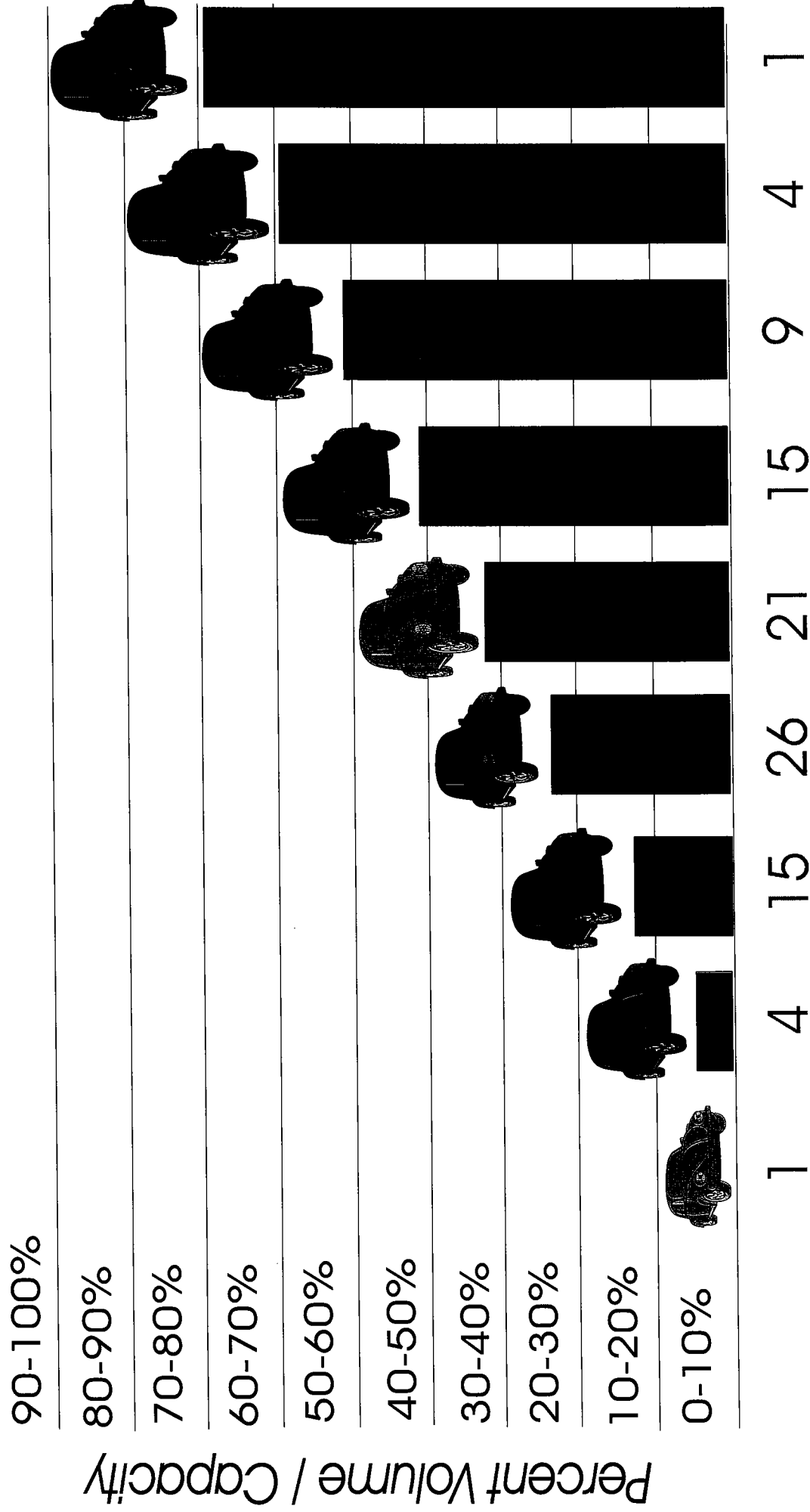
Pratt St. Baltimore  
(6 lanes)



Baltimore Beltway (I-695)  
(6 lanes)



# PERCENTAGE OF VOLUME / CAPACITY FOR SIGNALIZED WILMINGTON INTERSECTIONS



*Number of Signalized Intersections*

\* Note: Total Number of Signalized Intersections = 96

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## Existing Bus Facilities

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Downtown Wilmington is provided Transit service by the DART First State System. The System currently has its major bus transfer center in the Downtown area at Rodney Square. Additional inter-city bus service is provided by Peter Pan with the existing Inter-city bus terminal located on King Street across from the Train Station.



**DART buses currently provide service along:**

- *King Street*
- *Walnut Street*
- *Orange Street*
- *Washington Street north of Delaware Avenue*
- *Martin Luther King Jr. Boulevard*
- *Delaware Avenue*
- *11th Street*
- *4th Street*

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DART also operates the downtowner shuttle service for patrons circulating within the downtown core area. This free service operates on an average of every 20 minutes.

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- *There are 18 bus stops within the downtown area, with over 100 daily boardings and alightings which do not have any amenities.*
- *Citizens have expressed concern over environmental conditions in Rodney Square since the creation of a bus transfer center*
- *Dart and the downtowner limit their service to primarily five (5) roadways.*
- *The train station and bus transfer center are approximately 3/4 of a mile apart.*

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## Existing Rail Facilities

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One of the greatest assets to the transportation system in downtown Wilmington is the direct connection to the Northeast corridor rail system at the Wilmington Train Station. The station provides commuters access to both Amtrak and SEPTA service. Business commuters from Downtown Wilmington have easy access to the Baltimore/Washington Corridor to the south and the Philadelphia/New York/Boston Corridor to the north.

The station itself has undergone renovations recently, and planning is in process now to redesign the site circulation around the station as a study separate from this study.

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# Summary of Meetings

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Numerous studies have been conducted over the past years focusing on improvements to the Downtown Wilmington area. The following sheet indicates those studies most recently conducted. These studies have been reviewed and utilized as a starting point for the development of the Downtown Wilmington Transportation Study, which commenced in December of 1995. The Wilmington Transportation Study is the first in a series of tasks to implement improvements throughout Downtown Wilmington. After the completion of the Wilmington Transportation Study, the East Side Design Projects will begin, followed by the West Side Design Projects, the Signage Program for Downtown and Adjacent Districts, and finally the Economic and Land Use Assessment.

Since the Wilmington Transportation Study has commenced, a variety of data has been collected. The purpose of the data collection is to identify existing facilities and assess transportation conditions in the downtown area. Numerous meetings have been conducted to discuss the results of the data collection, and identification of deficiencies. Potential solutions are now being tentatively explored through the Steering and Technical Committees as well as public meetings. The meetings have included representatives from the general public, local politicians, the City of Wilmington, WILMAPCO, DeIDOT, DTC, Riverfront Development Corp., AMTRAK, DART First State, Wilmington Parking Authority, and the consultants involved in the Wilmington Studies.

A chronological order of the major meetings held to date is indicated below:

<i>February 7, 1996</i>	<i>Technical Committee Meeting</i>
<i>February 8, 1996</i>	<i>Steering Committee Meeting</i>
<i>March 1, 1996</i>	<i>Management Meeting</i>
<i>March 14, 1996</i>	<i>Mangement Meeting</i>
<i>March 27, 1996</i>	<i>Transit Center Coordination Meeting</i>
<i>April 19, 1996</i>	<i>Project Alternatives Workshop</i>
<i>April 25, 1996</i>	<i>Technical Committee Workshop</i>
<i>May 7, 1996</i>	<i>Wilmington Transit Center Workshop</i>
<i>May 7, 1996</i>	<i>Project Alternatives Workshop</i>
<i>June 3-6, 1996</i>	<i>MLK Design Charette</i>
<i>June 19, 1996</i>	<i>MLK Coordination Meeting</i>

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# List of References

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1. **Draft - Regulatory & Management Recommendations  
City-Wide Environmental Enhancement Plan (LDR) December, 1995 With Maps**
  2. **The Old City Historical /Horticultural Plan and the Five Year City-Wide Horticultural  
Plan April, 1994 City of Wilmington Dept. of Planning**
  3. **Dart System Map 1994 Edition**
  4. **Threshold Capacity Analysis - A Transit Analysis of the Wilmington Central  
Business District - Callow and Associates, Inc.**
  5. **Retail Strategy Study - Downtown Wilmington  
Technical Memorandum: Completion of Phase I of Study**
  6. **Downtown Wilmington in the 90's - Status and Strategy  
Prepared for the Dept. of Commerce - City of Wilmington  
by Legg Mason Realty Group, Inc. May 1990**
  7. **Christina Gateway Impact Area - Development Strategy - Preliminary Report  
September, 1992**
  8. **Downtown Development Strategy - Preliminary Report September, 1992**
  9. **Western Gateway Study Area: A Transportation Analysis of the Wilmington Central  
Business District - City of Wilmington Office of Planning  
Callow Associates, Inc.**
  10. **Christina Gateway Impact Area - Development Strategy and Action Plan  
Executive Summary June, 1990 Hammer Siler George Associates**
  11. **Implementing a Vision for the Rivers - Final Report June, 1995  
Governor's Brandywine and Christina Rivers Transition Team**
  12. **Draft - Transportation Improvement Program - Fiscal Years 1997-1999  
WILMAPCO January 18, 1996**
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