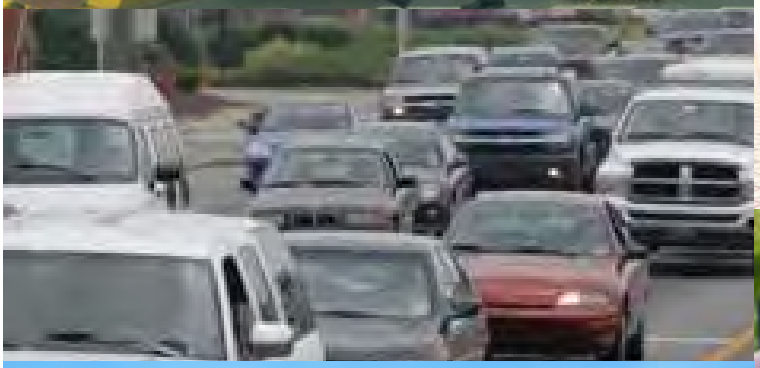
Dover/Kent County RTP

Regional Transportation Plan Update

Adopted January 28, 2009

Dover/Kent County MPO
Metropolitan Planning Organization



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DOVER/KENT COUNTY
METROPOLITAN PLANNING ORGANIZATION

REGIONAL TRANSPORTATION PLAN: A LONG RANGE TRANSPORTATION PLAN FOR 2030

Adopted January 28, 2009

Prepared by the
Dover/Kent County Metropolitan Planning Organization

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Dover/Kent County MPO
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RESOLUTION BY THE DOVER/KENT COUNTY METROPOLITAN PLANNING ORGANIZATION ADOPTING THE 2009 UPDATE TO THE REGIONAL TRANSPORTATION PLAN

WHEREAS, the Dover/Kent County Metropolitan Planning Organization (Dover/Kent County MPO) as designated by the Governor of the State of Delaware, is the Metropolitan Planning Organization (MPO) for Kent County, Delaware, including those portions of Smyrna and Milford located in contiguous counties; and

WHEREAS, the federal regulations require a long range Regional Transportation Plan (RTP) be adopted and updated at least every four years and, as may be necessary, amended by resolution of the Dover/Kent County MPO Council; and

WHEREAS, Dover/Kent County MPO, per federal regulations, by quantitative analytic methodology, has found the RTP to be air quality conforming, as mandated by the federal Clean Air Act, as Amended; and

WHEREAS, the Dover/Kent County MPO, in the development of the RTP, per federal regulations, has, at a minimum, considered the seven (7) metropolitan planning factors mandated by the federal Safe, Accountable, Flexible, Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU); and

WHEREAS, the Dover/Kent County MPO, in the development of the RTP, per federal regulations, has found the RTP to be financially reasonable; and

WHEREAS, the development process of the RTP followed, at a minimum, the prescribed policies and practices set forth in the officially adopted Dover/Kent County MPO Public Participation Plan, which in turn meets or exceeds all federal requirements for public participation;

NOW, THEREFORE, BE IT RESOLVED, that the Dover/Kent County MPO Council does hereby adopted the ***Dover/Kent County Metropolitan Planning Organization 2009 Update of the Regional Transportation Plan for 2030.***

DATE: 1/28/09

Bradley S. Eaby, Chairperson
Dover/Kent County MPO Council

JSW:crs

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TABLE OF CONTENTS

Acknowledgements i

1. Introduction 1-1

1.1 Plan Background 1-1
1.1.1 Relationship of the RTP Update to the Kent County Comprehensive Plan 1-1
1.1.2 Strengthening the Linkages between Transportation and Land Use 1-3
1.1.3 Complete Streets 1-4
1.1.4 Transportation Improvement Districts (TIDs) 1-4
1.1.5 Transit-ready development 1-5

1.2 Overview of the Planning Process and Plan Update 1-5
1.2.1 Federal Planning Factors 1-6
1.2.2 Air Quality Analysis 1-6
1.2.3 State Strategies for Policies and Spending 1-7
1.2.4 Livable Delaware 1-9
1.2.5 Corridor Capacity Preservation Program 1-10
1.2.6 Local Comprehensive Plan Updates 1-10
1.2.7 Travel Demand Modeling 1-11
1.2.8 Relationship between Vision, Themes, Goals, Objectives, Strategies, Actions 1-13

2. The Vision 2-1

2.1 2030 Vision – "Moving Forward Together" 2-1

2.2 Themes, Goals, Objectives 2-1

3. Current Transportation System Overview 3-1

3.1 Roads and Bridges 3-1
3.1.1 Functional Classification 3-3
3.1.2 Surface Type and Lane Width 3-5
3.1.3 Pavement Conditions 3-6
3.1.4 Bridges and Bridge Conditions 3-7
3.1.5 Evacuation Routes 3-8
3.1.6 Operations 3-11
3.1.7 Safety 3-12

3.2 Public Transportation 3-14
3.2.1 DART First State South District 3-15
3.2.2 Paratransit Services 3-19
3.2.3 Intercity and Intercounty Bus Service 3-20
3.2.4 Get-a-Job Get-a-Ride Program 3-21
3.2.5 Other Value-Added Services 3-21
3.2.6 Public Transportation Ridership 3-21

3.3 Ridesharing 3-22

3.3.1 RideShare Delaware 3-22
3.3.2 Park-and-Ride/Pool Lots 3-23

3.4 Bicycle and Pedestrian Facilities 3-25
3.4.1 Overview of Types of Facilities 3-25
3.4.2 Bicycle and Pedestrian Planning 3-29
3.4.3 Design of Facilities 3-30
3.4.4 Safety 3-31

3.5 Passenger and Freight Railroads 3-32
3.5.1 Freight Rail Lines 3-32
3.5.2 Freight Rail Yards and Transfer Facilities 3-35
3.5.3 Passenger Rail 3-35

3.6 Aviation 3-36
3.6.1 Civil Air Terminal (CAT) at Dover Air Force Base 3-37
3.6.2 Delaware Airpark 3-37
3.6.3 Other Aviation Facilities 3-37

3.7 Marine 3-40

4. Trends and Implications on Future Transportation Needs 4-1

4.1 Population and Employment Trends 4-1
4.1.1 Total Population 4-4
4.1.2 Age 4-4
4.1.3 Households 4-5
4.1.4 Employment 4-6

4.2 Goods Movement 4-7

4.3 Automobile Ownership 4-8

4.4 Vehicle Miles Traveled (VMT) 4-9

4.5 Daily Traffic Volumes (AADT) 4-10

4.6 Mode Choice 4-10

4.7 Through, Regional, and Local Trips 4-11

4.8 Travel Trends and Customer Satisfaction/Public Opinion 4-11
4.8.1 Travel Trends 4-11
4.8.2 Customer Satisfaction Survey/Public Opinion 4-13

4.9 Existing Land Use 4-14
4.9.1 Current Land Use Situation 4-16

4.10 Land Use Trends and Analysis of Growth Scenarios 4-18

4.11 Land Use Scenarios 4-18

4.12 Assessing Future Transportation Needs 4-19
4.12.1 Travel Demand Analysis 4-20
4.12.2 Travel Demand Analysis Methodology 4-20
4.12.3 Projected Travel Conditions 4-20
4.12.4 Alternatives Analysis 4-21
4.12.5 Future Transportation Needs Summary 4-26

4.13 Conclusions 4-26

5. Transportation Strategies and Actions: 2009 – 2030 5-1

5.1 RTP Framework 5-1
5.1.1 Fundamental Strategies 5-1
5.1.2 Kent County Comprehensive Plan 5-2
5.1.3 Strategies for State Policies and Spending 5-3
5.1.4 Comparison with other state agency plans 5-8

5.2 Detailed Discussion of Strategies and Actions 5-11
5.2.1 Fundamental Strategy 1: Preserve and Maintain Existing Transportation System 5-11
5.2.2 Fundamental Strategy 2: Improve Management of Existing System 5-13
5.2.3 Fundamental Strategy 3: Develop and Expand Other Modes of Transportation 5-16
5.2.4 Fundamental Strategy 4: Provide Additional System Capacity 5-20
5.2.5 Fundamental Strategy 5: Focus Transportation Investments 5-24

5.3 Project Prioritization 5-29

6. Paying for the Transportation Plan 6-1

6.1 Availability of Funding 6-1
6.1.1 Federal Funding Sources 6-5
6.1.2 State Funding Sources 6-6
6.1.3 Local Funding Sources 6-6
6.1.4 Private Funding Sources 6-7

6.2 Cost of the Proposed Transportation Improvements 6-7

6.3 Funding Cost Comparison 6-7

7. Conformity Analysis 7-1

7.1 Overview 7-1

7.2 Methodology 7-2
7.2.1 Travel Demand Modeling 7-2
7.2.2 Emissions Factor Model 7-8
7.2.3 Mobile Source Emissions 7-8

7.3 Mobile Source Emissions Data 7-8

7.4 Conclusions 7-9

8. Implementation of the Plan 8-1

8.1 SAFETEA-LU Compliance 8-1
8.1.1 Year-of-Expenditure Dollars 8-4
8.1.2 Environmental Mitigation 8-5
8.1.3 Visualization 8-5
8.1.4 Summary 8-6

8.2 The Planning Process for Specific Projects 8-7

8.3 Staging the Improvements 8-8

8.4 Updating the Plan 8-8

Appendix A: Travel Forecasting A-1

Appendix B: Air Quality Conformity B-1

Appendix C: Glossary C-1

Appendix D: Population and Household Estimates by TAZ..... D-1

Appendix E: Project Lists..... E-1

Appendix F: Summary of Public Outreach and Comments..... F-1

LIST OF EXHIBITS

Exhibit 1.1: State Strategies for Policies and Spending for Kent County 1-8

Exhibit 1.2: Transportation Planning Process 1-12

Exhibit 1.3: RTP Strategies 1-13

Exhibit 2.1: RTP 2030 Vision 2-5

Exhibit 3.1: Roadway Route Miles and Density by County (2006) 3-1

Exhibit 3.2: Kent County Roadway Mileage by Functional Classification (2006) 3-2

Exhibit 3.3: Kent County Roadways 3-2

Exhibit 3.4: Roadway Functional Classification by Route Miles and Vehicle Miles Traveled (VMT) 3-4

Exhibit 3.5: Functional Classification Map 3-5

Exhibit 3.6: Kent County Lane Width by Functional Classification (2007) 3-6

Exhibit 3.7: Pavement Conditions Thresholds 3-7

Exhibit 3.8: Pavement Conditions Trigger Values 3-7

Exhibit 3.9: Pavement Conditions in Kent County, 2006 3-7

Exhibit 3.10: Kent County Bridge Inventory (1999 – 2007) 3-8

Exhibit 3.11: Delaware Bridge Inventory (2000 – 2006) 3-8

Exhibit 3.12: Kent County Evacuation Routes 3-10

Exhibit 3.13: City of Dover Signalization Improvements 3-12

Exhibit 3.14: Kent County Motor Vehicle Crashes by Injury Severity (1990-2006) 3-12

Exhibit 3.15: Percent of Total Fatalities by Person Involved (2006) 3-13

Exhibit 3.16: Number of HSIP Sites by Year (2002-2005) 3-14

Exhibit 3.17: Areas within One-Quarter Mile of Existing Transit Service 3-15

Exhibit 3.18: Kent County Fixed-Route Operating Statistics (2002-2007) 3-17

Exhibit 3.19: DART First State Transit Routes 3-18

Exhibit 3.20: DART's Dover Transit Routes 3-19

Exhibit 3.21: Kent County Paratransit Operating Statistics (2003-2007) 3-20

Exhibit 3.22: Kent County Intercity Operating Statistics (2003 – 2007) 3-20

Exhibit 3.23: Kent County and Statewide Passenger Trips (2003-2007)..... 3-22

Exhibit 3.24: Kent County Park-and-Ride and Park-and-Pool Facilities (2000)..... 3-23

Exhibit 3.25: Map of Kent County Park-and-Ride and Park-and-Pool Facilities 3-24

Exhibit 3.26: Designated Statewide and Regional Bicycle Routes in Kent County..... 3-26

Exhibit 3.27: Kent County Bicycle Facilities Map..... 3-27

Exhibit 3.28: Roadways with Sidewalks, Kent County, 2000..... 3-28

Exhibit 3.29: Type of Pedestrian Facility 3-28

Exhibit 3.30: Sidewalks, Footpaths, and Crosswalks in Kent County..... 3-29

Exhibit 3.31: Kent County Pedestrian and Bicycle Traffic Crash Data..... 3-31

Exhibit 3.32: Kent County Percent of Total Crashes Resulting in Fatalities 3-32

Exhibit 3.33: Freight Rail Lines 3-34

Exhibit 3.34: Delaware Passenger Rail Study – Proposed Alternative Routes..... 3-36

Exhibit 3.35: Summary of Public Use Airports..... 3-38

Exhibit 3.36: Airports..... 3-39

Exhibit 4.1: 2005 Population Density..... 4-2

Exhibit 4.2: Census County Divisions..... 4-3

Exhibit 4.3: Population Projections by CCD..... 4-4

Exhibit 4.4: Population Projections..... 4-4

Exhibit 4.5: Dover/Kent County MPO Population by Age Group as Percentage of Total Population..... 4-5

Exhibit 4.6: Dover/Kent County MPO Population and Household Size 4-6

Exhibit 4.7: Dover/Kent County MPO Employment Growth 4-6

Exhibit 4.8: Dover/Kent County MPO 2030 Employment Density..... 4-7

Exhibit 4.9: Average Number of Vehicles per Household by Year for Kent County 4-9

Exhibit 4.10: Kent County VMT Growth..... 4-9

Exhibit 4.11: AADT and Percent Change, 1990-2006..... 4-10

Exhibit 4.12: Kent County Travel Mode Choice..... 4-11

Exhibit 4.13: Average Trips per Person per Weekday by Year 4-12

Exhibit 4.14: Average Trips per Person per Day by Age Grouping 4-12

Exhibit 4.15: Average Trips per Person per Day by Type of Area 4-12

Exhibit 4.16: Trip Time in Minutes by Year 4-13

Exhibit 4.17: Satisfaction Level by Transportation Type (2006) – General Transportation User Survey 4-14

Exhibit 4.18: Satisfaction Level by Transportation Type (2006) – Transit-Served Market Area Survey 4-14

Exhibit 4.19: Existing Land Use 4-15

Exhibit 4.20: Kent County Existing Land Use (2002) 4-16

Exhibit 4.21: Areas with Shifts in Population 4-19

Exhibit 4.22: 2005 Level of Service 4-22

Exhibit 4.23: 2030 "Base" Scenario Level of Service 4-23

Exhibit 4.24: 2030 "Shift" Scenario Level of Service 4-24

Exhibit 4.25: Level of Service Change between 2030 "Base" and "Shift" Scenarios 4-25

Exhibit 4.26: Number of Miles with LOS E and F 4-26

Exhibit 5.1: State Strategies for Policy and Spending 5-4

Exhibit 5.2: Proposed State Resource Areas in Kent County 5-9

Exhibit 5.3: Two-lane Suburban Roadway with Shoulder and Multi-use Path 5-18

Exhibit 5.4: Kent County Bicycle Map 5-19

Exhibit 5.5: List of 2009-2012 TIP Projects 5-20

Exhibit 5.6: List of Recommended Projects and Studies 5-21

Exhibit 5.7: Transportation Improvement Districts 5-25

Exhibit 5.8: Guidelines for Transit Feasibility 5-27

Exhibit 5.9: Potential Transit Corridors 5-28

Exhibit 5.10: Scoring Matrix 5-29

Exhibit 6.1: Statewide Total Authorizations (in thousands of dollars) 6-1

Exhibit 6.2: FY 2006-2008 Capital Transportation Program Summary of Authorizations (in thousands of dollars) 6-2

Exhibit 6.3: FY 2006 Statewide Capital Transportation Program Authorizations 6-3

Exhibit 6.4: Dover/Kent MPO Planning Funding.....6-3

Exhibit 6.5: Major Sources of Transportation Revenue in Delaware (in millions of dollars) FY 2001-2007 6-4

Exhibit 6.6: MPO-Specific Funding (in thousands of dollars).....6-4

Exhibit 6.7: RTP Period Distribution of Projected Funds 6-8

Exhibit 6.8: RTP Period Projects 6-8

Exhibit 7.1: Included Projects 7-3

Exhibit 7.2: Emissions Data.....7-9

Exhibit 8.1: SAFETEA-LU Federally-Required Planning Factors 8-3

Exhibit 8.2: SAFETEA-LU Federally-Required Emphasis Areas 8-4

Exhibit 8.3: Relationship of the Regional Transportation Plan Update to SAFETEA-LU ..8-6

Exhibit A.1: Travel Demand Model Coverage.....A-4

Exhibit A.2: Traffic Analysis Zone Coverage A-5

1. Introduction

1.1 Plan Background

This Dover/Kent County Metropolitan Planning Organization (MPO) Regional Transportation Plan (RTP) Update serves to update the existing transportation plan adopted May 4, 2005, and forms the basis of the Mobility Element of the Kent County Comprehensive Plan. Through these efforts, the MPO, in partnership with the Delaware Department of Transportation (DelDOT) and the public, continues to coordinate transportation planning and investments to support future land use changes anticipated in Kent County over the next 25 years.

This RTP update was created through a collaborative process involving state, county, and local officials, as well as public input. To coordinate with the update of the Kent County Comprehensive Plan, which Kent County Levy Court adopted on October 7, 2008, the RTP update was launched in late 2006, two years after the previous plan was completed. The updated plan reflects changes in demographics as well as regional goals, objectives, policies, strategies, and projects. This RTP also was updated to comply with the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), a federal law that authorizes the federal surface transportation programs for highways, highway safety, and transit for the five-year period of 2005 through 2009. The RTP's proposed date of adoption is January 28, 2009, with consequent development of the MPO's Transportation Improvement Program in March, 2009.

By law, urbanized areas with a population greater than 50,000 must have an MPO. MPOs are mandated to develop long-range transportation plans (LRTPs), including a prioritized Transportation Improvement Program (TIP), plus programs, projects, and monitoring efforts. An LRTP is a comprehensive strategy for transportation and development in a region and is required by the U.S. Department of Transportation (USDOT) as a prerequisite for federal funding. The Dover/Kent County MPO's LRTP, the RTP, is a strategic planning tool providing a blueprint for integrating transportation, land use, and Livable Delaware strategies to help define and prioritize transportation programs and projects.

1.1.1 Relationship of the RTP Update to the Kent County Comprehensive Plan

This RTP update confirms the common vision set forth in the MPO's 2005 plan *"Moving Forward Together,"* and is supported by revised plan goals and objectives. These guiding principles are confirmed through an assessment of the current transportation system, trends and implications for future transportation needs, and a list of actions to be implemented during the 2005 to 2030 time period.

Funding for the recommended actions is described in a financial plan. This means that the projects programmed for the first four years of the RTP (2009 through 2012) reflect funding that is currently projected to be available through 2012. This first four-year segment of near-term projects is known as the Transportation Improvement Program (TIP). Funding for actions scheduled for years 2013 through 2030 is based on public and private sources that are reasonably expected to be available during that time period. The revenue and cost

estimates for the recommended actions use an inflation rated to reflect "year of expenditure" dollars.

Additional projects the MPO desires, for which funding is not expected to be available, are included in an "aspirations" list and will only advance when additional funding becomes available. These projects will likely be considered in future plans.

The MPO's first LRTP was adopted in 1996. In 2001, the plan was updated through 2025. In 2004, an interim plan extending the planning horizon to 2030 was adopted to comply with federal laws on air quality. The 2004 interim plan supplemented the 2025 plan and served as a companion document until the 2030 update in 2005. This 2008 document constitutes the transportation plan for the region through January of 2030.

Since the completion of the previous RTP in 2005, several initiatives and areas of focus have emerged specific to Kent County that further support the common vision that was prepared for the 2005 plan. The concept of relating transportation and land use continues to be a more visible and important consideration when selecting projects that will impact quality of life for current and future generations. As described in the 2008 Kent County Comprehensive Plan, land use, growth management, and transportation planning are inextricably linked. As such, the MPO, county and DelDOT continue to partner with other state agencies to better coordinate transportation and land use decision-making. This long-recognized relationship will continue to play an important role in informing infrastructure investment decisions in Kent County and statewide.

The Kent County Comprehensive Plan Update focuses on specific opportunities and challenges facing the county and assesses how those trends are likely to impact future growth and preservation. These areas include:

- Population and Demographics
- Land Use
- Community Design
- Community Facilities
- Transportation
- Economic Development
- Housing
- Natural Resources
- Agriculture
- Historic Preservation
- Intergovernmental Coordination

The Comprehensive Plan examines current conditions, articulates goals, and describes actions to achieve those goals. The document examines all elements of Kent County listed above and summarizes them into how the county intends to develop and invest over the next 25 to 30 years. Excerpts from this RTP update were used to prepare the Mobility Element chapter of the 2008 Kent County Comprehensive Plan.

1.1.2 Strengthening the Linkages between Transportation and Land Use

Continual population growth, expansion of development into lightly-developed areas farther from municipalities, and higher rates of automobile ownership are three primary factors that have led to noticeable increases in traffic congestion and related impacts in Kent County and the United States, which affect quality of life. While building new roads and widening highways can provide some initial congestion relief, such measures are expensive, have environmental and community impacts, might encourage further undesirable growth patterns, and rarely solve congestion problems over the long term. Therefore, rather than continued, widespread expansion of roadways, planning practices such as "sustainability," "right-sizing," and "smart growth" have emerged as ways to counter the unmanaged land development pattern commonly referred to as sprawl. Sustainable development trends also help reduce greenhouse gas emissions. Transportation has a large role in realizing the benefits of these sound planning practices.

Sustainable development is not just "smart," it is essential in order to accommodate growth in ways that will support economic development while maintaining the county's cultural and natural resources without bankrupting its citizens. In a broad sense, sustainability is viewed as an approach to planning that focuses on the long term — essentially, using long-term strategies to best meet present and future needs. In finding this balance, a number of factors are considered, including:

- Preserving quality of life.
- Protecting the natural environment.
- Preserving rural character and farming traditions.
- Growing in a compact manner to preserve open space, clean air, and community appeal.
- Taking advantage of existing investments in transportation and sewers.
- Fostering citizen involvement.
- Providing economic opportunity for citizens.
- Understanding and shifting away from polluting and wasteful practices.

When planning for the future, these factors can be applied during planning, design, construction, and operation of the transportation system. Some examples of incorporating sustainability include:

- Increasing collaboration between transportation agencies and other entities responsible for land use, environmental protection, and natural resource management to foster more integrated transportation-land-use decision-making.
- Reconstructing facilities in highly vulnerable locations to high design standards.
- Providing redundant power and communications systems to ensure rapid restoration of transportation services in the event of failure.
- Treating wastewater and runoff in a long-term environmentally-responsible way.
- Using alternatives to road salt and roadside herbicide treatments for weeds that are less harmful to the environment.
- Fostering growth in less environmentally sensitive areas.

The concept of sustainable development is inherent to the plan's vision, themes, goals, and objectives discussed in Chapter 2.

Coordinated land use and transportation planning requires the participation of all stakeholders. Kent County, the MPO, the county's 20 municipalities, DelDOT, and the State of Delaware must be committed to growth in a coordinated manner. These entities need to work together so that land development complies with state land use policies and investment strategies while reflecting local goals and objectives. Understanding the transportation-land-use connection in a local, multi-municipal, and county-wide context is critical in determining the extent to which DelDOT will be able to provide future transportation facilities and services to ensure mobility and economic viability. To that end, three new concepts/policies are included in this plan — Complete Streets, Transportation Investment Districts and Transit-Ready Development.

1.1.3 Complete Streets

Roadways are the primary means by which people travel from one place to another, but historically, many roadways have been built with only automobile users in mind. As a consequence, many streets and highways actually act as an impediment to travel by other means such as walking, bicycling, or transit. Further, streets that are solely automobile-oriented often result in environments that are not conducive to the formation and preservation of quality, livable neighborhoods; business districts; and recreational areas.

The concept of "complete streets" is for roadways to be designed and operated with all users in mind. While there is no single design or "recipe" for what complete streets should look like, such roadways should provide safe access and quality environments for not only motorists, but also pedestrians, bicyclists, and public transit users. Users of all ages and abilities should be able to move safely along and across a complete street. Complete streets can be achieved by requiring that all user groups be considered when new streets are constructed, when existing streets are expanded, or through the redesign of existing streets with the primary objective of increasing their usefulness for additional user groups. Establishing street design standards that meet the objectives of the complete streets concept is also financially responsible, as it avoids the need to later retrofit existing streets to accommodate all users.

Many states have passed laws requiring their DOT to include bicycling and walking facilities in all of its urban-area projects. While no such law exists in Delaware, encouraging the development of complete streets is a priority for the MPO and county.

Further explanation on recommended actions for complete streets is provided in Chapter 5.

1.1.4 Transportation Improvement Districts (TIDs)

The County Comprehensive Plan also introduces the concept of Transportation Improvement Districts (TIDs) to geographically show the developing areas where the transportation system must be integrated with land use and significant investment in the transportation system is required. In the 11 TIDs that are currently identified, Kent County, DelDOT, the MPO, and the community will develop a plan for transportation improvements including road upgrades, interconnection of local roads, and bicycle and pedestrian facilities. The intent of these districts is to create a transportation network where

residents can rely upon interconnected local roads for everyday needs, including work, school, and recreation. TIDs in Kent County are intended to be drivable, walkable, safe and comfortable, with part of the corridors able to accommodate future transit service.

Additional discussion on how TIDs will be used to focus transportation investments can be found in Chapter 5.

1.1.5 Transit-ready development

Transit-oriented development and transit-ready development are two similar concepts which differ by whether or not transit is already present in the community. While transit-oriented development, or TOD, is built around existing transit stations or corridors, transit-ready development prepares for future transit service with neighborhoods and road networks designed for maximum efficiency of all transportation modes.

Development centered around transit is typically built in a more compact manner, within easy walking distance of transit stations (on average a quarter mile) that contains a mix of uses such as housing, jobs, shops, restaurants, and entertainment. Similar to TOD, transit-ready development is planning for development that can easily be served by and will be ready to take advantage of the markets created by future transit service.

Strategies for transit-ready development also address how new development in greenfield or existing suburban sites can be adjusted to incorporate transit-friendly concepts. The MPO advocates that new development be designed in a way that allows for future transit accessibility by identifying proposed future corridors for fixed route transit.

The benefits of well-planned transit-ready development are that it creates compact, walkable communities, with direct access to transit. Transit-ready development also interacts with other concepts discussed in this plan such as Complete Streets and Transportation Improvement Districts.

Key elements of transit-ready communities include:

- A mix of land uses and diversity of housing types, putting services in easy reach of residents;
- Pedestrian-friendly layout with sidewalks buffered from traffic by planting strips with street trees;
- Appropriate locations and routes for transit factored into future plans;
- An "urban" street grid (providing plenty of connections rather than cul-de-sacs);
- Public facilities designed as transit destinations.

1.2 Overview of the Planning Process and Plan Update

This update to the RTP reviews the assumptions and priorities developed and adopted in 2005. The content and focus of this update is similar to the 2005 plan and previous versions, continuing to incorporate key planning principles and policies, along with associated strategies and actions to be pursued by the MPO, DelDOT, and planning partners over the life of this plan.

1.2.1 Federal Planning Factors

Both the Mobility Element of the County Comprehensive Plan and this RTP update have been developed to comply with federal and state laws, rules, and policies intended to ensure that land use and transportation planning occur in a coordinated and rational manner. The development of this document was guided by USDOT's Federal Planning Factors and the state's Livable Delaware Agenda.

The Federal Highway Administration's (FHWA's) statewide planning requirements include factors that long-range plans must address. These "Planning Factors" are contained within the metropolitan and statewide planning provisions of SAFETEA-LU. These federal Planning Factors stipulate that long-range transportation plans must:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety and security of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns;
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system.

1.2.2 Air Quality Analysis

The Clean Air Act is the comprehensive federal law that regulates emissions from sources such as cars, trucks, buses, farm equipment, and factories. It was first adopted in 1970, in recognition of air pollution damage to trees, crops, plants, lakes, and animals, as well as to human health. The young, elderly, and those with respiratory conditions such as asthma and emphysema are especially vulnerable to the effects of air pollution. The Clean Air Act Amendments of 1990 have placed significant controls on the planning of transportation programs and facilities.

According to the U.S. Environmental Protection Agency (EPA), motor vehicles are responsible for nearly one-half of smog-forming volatile organic compounds (VOCs), more than one-half of nitrogen oxide (NOx) emissions, and about one-half of toxic air pollutant emissions in the U.S. Motor vehicles, including off-road vehicles, now account for 75 percent of carbon monoxide (CO) emissions nationwide.[1]

The entire State of Delaware is contained within the Philadelphia-Wilmington-Atlantic City non-attainment area for ozone. This requires any or all three counties (Kent, Sussex, and New Castle) to demonstrate that transportation activities are in line with air quality goals (known as "transportation conformity") when: the existing long-range plan is updated or revised; a regionally significant project is added to the existing or proposed TIP; EPA

[1] US EPA, 2007

approves a new State Implementation Plan (SIP) that creates or revises on-road mobile source emissions budgets; or four years has elapsed since the last determination.

LRTP, TIP, and State Transportation Improvement Plan (STIP) approvals are contingent on the successful demonstration of transportation conformity. Approved plans are then authorized to program federal transportation funding for projects within the TIP or STIP. Failure to successfully demonstrate transportation conformity would make the entire state liable to a conformity lapse.

Emissions testing is currently conducted in Kent and New Castle counties. The Department of Natural Resources and Environmental Control (DNREC) sets the emissions standards for vehicles and the Division of Motor Vehicles (DMV) administers the vehicle inspection program. Under the current guidelines for these two counties, if a vehicle fails an emissions test, the owner must have the emissions-related repairs performed before being retested. Satisfactory completion of the test requirements is necessary before vehicle registration renewal. Waivers are currently allowed when all of the following apply:

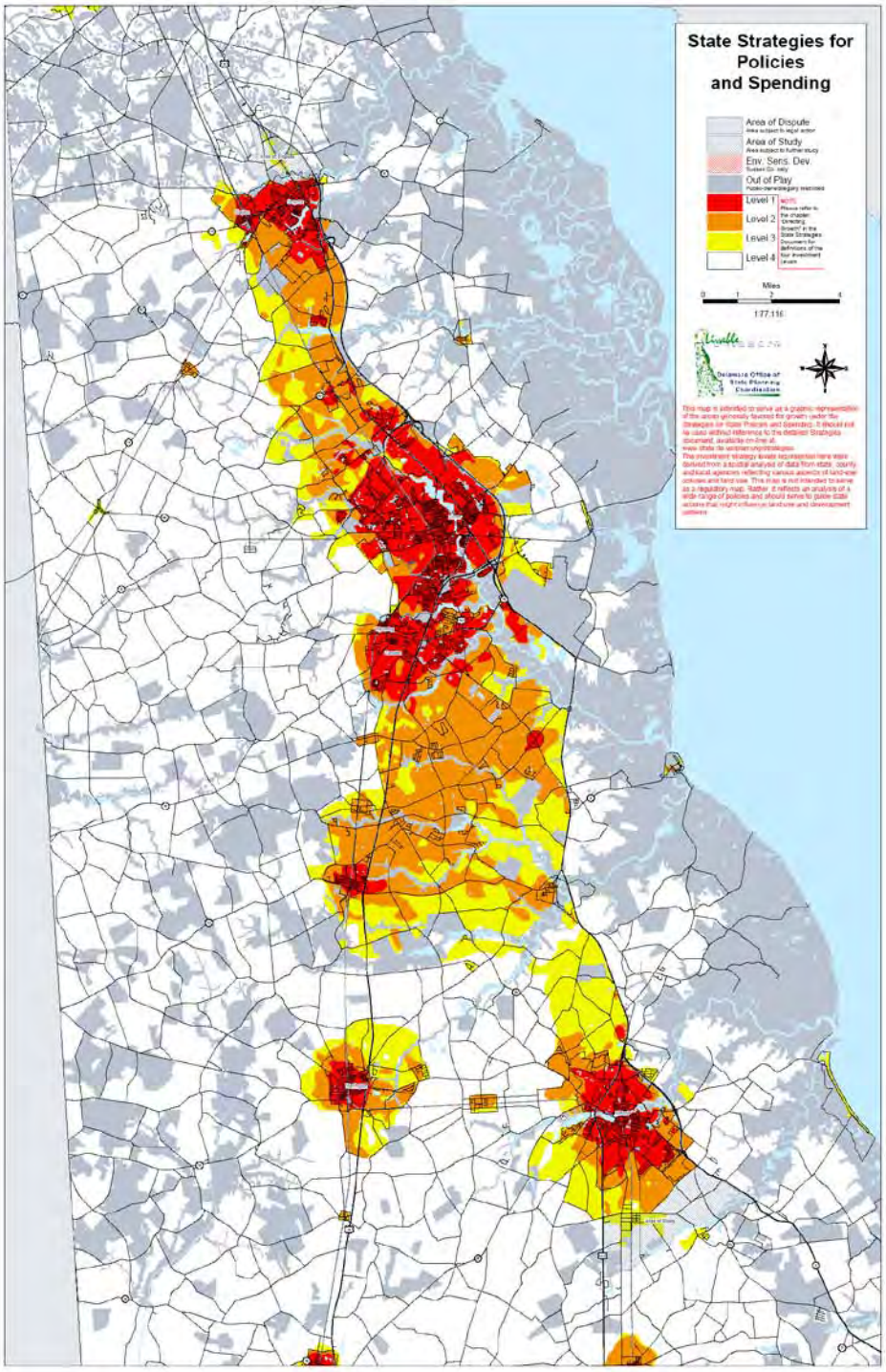
- The vehicle failed the exhaust emissions test two or more times.
- Engine parameters are set to manufacturer's specifications.
- Repair costs exceed $760.
- The vehicle did not fail for visible smoke or missing emissions control equipment.

At the present time, inspection/maintenance testing in Kent and New Castle counties includes a feature called On-Board Diagnostics (OBD). The OBD test procedure is a much more accurate and complete evaluation of the vehicle's operating parameters than traditional emissions testing and produces a much more precise measure of actual emissions. This more precise testing method generates emissions credits that may be used to allow construction of much needed congestion management and expansion projects throughout the county.

1.2.3 State Strategies for Policies and Spending

In 1999, the Delaware Cabinet Committee on State Planning Issues approved the State Strategies for Policies and Spending (State Strategies); in 2004, the State Strategies were comprehensively updated. The State Strategies describe Delaware's approach to making the most cost-effective investments in state-funded infrastructure, programs, and services as a means of promoting efficient development and eliminating sprawl, protecting the environment, and efficiently using natural resources.

Exhibit 1.1: State Strategies for Policies and Spending for Kent County



The State Strategies map shown in **Exhibit 1.1** is a graphic representation of this approach that identifies the areas best suited for the various levels of investment. Together, the State Strategies and the State Strategies map guide state agencies as they make their investment decisions, and guide how the state will review and comment on county and municipal comprehensive plans and specific land use decisions. These documents also define how

county and municipal governments should coordinate regarding infrastructure and other development.

More detail on these strategies can be found at
http://stateplanning.delaware.gov/strategies/strategies.shtml.

1.2.4 Livable Delaware

In 2001, Governor Minner announced the Livable Delaware Agenda (the Agenda), which focused on identifying and adopting the laws, policies, and programs needed to implement the State Strategies. The Agenda is a proactive strategy that aims to curb sprawl and direct growth to areas best suited for it in terms of infrastructure investment and planning at all levels.

More information on Livable Delaware can be found at
http://stateplanning.delaware.gov/livedel/default.shtml.

The Governor's Livable Delaware Agenda was signed into law with Executive Order 14, which required state agencies to develop plans describing how their budgets, programs, and policies would be used to implement the State Strategies and conform to the principles of the Agenda.

The Agenda was further refined and strengthened by House Bill 255 and Senate Bill 65. House Bill 255, signed into law in July 2001, requires local governments to adopt comprehensive plans, stipulating that future growth areas for annexation be included in the plan and that the rezoning needed to support that plan be completed within 18 months of plan adoption.

Senate Bill 65, which was signed into law in July 2003, replaced the Land Use Planning Act (LUPA) with the Preliminary Land Use Service, or PLUS process. Under LUPA, state agencies would comment on discrete development plans, often toward the end of the development review process. This placed private developers at greater risk than necessary, needlessly slowing down the local review and approval process and not always encouraging early consideration of transportation and land use linkages. Development reviews conducted under LUPA also made it difficult to reconcile competing comments from different state agencies. The PLUS process now provides for early reviews of development proposals by all state agencies involved with development approvals. It also enables the state to speak with one voice and to provide more timely and thoughtful reviews. Moreover, it provides for the early consideration of state and local needs associated with development, including those needs related to transportation facilities and services.

The state and county continue to work to implement community development strategies that provide incentives for new growth to occur in desired areas through the Livable Delaware initiative.

1.2.5 Corridor Capacity Preservation Program

The Corridor Capacity Preservation Program (CCPP) was established in 1996 to preserve selected existing transportation facilities. CCPP policies support an explicit linkage between land use and transportation through plans working in concert toward the goal of creating a more "livable Delaware." The program seeks to extend a corridor's capacity and usefulness without expanding travel lanes. Two corridors in Kent County have been included in the program: State Route 1, south of Dover Air Force Base and U.S. 13, south of DE 10.

The program sets forth five primary goals:

- Maintain an existing road's ability to handle traffic safely and efficiently.
- Coordinate the transportation impacts of increased economic growth.

Preserve the ability to make future transportation-related improvements.

- Minimize the need to build an entirely new road on a new alignment.
- Sort local and through traffic.

By achieving these goals, the program requires that roadway corridor nominations be a part of DelDOT's Statewide Long-Range Transportation Plan, and that the public be given an opportunity to review and comment on roadway nominations. By adopting additional corridors in the program, the county can help ensure that selected roadways will meet their crucial transportation functions in the future, and keep transportation options open before they become limited by development projects.

1.2.6 Local Comprehensive Plan Updates

Three comprehensive plans have been updated or amended to accommodate planned growth since completion of the previous RTP in 2005, and are summarized below:

1.2.6.1 City of Milford Comprehensive Plan 2003 Update (amended 2006)

The City of Milford Comprehensive Plan was updated in 2003, with the most recent amendment in 2006. The plan update is based on continued and directed growth; however, it is not intended to promote accelerated growth or to coerce annexation. Amendments continue the plan's four principles of encouraging a growing and diversified economy, providing appealing and affordable housing, recognizing the Mispillion River as a valuable environmental and economic asset, and promoting the city's unique look and cultural resources.

The city has developed a Land Use Plan/Annexation Plan since annexation is an attractive option to the city. Regional transportation projects would also be referenced in annexation agreements. The Annexation Plan anticipated annexation requests for approximately 4,500 acres in the 2005 amendment. Within Kent County, approximately 1,800 of the total acres were anticipated for annexation within a five-year planning period. Four anticipated growth areas west, northwest, north, and northeast of Milford were identified.

1.2.6.2 City of Dover Comprehensive Plan Update (2003, amended 2005)

The Dover Plan: *From the People – For the People* was originally adopted as the 1996 Comprehensive Plan. The plan was updated in 2003 due to new growth pressures and development conditions in the city. The plan was also updated to comply with state regulations and allow for annexation of property.

The growth and annexation plan and map of the Comprehensive Plan were amended in May 2005. Between 1996 and 2003, approximately 59 acres were annexed to the city. Several of the parcels were located along US Route 13. The City of Dover is located within Kent County's Growth Overlay Zone as delineated in the zoning ordinance. The Annexation Plan notes lands in three categories: 1) identified for annexation, 2) desirable for annexation, and 3) to be evaluated for annexation. Additionally, the "Areas of Concern" are identified.

1.2.6.3 Town of Smyrna Comprehensive Plan (2002, updated 2005)

The 2002 update to the Comprehensive Plan for the Town of Smyrna, Delaware, was adopted in 2003 revising the original 1988 plan, as amended in 1997. The 2002 review and amendment to the town's plan provides updated information on existing land use, growth, and development issues, and on population and economic trends. It also updates the 1997 plan by adding an annexation plan element to bring the comprehensive plan into compliance with state planning statutes.

The principal goals for growth are to achieve a steady rate of planned growth while allowing for the efficient expansion of public services in the urbanized area and ensuring the maintenance of the essential character of the community. Since 2000, approximately 1,075 acres have been annexed north and south of the town within the plan's defined growth area. Further annexation is suggested for areas that are surrounded by the town. Properties adjacent to the town would be considered on a case-by-case basis.

1.2.7 Travel Demand Modeling

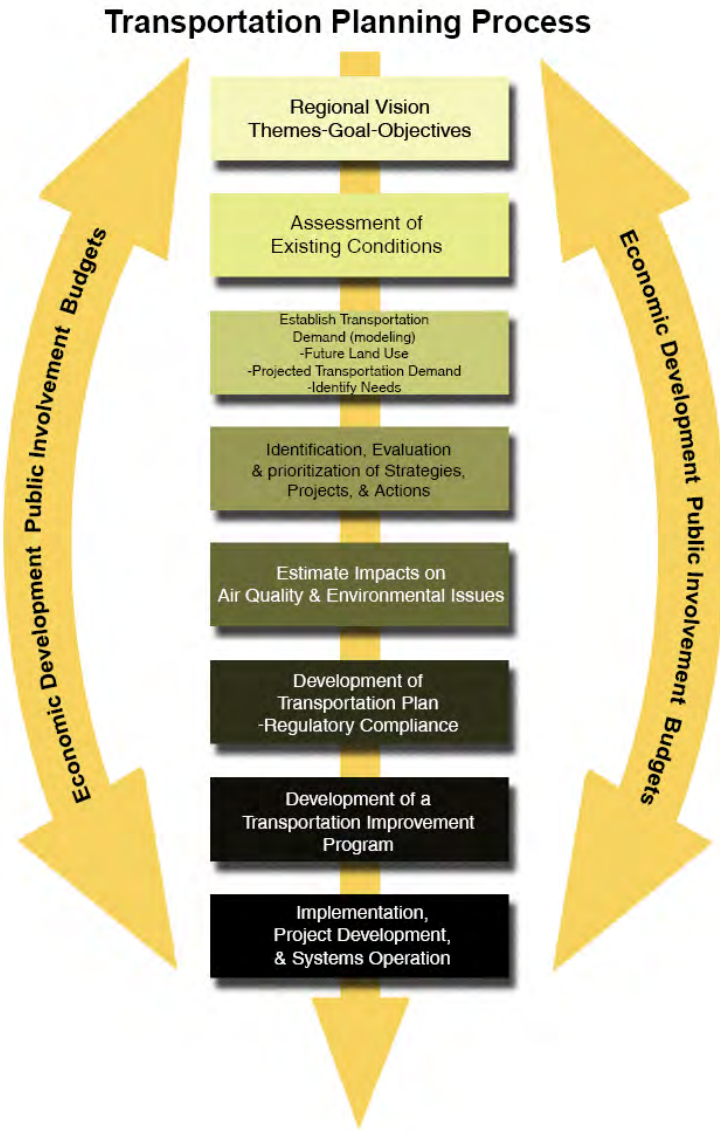
As an update to the 2005 RTP, this plan inventories changes in the transportation system between 2005 and 2007, identifies changes in future needs-based traffic forecasts and expected travel conditions projected by DelDOT's travel demand model, and presents a revised list of actions to attain the common vision that is set forth. The needs assessment is based on updated 2007 population and employment estimates from the 2000 U.S. Census, updated by the Delaware Population Consortium. It also reflects input received from various committees within the region, including input from the MPO's Technical and Public Advisory Committees (TAC andPAC), the MPO Council, and the general public.

For the 2005 plan, the Dover/Kent County MPO utilized a land use model, known as CORPLAN, in conjunction with DelDOT's transportation model, TRANPLAN, to successfully integrate land use and transportation planning efforts. The community-based planning model (CORPLAN) estimated regional land development potential. TRANPLAN was used to compare the travel conditions and impacts associated with a preferred scenario for future development along with two alternative scenarios. The long-range planning study area includes all of Kent County, the southern portion of New Castle County, and the northern portion of Sussex County.

The outline of this RTP update reflects the steps taken to prepare this document as well as the basic steps of the long-range planning process. These steps were taken in the development of the 2005 RTP and are consistent with DelDOT's Statewide Long-Range Transportation Plan, last completed in 2002, with an update expected in 2008. These steps are below and in **Exhibit 1.2**.

- Develop a vision for the future based upon input from various community stakeholders.
- Monitor existing conditions.
- Forecast future population and employment growth.
- Assess projected land use in the region and identify the demand for transportation services over a 20-year planning horizon.
- Identify problems and needs associated with various transportation services and improvements.
- Develop capital and operating strategies.
- Estimate the impact of the transportation system on air quality.
- Develop a financial plan.
- Prepare an implementation plan to guide decision-makers with respect to transportation improvements.

Exhibit 1.2: Transportation Planning Process

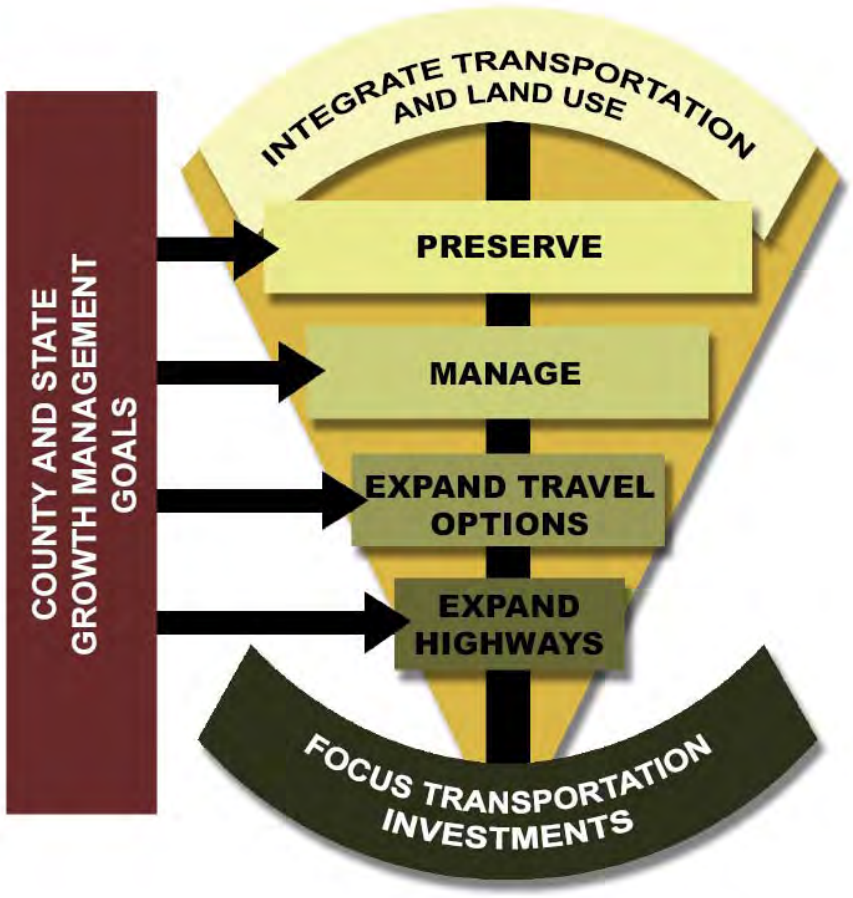


1.2.8 Relationship between Vision, Themes, Goals, Objectives, Strategies, Actions

There is no one policy, project, or action that will meet all the future needs of the planning area. Rather, the fundamental strategies outlined in this update will serve to guide decision-making for transportation investments. This approach is aligned with the State's Livable Delaware Agenda and the county's and municipalities' long-range plans. The policies articulated in all plans, including this plan, set up a hierarchy for making future transportation investments and are related to the Federal Planning Factors. The strategies are:

- Preserve the existing system.
- Manage the system efficiently.
- Expand travel options beyond the private automobile.
- Expand the highways system when needed.
- Focus transportation investments to complement county and state growth management goals (integrate transportation with land use).

Exhibit 1.3: RTP Strategies



These strategies will continue to provide the basis for project identification and evaluation and all other actions. The actions are multimodal, including transit, bicycle and pedestrian facilities, aviation and rail facilities, and highway improvements. They are intended to complement one another to provide an efficient transportation system that offers a wide range of options.

2. The Vision

2.1 2030 Vision – "Moving Forward Together"

The vision statement has remained fundamentally unchanged since the MPO's first plan was adopted in 1996. Most changes have evolved from federal requirements than shifts in community vision. The vision still revolves around safety and security, quality of life, economic development and access and mobility.

The RTP vision statement was reviewed in light of the Comprehensive Plan's vision statement, just as the areas of emphasis and policy recommendations provided in the Comprehensive Plan were considered as the RTP recommendations were updated. Both plans focus on creating and maintaining sustainable communities and preserving the natural resources that contribute to the county's unique character. When considered together, both plans serve to direct public investment in infrastructure in a manner that protects resources while allowing for economic opportunity.

2030 Vision – *"Moving Forward Together"*

The future transportation system in the Dover/Kent County metropolitan region is safe, supports economic development, allows easy access and mobility for people and goods to reach their destinations, and serves desired growth patterns. The transportation system serves the public's needs, simultaneously reinforcing the unique character and quality of life of each community while preserving the region and its natural resources.

The RTP's Vision is categorized into five major themes or principles around which the goals and objectives are based:

1. Economic Development
2. Quality of Life
3. Growth Management/Land Use Coordination
4. Access, Safety, Security, and Mobility
5. Transportation Network (Infrastructure)

2.2 Themes, Goals, Objectives

Theme 1: Economic Development

Goal: Strengthen the local economy.

Objectives:

- **Support business retention and creation of high quality employment** by investing in transportation improvements.
- **Provide businesses with adequate access to labor** by encouraging affordable, multimodal transportation options.
- **Reduce the expense and time delays of shipping and receiving freight** by enhancing access to retail and industrial areas and improving the interconnectivity of all modes of the transportation network.
- **Ensure community cohesion** by appropriately connecting developed areas with target growth areas for new development.

Theme 2: Quality of Life

Goal: Improve quality of life.

Objectives:

- **Protect, preserve, and enhance natural, historic, and cultural resources** by managing the existing transportation system and making transportation investments that protect, preserve, and enhance these valued community resources.
- **Support healthy lifestyles, choices, and opportunities** by providing facilities such as sidewalks, multi-use paths, and bikeways as part of both transportation and land development projects.
- **Promote context sensitivity** by developing transportation improvements that minimize environmental impacts and promote improved quality of the environment.
- **Provide aesthetic value** by incorporating aesthetic and non-vehicular improvements in transportation investments.
- **Reduce air, water, and noise pollution** by accommodating less-polluting travel options such as walking, bicycling, transit, and use of alternatively-fueled and low emission vehicles.

Theme 3: Growth Management/Land Use Coordination

Goal: Support desired land use and effective growth management.

Objectives:

- **Identify desired land use patterns** by developing and routinely updating comprehensive land use plans that identify regional growth boundaries.
- **Integrate land use with transportation** by improving coordination between land use and transportation planning and project development in order to establish and maintain a transportation network that supports anticipated needs within growth areas.
- **Foster growth and development** by providing a variety of safe, convenient, and affordable transportation alternatives that support preservation of agricultural lands, open space, and other valued community resources.

- **Provide transportation alternatives** by planning, designing, and implementing an integrated transportation network.

Theme 4: Access, Safety, Security, and Mobility

Goal: Improve access and mobility while ensuring the safety and security of all citizens.

Objectives:

- **Improve mobility** by reducing dependence on a single mode of transportation.
- **Provide an integrated transportation system, enhancing accessibility and mobility** by including interconnected modes of travel including transit, pedestrian and bicycle facilities, car, truck, commuter rail, and freight.
- **Provide access to transportation services for people with special needs** *(disabled, elderly, etc.)* by making system enhancements and expanding services.
- **Improve accessibility, mobility, and safety** by prioritizing the maintenance and improvement of heavily-utilized corridors to enhance the free flow of goods and people.
- **Improve safety** by expanding driver training and safety awareness.
- **Enhance security** by taking actions to ensure the uninterrupted operation of vital transportation services.

Theme 5: Transportation Network (Infrastructure)

Goal: Safely and efficiently transport people and goods.

Objectives:

- **Preserve and expand the existing transportation infrastructure** by focusing on facility maintenance and expansion to maximize its performance, capacity, and life cycle.
- **Promote the use of technology to enhance the transportation system** by planning, designing, and implementing innovative transportation solutions.
- **Ensure adequate transportation facilities** by making safety improvements an essential aspect and prioritizing maintenance of the transportation network.
- **Establish aesthetically pleasing and cost-effective transportation facilities** by utilizing innovative techniques and materials that result in context-sensitive solutions that require minimal maintenance.
- **Improve efficiency and safety of the existing system** by the use of technology, maintenance, and management.
- **Direct or focus transportation investments** in a manner that promotes sustainable development within designated areas.
- **Direct or focus transportation investments** by using Transportation Improvement Districts (TIDs) to promote sustainable development within these designated areas.

These themes or principles provide the basis for a regional vision of a safe, efficient, and affordable transportation system. The vision, supported by regional goals and objectives, provides a description of a desired setting for the future of the region. This setting provides the basis for decision-making in the metropolitan area with respect to transportation and land use. **Exhibit 2.1** illustrates how the vision, themes, goals, objectives, strategies, and actions are linked to each other.

Exhibit 2.1: RTP 2030 Vision

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3. Current Transportation System Overview

This chapter includes an assessment of the existing transportation system in Kent County; the baseline conditions for identifying future transportation investment needs. The various elements of the county's transportation system are reviewed by mode and presented in this chapter. The elements of the system include existing roads and bridges, public transportation, bicycle and pedestrian facilities, railroads, aviation, and marine facilities. Where applicable, the county's system is compared to the State of Delaware's overall system. To the extent known, this chapter presents the changes that have occurred to the existing system since the previous plan.

The Highway Performance Monitoring System (HPMS) is a national database that assists metropolitan planning organizations and other government agencies in assessing highway condition, performance, air quality trends, and future investments for the functional classification of roadways. These standards were used to assess the conditions and future needs of the county's highways.

3.1 Roads and Bridges

Kent County is served by State Routes SR 1 and DE 6, 8, 9, 10, 12, 14, 15, 44, and 300, and US Routes 13 and 113. (There is no real difference in actual nomenclature between SR and the DE's. The custom has been to acknowledge SR 1 as such to differentiate its function.) These routes connect the cities of Dover, Smyrna, and Milford in Kent County, and provide access to New Castle and Sussex counties in Delaware, and the State of Maryland, as seen in **Exhibit 3.3**.

According to the State of Delaware, Kent County accounts for 23.5 percent of the total route[1] miles in the state. New Castle and Sussex counties comprise the balance of 76.5 percent of the state, as seen in **Exhibit 3.1**. The roadway system serving Kent County in 2006 had 1,459 route miles of roadway and 3,074 lane[2] miles of roadway, as seen in **Exhibit 3.2**. There was an increase of 96 route miles from 2003 to 2006, an increase of seven percent, with the majority of this increase during this period seen in freeways and expressways.

Exhibit 3.1: Roadway Route Miles and Density by County (2006)

	Route Miles	Area (Square Miles)	Roadway Density
New Castle County	2,355	426.3	5.52
Kent County	1,459	590.7	2.62
Sussex County	2,304	937.7	2.46
State of Delaware	6,118	1,955	3.18

Sources: Dover/Kent County Metropolitan Planning Organization and DelDOT, 2006

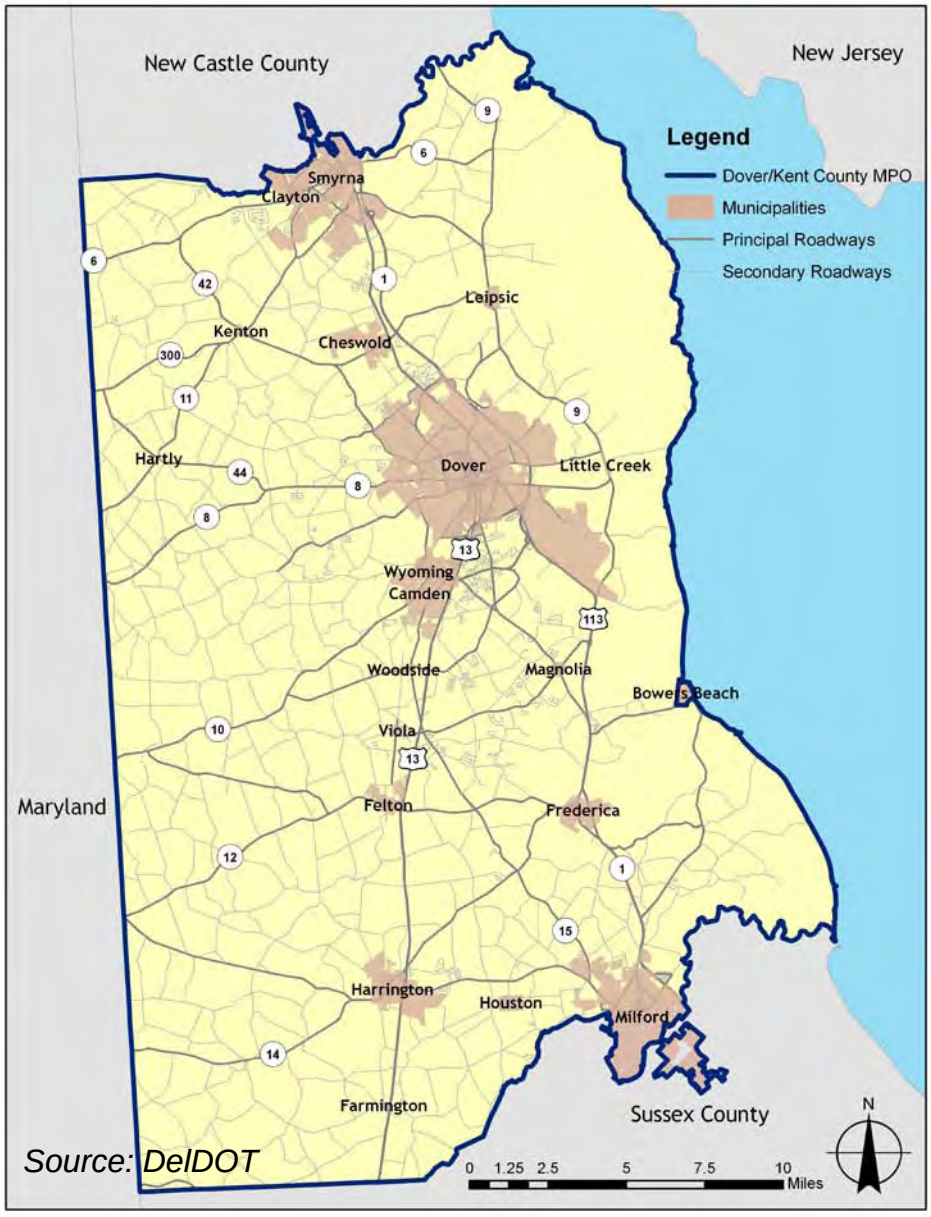
[1] Length of roadway, regardless of the direction or number of lanes.
[2] Length of roadway, where every lane counts separately in mileage calculation.

Exhibit 3.2: Kent County Roadway Mileage by Functional Classification (2006)

Functional Classification	Route Miles	Percent of Total	Lane Miles	Percent of Total
Freeway and Expressway	17.04	1.17%	72.36	2.35%
Other Principal Arterials	43.15	2.96%	171.18	5.57%
Minor Arterials	106.53	7.30%	264.11	8.59%
Collectors	274.63	18.82%	550.53	17.91%
Local	1,017.79	69.75%	2,015.97	65.58%
Total	1,459.14	-	3,074.15	-

Source: Dover/Kent County Metropolitan Planning Organization, 2006

Exhibit 3.3: Kent County Roadways



3.1.1 Functional Classification

Functional classification is a system of categorizing roadways based on their character and purpose; their function. Functional classification determines the design standards for a roadway, and provides a means of identifying where roadways need to be improved to meet design standards.

The county's functional classification was updated by the Delaware Department of Transportation (DelDOT), and most recently approved by the Federal Highway Administration (FHWA) on December 28, 2005. Classifications include interstate, freeways and expressways, other principal arterials, minor arterials, major and minor collectors, and local routes. Kent County's roadways include all classifications except interstate highways;. none are located within Kent County. The descriptions of functional classifications are as follows:

- *Interstate* – Interstate routes are designated as part of the National System of Interstate and Defense Highways. These are high-speed, primary travel routes connecting metropolitan areas, cities, and industrial centers. Interstate routes do not directly provide access to adjacent land, interconnecting instead primarily with other higher classifications of routes. As stated, there are no roadways classified as interstate in Kent County.

- *Other Freeways and Expressways* – Routes designated as other freeways and expressways are only present within urbanized areas. These are high-speed, primary travel routes that serve metropolitan cities and industrial areas. Freeways and expressways interconnect primarily with other higher classifications of routes, such as interstates. Freeways and expressways in Kent County include SR 1 in the urbanized areas, and make up 1.17 percent of the county's roads.

- *Other Principal Arterials* – Principal arterial routes serve major centers of activities and urban areas. They are the highest traffic volume corridors with long trip lengths, and are links between the higher and lower classifications. Access to adjacent properties is generally allowed from principal arterials, though access may be regulated. Kent County has approximately 43.15 miles of principal arterials, representing 3 percent of the county's roads.

- *Minor Arterials* – Minor arterials are routes that interconnect principal arterials and provide access to smaller developed areas linking cities and towns. Minor arterials in Kent County include SR 8, SR 15, SR 14, SR 10A, portions of US 13 and US 13A, SR 44, and SR 300. These routes comprise 7.3 percent of roadways in Kent County.

- *Collectors* – Collector routes are divided into major and minor routes. Major collectors are present in urbanized areas, while minor collectors are only present in rural areas. Collector routes provide land access and collect traffic from lower classification roadways, channeling them to the higher

classification roadways. These routes comprise the majority of State Routes in the county, making up 18.8 percent of the county's roadways.

- *Local* – Local routes provide direct access to land and links to the higher classification routes. Local routes have the lowest volumes of traffic and short trip lengths. These routes consist of all roads not designated at higher classifications. Kent County has 1,017.79 miles of local roads. The majority of roads, 69.8 percent of those in the county, are classified as local.

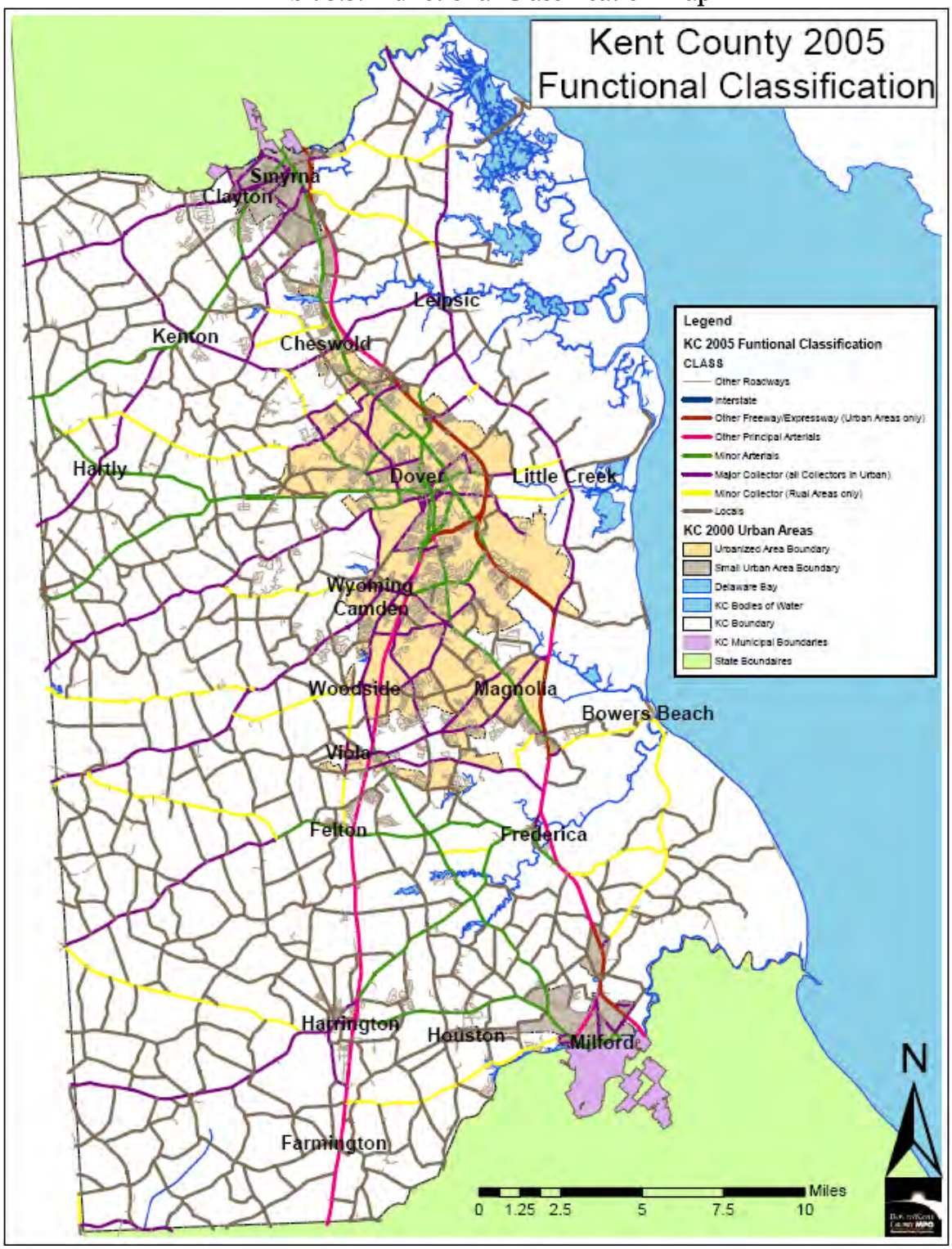
Exhibit 3.4 illustrates route miles and annual vehicle miles traveled (VMT), by functional class in Kent County as of 2006. In 2006, the largest increase in the percentage of total route miles was in minor arterials. Other routes remained similar to 2003 route mile percentages.

Exhibit 3.4: Roadway Functional Classification by Route Miles and Vehicle Miles Traveled (VMT)

Functional Classification	Route Miles				VMT (millions)	
	1999	2003	2006	% of Total (2006)	2006	% of Total
Freeway & Expressway	0	9.75	17.04	1.2%	526.39	11.4%
Other Principal Arterials	57.8	50.44	43.15	3.0%	1,257.57	27.3%
Minor Arterials	76.44	76.64	106.53	7.3%	1,271.82	27.6%
Collectors	267.17	266.23	274.63	18.8%	735.451	16.0%
Local	941.49	960.42	1,017.79	69.8%	810.16	17.6%
Total	1,342.90	1,363.48	1,459.14	-	4,601.39	-

Source: Dover/Kent County Metropolitan Planning Organization, 2006

Exhibit 3.5: Functional Classification Map



Source: Dover/Kent County MPO

3.1.2 Surface Type and Lane Width

Two important physical characteristics of roadways are surface type and lane width. Kent County's roadways have several different types of surfaces, ranging from unpaved to Portland cement concrete pavement. The pavement design is typically a function of volume,

truck percentage, and life cycle costs. The majority of the county's arterials and major collectors have a concrete pavement or a combination of concrete pavement with a hot-mix overlay. The majority of minor collectors, local roads, and suburban development streets have a flexible hot-mix or surface treatment.

The width of a travel lane is based upon the design speed and type of traffic (particularly the presence of trucks), the environment or context in which the roadway is located, and available sight distances. While width has little to do with safety at lower speeds, the travel lane width also affects the ability of pedestrians and bicycles to interact safely with motor vehicles. Wider lanes provide for more space and reduce the level of friction created by passing bicyclists in the roadway. Wider lanes also create a greater amount of recovery room for motorists who lose control of their vehicles at higher speeds. However, wider lanes can also entice motorists to travel at greater speeds than they would otherwise, on more narrow roadways. A wider lane increases the amount of time needed for a pedestrian to cross a road. Lane widths are critical to the expected type and desired speed of roadway users. **Exhibit 3.6** presents a representative sample of lane width by functional classification for 2007.

Exhibit 3.6: Kent County Lane Width by Functional Classification (2007)

Functional Class	Percent of Lane Miles					
	< 9' Wide	9' Wide	10' Wide	11' Wide	12' Wide	> 12' Wide
Interstate/Freeway	0	0	0	0	30	70
Other Principal Arterials	0	0	0	1	45	54
Minor Arterials	0	0	14	7	60	19
Major Collectors	0	3	30	35	19	13
Minor Collectors	2	9	42	36	10	1
Local	5	24	55	12	2	2
Subdivision Development	2	2	12	58	6	20

Source: Dover/Kent County MPO, 2006

3.1.3 Pavement Conditions

DelDOT's Pavement Management Section collects data on the condition of state- and federally-funded highways to establish priorities for rehabilitation. Prioritization is based on overall pavement condition; road functional class; annual average daily traffic; coordination with other construction projects; and the presence of schools, hospitals, transit routes, and other crucial public services.

DelDOT uses well-established, widely-used measures and rating techniques to monitor the physical condition of its roadways. The two key attributes of roadway condition are rideability and surface distress. Rideability relates to the comfort or smoothness experienced by a vehicle's ride. Surface distress relates to observed problems in the roadway such as cracking.

The key indicator of pavement condition adopted by DelDOT is the Overall Pavement Condition (OPC), based 25 percent on rideability and 75 percent on surface distress. **Exhibit 3.7** shows thresholds used by DelDOT for determining roadway condition. Good overall roadway conditions are indicated by an OPC greater than 60 while poor roadways are

those with an OPC less than 50. Furthermore, the state uses special "trigger values" when a segment of roadway requires special attention. Local roads have a lower trigger value of 50 while expressways have a higher OPC trigger value of 70. This is demonstrated in more detail in **Exhibit 3.8**.

Exhibit 3.7: Pavement Conditions Thresholds

Good	OPC > 60
Fair	OPC > 50 and OPC ≤ 60
Poor	OPC ≤ 50

Source: DelDOT

Exhibit 3.8: Pavement Conditions Trigger Values

Freeways and Expressways	70
Arterials and Collectors	60
Local Roads	50

Source: DelDOT

Exhibit 3.9: Pavement Conditions in Kent County, 2006[3]

Functional Class	Total Lane Miles	Good		Fair		Poor		Meets Trigger Value	
		Lane Miles	%	Lane Miles	%	Lane Miles	%	Lane Miles	%
Freeway/ Expressway	45.4	45.4	100%	0	0.00%	0	0.00%	0	0.00%
Major Arterial	81.42	74.96	92.07%	6.2	7.61%	0.26	0.32%	6.46	7.93%
Minor Arterial	124.5	119.1	95.66%	5.4	4.34%	0	0.00%	5.4	4.34%
Collector	277.5	241.14	86.90%	33.18	11.96%	3.18	1.15%	36.36	13.10%
Local	650.08	499.28	76.80%	117.61	18.09%	35.19	5.41%	35.19	5.41%
Suburban	144.17	124.89	86.63%	13	9.02%	6.27	4.35%	N/A	N/A
Total	**1,323.07**	**1,104.77**	**83.50%**	**175.39**	**13.26%**	**44.9**	**3.39%**	**83.41**	**3.64%**

Source: DelDOT

3.1.4 Bridges and Bridge Conditions

In 2006, there were a total of 307 bridges within Kent County. The number of bridges in the county has increased by 7 percent since 2003. Of the 307 bridges, 193 are 20 feet or longer, and are included on the National Bridge Inventory. Ten bridges are considered eligible for inclusion on the National Register of Historic Places (NRHP); however, none are NRHP-listed.

3.1.4.1 Structural Deficiency and Functionality

A structurally deficient bridge is required to be closed, immediately rehabilitated, or restricted to light vehicles only. A functionally obsolete bridge refers to deck geometry, load

[3] According to the previous RTP plan, total lane miles in 2002 were shown as 2,582.7. The reason for this drop is a change in DelDOT districts. The Kent County office used to maintain mileage that is now part of DelDOT's Canal district.

carrying capacity, clearance, or roadway approach alignment that no longer meets current design criteria. In 2007, eight bridges were identified as structurally deficient in Kent County.

Exhibit 3.10 shows bridge conditions in Kent County from 1999 to 2007. The number of structurally deficient bridges continues to decrease as the rehabilitation of structurally deficient bridges has reduced the number of functionally obsolete bridges over the past four years, demonstrating DelDOT's commitment to improving county bridges. The number of functionally obsolete bridges has remained approximately 4 percent. Comparing to the state overall, Kent County has a similar percentage of structurally deficient bridges, yet the state has nearly three-times the percent of functionally obsolete bridges, as can be seen in **Exhibit 3.11**.

Exhibit 3.10: Kent County Bridge Inventory (1999 – 2007)

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total Bridges	**275**	**287**	**288**	**287**	**288**	**288**	**286**	**307**	**334**
Structurally Deficient	16	12	11	14	17	13	10	9	8
% of Total	*5.80%*	*4.20%*	*3.80%*	*4.90%*	*5.90%*	*4.51%*	*3.50%*	*2.93%*	*2.40%*
Functionally Obsolete	14	14	14	13	13	11	13	15	15
% of Total	*5.09%*	*4.88%*	*4.86%*	*4.53%*	*4.51%*	*3.82%*	*4.55%*	*4.89%*	*4.49%*

Source: DelDOT, 2007

Exhibit 3.11: Delaware Bridge Inventory (2000 – 2006)

Year	2000	2001	2002	2003	2004	2005	2006
Total Bridges	**1347**	**1357**	**1359**	**1373**	**1379**	**1382**	**1429**
Structurally Deficient	71	72	65	65	68	58	33
% of Total	*5.27%*	*5.31%*	*4.78%*	*4.73%*	*4.93%*	*4.20%*	*2.31%*
Functionally Obsolete	152	152	151	145	140	145	175
% of Total	*11.28%*	*4.86%*	*11.11%*	*10.56%*	*10.15%*	*10.49%*	*12.25%*

Source: DelDOT

3.1.5 Evacuation Routes

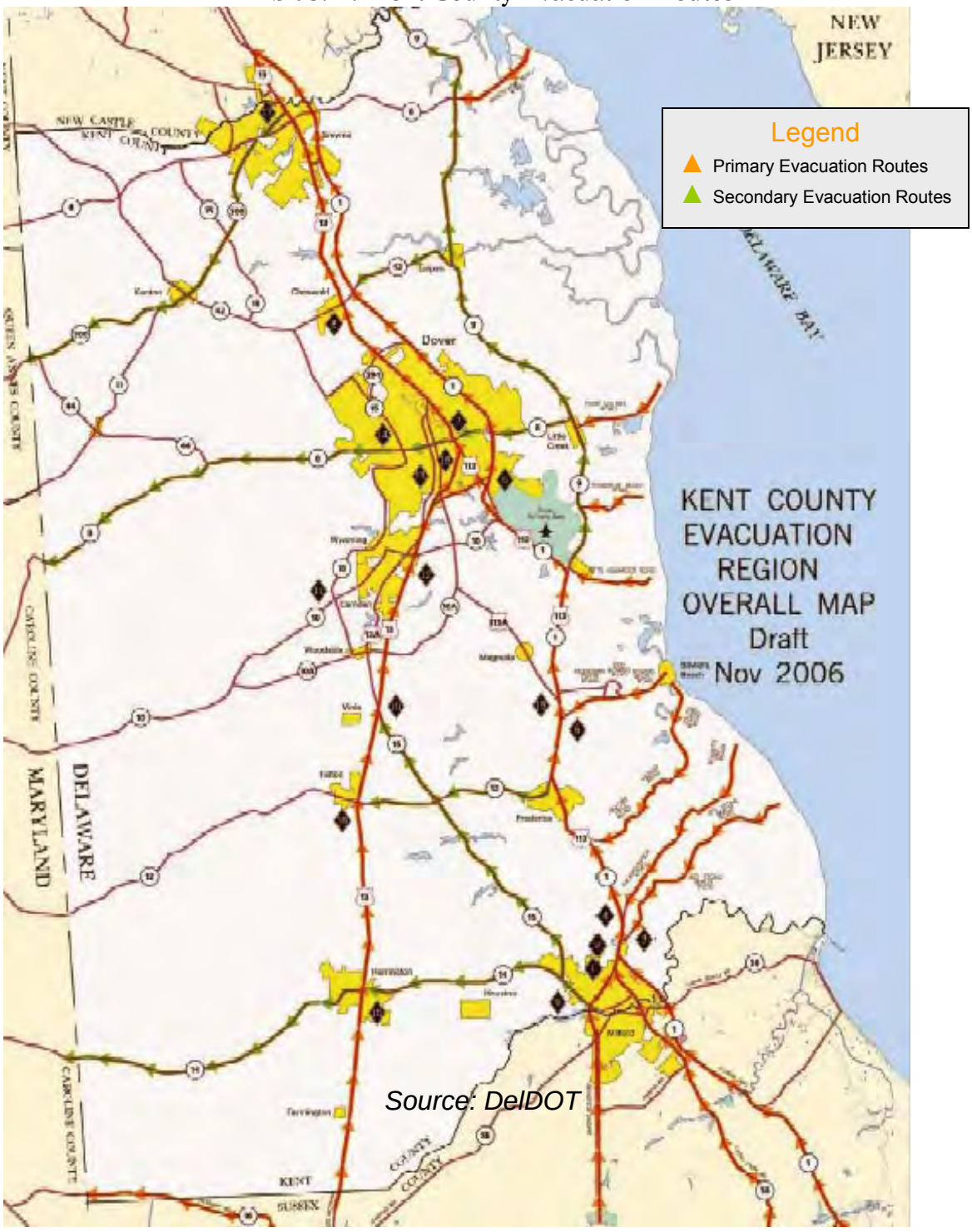
Kent County is vulnerable to a number of hazards including floods, hurricanes, hazardous materials incidents, terrorism, and nuclear facility incidents.

The Delaware State Transportation Management Teams (TMTs), in coordination with the Department of Homeland Security, work together to make joint decisions on how an incident or event that impacts the transportation system will be handled. There are six TMTs in Delaware, with one located in Kent County. TMTs are part of DelDOT's transportation management program known as DelTrac. TMTs bring together personnel and resources from police, fire, rescue, emergency management, transportation, communications, environmental protection, public works, and other agencies to improve

safety and reduce delays during incidents, events, and emergencies that impact Delaware's transportation system.

The All Hazards Evacuation Annex of the Transportation Incident and Event Management Plan for Kent County (April 2007) provides specific county-related details to accompany the Delaware Transportation Incident and Event Management Plan, prepared in August 2004. This Annex primarily focuses on managing the transportation system during large planned or unplanned incidents or events that may affect the health and safety of people living within Kent County. The Kent County Evacuation Region Overall Map (November 2006) is included in the Annex Plan and is available on the DelDOT website. The map shows primary and secondary evacuation routes in addition to local evacuation routes.

Exhibit 3.12: Kent County Evacuation Routes



Primary evacuation routes include Routes 1, 13, and 113 for north/south movement; Woodland Beach Road, Port Mahon Road, Pickering Beach Road, Kitts Hummock Road, Bowers Beach Road, Milford Neck Road, Thompsonville Road, and Big Stone Beach Road from Bay side. These routes are limited and unlimited access highways and local roads with numerous entrances and exits. A network of secondary evacuation routes direct local

residents to the primary evacuation routes, and also can be utilized to reroute traffic during an evacuation in the event that the primary evacuation routes become impassible (see **Exhibit 3.12**). Routes DE 8, 9, 12, 14, 15 and 300 are secondary evacuation routes. Local evacuation routes are any other routes in the county that feed into primary or secondary routes.

3.1.6 Operations

Most traffic control design and operation issues are managed through DelDOT's Division of Transportation Solutions (Traffic Section). This Division is responsible for traffic-related analysis and design. The installation and maintenance of signing and pavement marking is assigned to DelDOT's Central District office.

All roadway signs in the county were replaced by 2000, and this re-signing effort will be repeated starting in 2008. Priority for roadway signage replacement was given to new signs or sign changes such as revised speed limits.

Kent County has several major corridors with coordinated signal systems that are operated from DelDOT's Transportation Management Center in Smyrna. These corridors include:

- US 13 (through Smyrna)
- US 13 (Camden to north Dover)
- US 113 (SR 36 to north Milford)
- SR 8 (west Dover)
- SR 10 (US 13 to Dover Air Force Base)

In addition, most of the signals in Kent County are equipped with a preemptive system to allow ambulance and fire trucks to trigger a green light at intersections, so they can decrease their response time to emergencies.

Of particular recent interest is the City of Dover Signalization Improvements Program. Following a period of survey and design, construction of the first signal improvements under this program began in November 2006, at the intersection of Division and Ridgley streets. The project involves a total of 18 signalized intersections located in downtown Dover, initially owned and maintained by the city of Dover. As of January 2007, DelDOT assumed ownership and maintenance responsibilities for all 18 intersections.

Under this project, existing traffic signals are replaced with ornamental mast arms and signal and pedestrian poles. Signal controller and detection equipment is also upgraded as necessary to improve traffic flow. A crucial step in the process involves linking each City of Dover traffic signal to the DelDOT Transportation Management Center (TMC), via various communication technologies. This allows DelDOT to modify traffic signal timings as necessary to provide for efficient traffic flow, both during and after construction. Construction was completed in May 2008.

The project is being constructed one intersection at a time. Several intersections were included in this project, involving several local streets (see **Exhibit 3.13**).

Exhibit 3.13: City of Dover Signalization Improvements

Route	Intersection
Division Street	Ridgley Street Queen Street New Street Governors Avenue State Street
State Street	Reed Street
West Loockerman Street	Queen Street New Street Governors Avenue State Street Legislative Avenue
North Street	Queen Street New Street Governors Avenue State Street
Water Street	Queen Street Governors Avenue State Street

Source: Delaware Department of Transportation, 2007

3.1.7 Safety

An indicator of roadway safety is the number and type of motor vehicle crashes. In 2006, there were a total of 19,351 vehicle crashes in the State of Delaware. In that year, Kent County accounted for 2,755 of these accidents, 13.9 percent of the state total, which was fewer crashes than experienced in Delaware's other two counties. Between 2003 and 2006, there was a 13 percent decrease in the rate of vehicle crashes per million VMT in the county, as seen in **Exhibit 3.14**. In 2006, 32 fatal crashes occurred in Kent County. While the number of crashes increased slightly and the crash rate decreased between 2003 and 2006, the number of fatal crashes has increased significantly in Kent County since 2003.

Exhibit 3.14: Kent County Motor Vehicle Crashes by Injury Severity (1990-2006)

Year	1990	2000	2001	2002	2003	2004	2005	2006
VMT (millions)	1,157	1,349	1,353	1,358	1,466	1,622	1,659	1,680
Total Crashes	2,853	1,837	2,357	2,610	2,747	2,697	2,765	2,755
Rate (per million VMT)	2.47	1.36	1.74	1.92	1.87	1.66	1.67	1.64
Injury Crashes	949	517	930	1,020	959	974	976	906
Rate (per million VMT)	0.82	0.38	0.69	0.75	0.65	0.60	0.59	0.54
Fatal Crashes	29	7	22	19	15	26	29	32
Rate (per million VMT)	0.025	0.005	0.016	0.014	0.010	0.016	0.017	0.019

Sources: Delaware Department of Transportation, Delaware State Police

Persons involved in fatalities are also an important indicator of safety. Of the fatalities that occurred in 2006, 91.8 percent involved the driver or passenger of a vehicle, 6.8 percent involved pedestrians, and 1.4 percent involved bicyclists, as seen in **Exhibit 3.15**. These percentages compare closely with that of the state overall.

Exhibit 3.15: Percent of Total Fatalities by Person Involved (2006)

	Driver or Passenger of a Motor Vehicle In Transport	Pedestrian	Bicyclist
Kent County	91.8%	6.8%	1.4%
Statewide	89.8%	8.9%	1.2%

Source: Fatality Analysis Reporting System (FARS)

In 1998, after noticing that efforts in reducing fatalities were stalling, the American Association of State Highway and Transportation Officials (AASHTO) initiated the Strategic Highway Safety Plan (SHSP) and encouraged various state agencies in the nation involved in highway safety to coordinate to develop innovative strategies to reduce fatalities on America's highways. In September 2003, USDOT Secretary Mineta set a goal to reduce the nationwide fatality rate to 1.0 per 100 million vehicle miles traveled by 2008. As a result, in September 2006, the State of Delaware released its own SHSP. The vision statement of Delaware's Strategic Highway Safety Program is to reduce the number of traffic fatalities to 100 or fewer per year, or to achieve a fatality rate of 1.0 per 100 million vehicle miles traveled[4]. This goal applied to Kent County would mean reducing the number of traffic fatalities by half.

This plan created nine areas of focus for the state:

- Emphasis Area #1: Curbing Aggressive Driving
- Emphasis Area #2: Reducing Impaired Driving
- Emphasis Area #3: Increasing Seatbelt Usage
- Emphasis Area #4: Improving Pedestrian Safety
- Emphasis Area #5: Making Truck Traffic Safer
- Emphasis Area #6: Keeping Vehicles on the Roadway
- Emphasis Area #7: Minimizing the Consequences of Run-off-Road Crashes
- Emphasis Area #8: Designing Safer Work Zones
- Emphasis Area #9: Improving Information and Decision Support Services

The Federal Highway Safety Improvement Program (HSIP) aims to reduce crashes by improving roadway design. Each year, DelDOT identifies sites in the Dover/Kent MPO region that meet the HSIP criteria for inclusion in the program. The sites are reviewed to determine the principal type of accidents, conditions, and severity. From this information, an assessment is made as to whether the location can be made safer with a focus on low-cost high-benefit improvements such as roadway pavement marking or signing, or if a more detailed engineering study is needed. All locations identified in the HSIP are evaluated under these criteria.

Between 2002 and 2005, the HSIP identified 27 sites in the MPO region. The number of HSIP sites added per year is shown in **Exhibit 3.16**. Of the 27 total sites in the county, seven are located on US 13 and three are located on US 113.

[4] http://www.deldot.gov/information/pubs_forms/manuals/shsp/2006_delaware_shsp.pdf

Exhibit 3.16: Number of HSIP Sites by Year (2002-2005)

Year	Number of HSIP Sites
2002	5
2003	8
2004	2
2005	12

Source: DelDOT

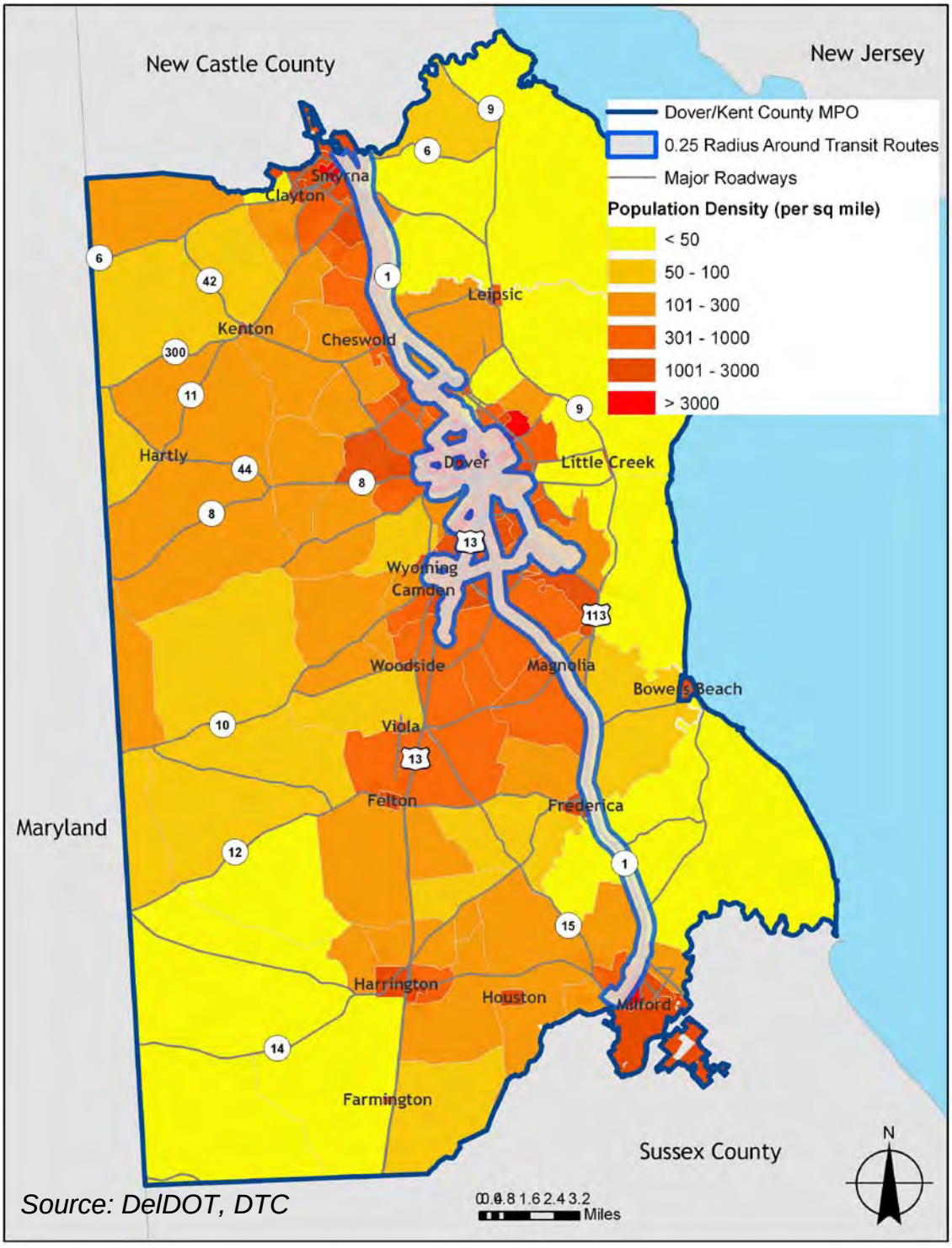
As the region continues to develop in an auto-dependent pattern and VMT subsequently increases, the number of crashes may also increase. DelDOT maintains a crash database to analyze the high-crash locations and identify the possible need for roadway improvements. Continued similar site-specific analysis and remedy will be necessary as increasing travel demand creates growing congestion conditions, which contribute to driver failure and increased accidents.

3.2 Public Transportation

Public transportation includes a broad range of services in Kent County, including local bus, express bus, intercounty bus, paratransit, and subsidized taxi. Public transit service is provided in Kent County by Delaware Transit Corporation (DTC), operating as DART First State. The success of public transportation is dependent upon adequate density to support it and must be considered with future development patterns.

Approximately 46,000 residents in Kent County are within one-quarter mile of transit services, the typical distance considered reasonable for someone to access fixed-route services. **Exhibit 3.17** highlights these areas within one-quarter mile of transit.

Exhibit 3.17: Areas within One-Quarter Mile of Existing Transit Service



3.2.1 DART First State South District

DART First State's South District provides service in Kent County focused around a radial/loop pattern from the Water Street Transfer Center in downtown Dover. The system provides basic mobility for the city's transit-dependent households; accessibility to the state capital, Dover Air Force Base, Dover's downtown area and nearby colleges; and circulation

throughout the Dover community. These bus routes provide enough spatial coverage to bring almost all parts of the city within walking distance of a transit stop.

Twelve fixed routes serve the Dover area, operating between 6:00 a.m. and 6:00 p.m. on weekdays. In addition, a successful pilot began in June 2008, providing transit service on Saturdays, with five routes operating between 9:00 a.m. and 6:00 p.m. The Dover routes meet the Intercounty Route 301 service that operates between Dover and Wilmington, and the Route 303 service that operates between Dover and Georgetown via Milford. The Harrington/Dover Shuttle connects with Bus Route 104 at Mifflin Meadows, and serves communities between there and the City of Harrington. All of the Dover-area bus routes operate on regular and evenly-spaced time intervals in a timed-transfer system, pulsing from the Water Street Transfer Center. All but four of DTC's routes in Kent County operate at headways, intervals between laps, of 60 minutes. The remaining routes operate at 30-minute headways.

Transit service in Kent County is less intensive than that in New Castle County, reflecting the comparatively smaller and less dense population in the county. To attempt to better serve transit-dependent persons at night, DTC launched GoLink Night Service in 2003 to more effectively utilize the county-wide paratransit bus equipment to transport all transit customers. This service operates between 6:00 p.m. and 9:00 p.m. with advance reservations. Passenger trips increased from 603 in fiscal year (FY) 2004 to 1,341 trips as of the end of June, 2008..

Flex Service is also provided within the Dover area, where low-performing fixed routes can deviate from a fixed route to pick up customers nearby with advance reservations. This service provides more accessible service to communities and customers who do not have direct access to fixed-route service. Flex service essentially expands transit service into low-density areas, using existing resources.

DART Route 305, the Beach Connection, links New Castle and Kent counties with the Rehoboth park-and-ride and Resort Transit.

A fleet of medium-sized buses is housed and maintained at the DelDOT complex in Dover. In 2008, this transit fleet logged 461,124 vehicle miles and 35,558 vehicle hours representing an increase of 13 percent from 2002 in miles and 15 percent in hours. **Exhibit 3.18** provides operating statistics for DART First State South Fixed Route Transit in Kent County. Ridership increased from 308,716 passenger trips in 2002 to 409,942 trips in 2008, approximately 33 percent. In Kent County, nearly half the riders of transit continue to be high school or university students, while the remaining riders are largely transit-dependent with little discretionary trip-making occurring. Primary trip destinations continue to include school, work, medical services, and shopping, with the most utilized bus stops located at attractors such as Dover Downs, shopping centers, and social service agencies.

Exhibit 3.18: Kent County Fixed-Route Operating Statistics (2002-2007)

Measure	2002	2003	2004	2005	2006	2007	2008
Miles	408,430	408,528	426,806	486,068	471,537	462,295	461,124
Hours	30,933	30,820	31,674	35,943	35,924	35,725	35,558
Passenger trips	308,716	303,914	308,759	340,856	364,781	376,223	409,942
Trips/mile	0.76	0.74	0.72	0.70	0.77	0.81	0.89
Trips/hour	9.98	9.86	9.75	9.48	10.15	10.53	11.53

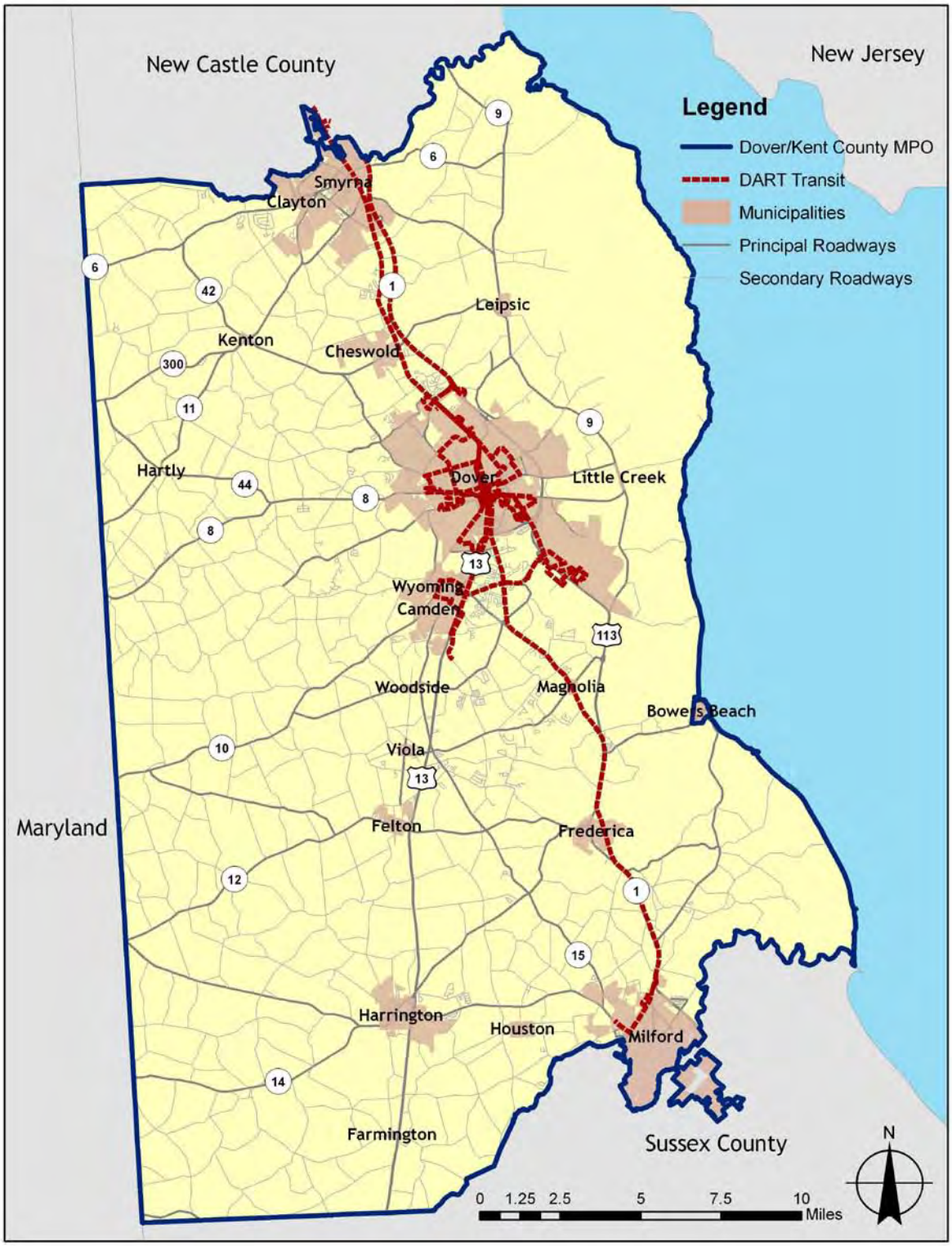
Source: Delaware Transit Corporation

In terms of future expansion plans, DART has outgrown the Water Street transit hub and has purchased the former George and Lynch property at Water and Queen Streets, to support a new transit center in Dover. With conceptual plans completed in 2005, the new transit center is expected to significantly improve passenger facilities including an indoor waiting room, ticket sales, real time passenger information, and other amenities. In addition to supporting DART's local, paratransit, and intercounty services, the transit center will support privately-run intercity bus services. The site is adjacent to the Norfolk Southern railroad and has been identified as the future Dover Station for downstate commuter rail.

Bus expansion proposals for Kent County listed in DTC's Business Plan for FY2008-2013 include Smyrna-Cheswold-Dover service (2011) to support growth in these areas, and to meet additional demand for local service, including commuters to and from Dover. In addition to the Saturday service begun in Kent County as previously described, proposed is the addition of Sunday service statewide in 2015. Intercounty service expansions are also proposed, to increase the frequency of service to meet growth and demand in New Castle and Kent counties. This would include specific intercounty service between Glasgow-Newark-Dover (2013) to serve as a regional connection for growth in southwestern New Castle County and Dover.

DTC continues to make progress toward making all bus stops compliant with Americans with Disabilities Act (ADA) regulations. Facilities are provided at stops generally based on ridership at that particular location. The most heavily-used bus stops are afforded a bench and shelter or other protection from the elements. As more funding becomes available, provision for ADA accessibility and stop amenities will progress in priority order based on need and ridership levels.

Exhibit 3.19: DART First State Transit Routes



Source: DTC

Exhibit 3.20: DART's Dover Transit Routes

3.2.2 Paratransit Services

The ADA of 1990 requires transit agencies to provide paratransit services for eligible riders within 3/4-mile of the alignment of fixed-route services. DART First State provides statewide door-to-door bus service for individuals who are unable to use fixed-route bus service due to age or disability. Paratransit and special transit demand-response services are available in other parts of Kent County for elderly and disabled residents.

3.2.2.1 Senior Citizens Affordable Taxi (SCAT)

The SCAT program provides a 50 percent discount on taxi fares for senior citizens, and persons with disabilities which prevent them from operating a motor vehicle. There are five privately-owned cab companies throughout the state that provide the taxi service, and are reimbursed by the state. In Kent County, City Cab of Dover and Watkins Cab of Milford provide these services.

3.2.2.2 Federal Section 5310 Pledge Program

This Federal Transit Authority (FTA) and state jointly-funded program is administered by the state. The program provides capital funding to private and public social service agencies for the purchase of vehicles to provide transportation to the elderly and disabled. The vehicles are used by private, non-profit organizations such as senior centers, community centers, churches, nursing homes, and other social service agencies and community-based organizations to provide transportation to their clients for shopping, medical appointments, and recreation. Volunteer drivers, as well as agency-paid drivers, help operate the service. In 2006, the FTA Section 5310 program provided 346,185 trips for the residents of Delaware.

3.2.2.3 Kent-Sussex Reimbursable Program

Through the Kent-Sussex Reimbursable Program, the state provides operating funds and paratransit fare subsidies for elderly and disabled residents in Kent and Sussex counties. The funds are administered through local governments and social service agencies. Services are provided on demand with prior arrangement. Vehicles are equipped with wheelchair lifts.

Exhibit 3.21: Kent County Paratransit Operating Statistics (2003-2007)

	2003		2004		2005		2006		2007	
Measure	**Kent**	**Statewide**	**Kent**	**Statewide**	**Kent**	**Statewide**	**Kent**	**Statewide**	**Kent**	**Statewide**
Fleet	45	192	49	193	52	201	47	202	48	225
Miles	1.2	6.18	1.44	7.14	1.5	7.8	1.6	8.2	1.6	8.6
Hours	69,522	329,337	78,621	369,701	89,284	439,265	92,621	464,598	93,877	469,476
Passenger Trips	130,214	568,890	150,243	648,698	157,346	711,692	169,171	791,755	176,716	811,907
Trips/Mile	0.11	0.09	0.1	0.09	0.1	0.09	0.1	0.09	0.11	0.09
Trips/Hour	1.87	1.73	1.91	1.75	1.76	1.62	1.83	1.70	1.88	1.73

Source: Delaware Transit Corporation

3.2.3 Intercity and Intercounty Bus Service

The DART First State intercity transit operation provides service with stops in Smyrna, Dover, Magnolia, Milford, and Harrington. Kent County bus service includes connections with Intercounty Routes 301 and 303. Route 301 operates between Dover and Wilmington. Route 303 operates between Dover and Milford.

According to the *Kent County Coordinated Transit/Transportation Plan*, DTC operates a highly successful intercounty route from Wilmington to Dover via SR 1. The overall goal of the route is to reduce the one-way travel time to make it comparable to the single-occupant vehicle. Route 301 operates ten local round trips and six one-way express trips, during weekdays between 4:38 a.m. and 8:48 p.m.

Exhibit 3.22: Kent County Intercity Operating Statistics (2003 – 2007)

Measure	2003	2004	2005[5]	2006	2007
Miles	460,317	427,331	386,082	218,548	217,690
Hours	13,867	14,606	14,336	9,868	9,828
Passenger Trips	111,858	115,130	82,778	36,846	36,404
Trips/Mile	0.24	0.27	0.21	0.17	0.17
Trips/Hour	8.07	7.88	5.77	3.73	3.70

[5] In 2005, DTC began operating Route 301 and 305 and the statistics from that point were captured under New Castle Operating Statistics.

3.2.4 Get-a-Job Get-a-Ride Program

The Get-a-Job Get-a-Ride Program is a DART program for any qualified individual, employed in the State of Delaware, to obtain a free three-week bus pass that will provide them with transportation on any of DART's fixed-route bus routes and paratransit, for their first three weeks of work.

3.2.5 Other Value-Added Services

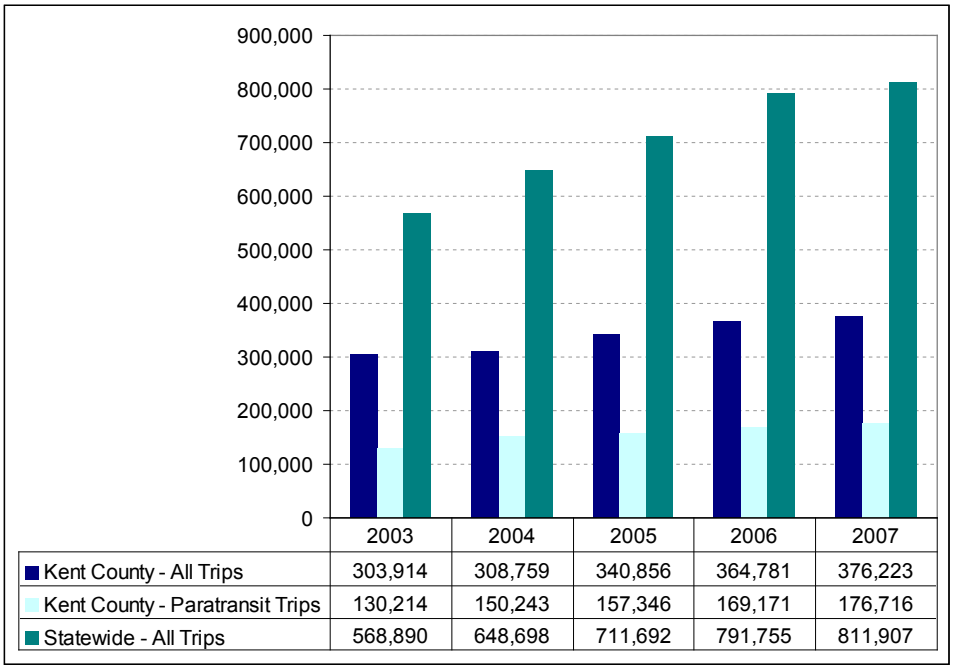
As identified in *Transitioning to Transit, Delaware's Long-Range Transit Plan for the 21st Century: Long-Range Plan 2000-2025*, these additional services are provided by DTC:

- *Travel Training* – Teaches people how to use transit services.
- *Register for Your Future* – Provides free bus service to students registered in adult education classes.
- *Business Partners in Transit* – Educates employers about transit programs and tax credits.
- *Community Partners in Transit* – Works with education, community, and youth groups to encourage transit use and ride-matching service.
- *Mobility Brokerage* – Finds alternative transportation solutions when regular fixed-route services can not meet customers' needs.
- *TransitChek* – Helps employers subsidize employees' transit use.
- *Job Works!* – Provides clients of job placement agencies with free bus transportation to job interviews.

3.2.6 Public Transportation Ridership

Kent County has experienced an increase in its transit ridership in recent years. All passenger trips have increased from 303,914 in 2003 to 376,223 trips in 2007, representing a 24 percent increase in ridership. At the same time, statewide, ridership increased from 568,890 in 2003 to 811,907 riders in 2007, representing an even greater increase of 43 percent. Kent County also experienced an increase in paratransit ridership. In 2003, there were 130,214 paratransit trips while that number grew to 176,716 in 2007, representing a 36 percent increase.

Exhibit 3.23: Kent County and Statewide Passenger Trips (2003-2007)



	2003	2004	2005	2006	2007
Kent County - All Trips	303,914	308,759	340,856	364,781	376,223
Kent County - Paratransit Trips	130,214	150,243	157,346	169,171	176,716
Statewide - All Trips	568,890	648,698	711,692	791,755	811,907

Source: Delaware Transit Corporation

3.3 Ridesharing

Programs of DART First State include Park-and-Ride/Pool locations, carpooling and vanpooling, school pool, the Home Free Guarantee program, the rewards discount car program, and transit programs.

3.3.1 RideShare Delaware

Ridesharing refers to modes of travel that are alternatives to single-occupant vehicle travel, including carpooling, vanpooling, and taking the bus or train. In 2006, approximately 9.4 percent of Delaware commuters shared a ride to work. Each benefited by saving money in fuel and vehicle maintenance costs, and reducing air pollution and traffic congestion. This compares to the national average of 10.7 percent of commuters.

DART's RideShare Delaware is dedicated to aiding commuters with finding and using alternative modes of transportation. RideShare Delaware is a free public service of DART First State. Funded with a combination of federal Congestion, Mitigation & Air Quality (CMAQ) and state dollars, the goal of the program is to reduce the number of single-occupant vehicles (SOVs) traveling on Delaware's roadways, thus improving our air quality. RideShare works in partnership with local and regional agencies toward meeting federal air quality standards. DART's RideShare Delaware offers free ridematching services for commuters working in the state and for parents of Delaware school students. It includes an emergency-ride-home benefit for registered commuters actively ridesharing to work, vanpool services, and transportation benefit assistance to employers in Delaware. Currently, approximately 459 residents in Kent County are involved in RideShare Delaware, about 12 percent of the total program participants statewide. This includes 314 employees working at 135 Kent County worksites. The largest employer in Kent County offering ridesharing benefits is the State of Delaware.

3.3.2 Park-and-Ride/Pool Lots

An effective Ridesharing program offers alternative methods to accommodate commuters sharing transportation. To do so, DelDOT offers locations to meet.

Park-and-Ride lots in Kent County are located at (see **Exhibit 3.24** and **Exhibit 3.25**):

- Smyrna Rest Stop,
- Delaware Agricultural Museum,
- Water Street Transfer Center,
- Faith Community Church, and
- Scarborough Road Park-and-Ride,
- St. Andrew's Lutheran Church,
- Holy Cross Church,
- Milford Bowling Lanes.

Park-and-Pool lots are located at:

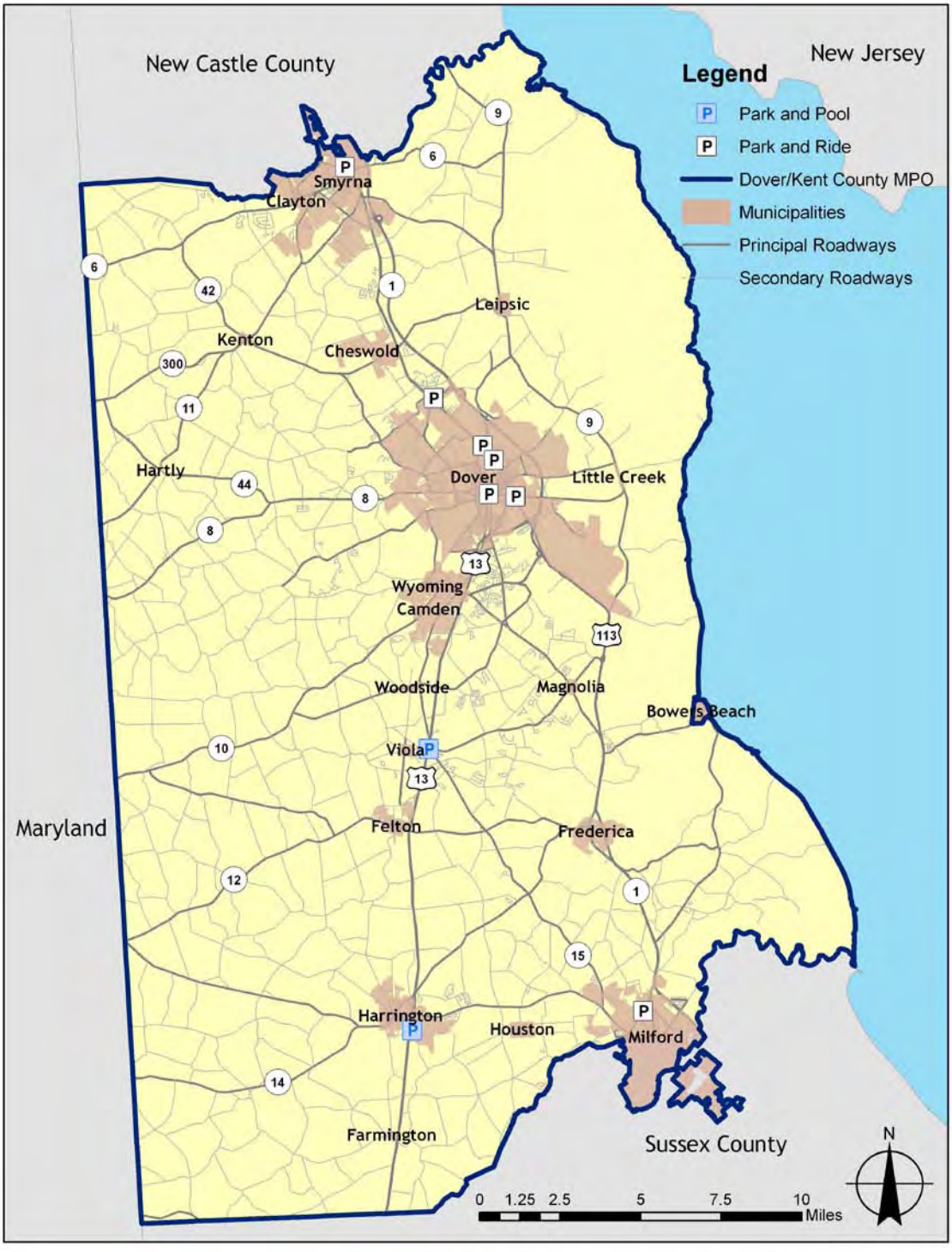
- Shore Stop and
- Harrington Moose Lodge.

Exhibit 3.24: Kent County Park-and-Ride and Park-and-Pool Facilities (2000)

Location	Address	Parking Spaces	Bus Routes	Daily Use	Usage Rate (1998)	Usage Rate (2000)	Change in Usage
Park-and-Ride							
Delaware Agricultural Museum	DuPont Highway, Dover	40	109, 112	10	11%	20%	82%
St. Andrew's Lutheran Church	DuPont Highway, Dover	15	108, 109	5	4%	33%	725%
Holy Cross Church	South State Street, Dover	25	105, 303	5	8%	20%	150%
Faith Community Church	DuPont Highway, Dover	15	104, 303	0	27%	Unknown	N/A
Scarborough Road Park-and-Ride	DuPont Highway, Dover	100	112, 301, 305	19	33%	19%	-42%
Milford Bowling Lanes	DuPont Highway, US 113	20	303	3	N/A	15%	N/A
Smyrna Rest Stop	Between US 13 & DE 1, Smyrna	75	301, 305	23	N/A	31%	N/A
Water Street Transfer Center	Dover	75	101-109, 112, 113, 301, 303	23	N/A	31%	N/A
Park-and-Pool							
Shore Stop	DuPont Highway, Canterbury	15		2	25%	13%	-48%
Harrington Moose Lodge	US 13 Harrington	15		0	11%	Unknown	N/A
MPO Total		**395**	**67**		**N/A**	**21%**	N/A

Source: DelDOT

Exhibit 3.25: Map of Kent County Park-and-Ride and Park-and-Pool Facilities



Park-and-Pool lots provide convenient parking and a place where commuters can meet carpools or vanpools. From Park-and-Ride lots, commuters can use a variety of modes of transportation such as buses or shuttles. Kent County has facilities and services that promote ridesharing (carpooling and vanpooling). Lot utilization in Kent County is the second highest in the state (26 percent), followed by Sussex County. Kent County has 11 designated public park-and-ride locations, with an average usage of 10 vehicles per weekday,

as listed in Exhibit 3.24. Nine of the lots are official while the rest are considered unofficial. The majority of the lots are within a few miles of downtown Dover, which is located centrally in Kent County. Also, the Statewide Employees Vanpool Program operates in the county. In 1995, fourteen state employee vanpools were operating in Kent County. Fleet Links, which took over the operation of vanpools from DTC, has increased the number to 30 as of 2000. The 50 percent increase in a five-year span demonstrates the commitment of employees to vanpooling.

3.4 Bicycle and Pedestrian Facilities

Delaware law allows bicycling and pedestrian access on all roadways, except for limited-access expressways (functional classifications of Interstate and SR 1 north of the toll in south Dover) or in exceptional circumstances where specifically prohibited. Some roadways have specific design components intended to provide for bicycle travel, such as bike lanes or wide curb lanes/shoulders, whereas on other roadways, bicyclists must ride in the travel lane. Similarly, sidewalks are common pedestrian facilities within urbanized areas, but less common in outlying rural areas. Pedestrians must walk on sidewalks, or if not available, facing traffic as far off to the side of the roadway as possible. Pedestrians also should cross roadways at designated crossings or intersections where provided.

As stated in the Dover Comprehensive Plan Update *From the People-For the People*(2003, amended 2005), and reiterated in the 2008 Comprehensive Plan, bikeways and pedestrian ways along collector and arterial streets are fragmented. There are some "Share the Road" signs posted to increase motorists' awareness of the presence of bicyclists and pedestrians. The City of Dover still lacks a completely interconnected transportation system; however, the city now requires that sidewalks be constructed and DelDOT typically requires bike lanes as part of any new development or redevelopment application.

3.4.1 Overview of Types of Facilities

AASHTO has developed a classification system for bicycle facilities. This system designates four classes of bicycle facilities: Shared Roadways (no Bikeway Designation), Signed Shared Roadways, Bike Lanes, and Shared Use Paths.

Shared Roadways (no Bikeway Designation) refers to roadways that are not specifically designated as bicycle routes. Bicycle travel is legal and allowed on these roadways (except where specifically prohibited, such as on limited-access expressways as described above), but they lack signs, striping, or other designations that identify them for use by bicycles. Most roads in Kent County fall under the Shared Roadways (no Bikeway Designation) category.

Signed Shared Roadways have been specifically identified as preferred routes for bicyclists, with "Bike Route" signs. These roadways do not provide specific travel lanes for bicycles, but may include paved shoulders, wide curb lanes, or other features that make the route better-suited to bicycle travel.

Bike Lanes are on-street travel lanes reserved for use exclusively by bicycles. They are designated by lane markings and signs, and are typically provided on corridors where higher levels of bicycle use are anticipated, and where separation of motorists and bicycles is beneficial.

Shared Use Paths are off-street trails that serve both bicycles and pedestrians. These paths often serve both recreational and transportation purposes. Such paths are currently only provided in state and local parks in the county.

Sidewalks are generally intended for use by pedestrians only, though bicycles are also allowed to use sidewalks in most areas, provided that they travel at a safe (slow) rate of speed and grant right-of-way to pedestrians. Sidewalks are more commonly provided in towns and urbanized areas, and rarely along more rural roadways. Pedestrians may when sidewalks are not present, use roadway shoulders.

3.4.1.1 Existing Bikeways

DelDOT has identified a number of statewide and regional bikeways in Kent County. The *Delaware Bicycle Facilities Master Plan (2005)* identified 80 miles of Statewide Bicycle Routes, 114 miles of Regional Bicycle Routes, and 307 miles of Recreational Connectors in Kent County (see **Exhibit 3.26**). These bikeways (see **Exhibit 3.27**) are predominantly located on paved shoulder roadways, though many do not have "Bike Route" signs and therefore are not Signed Shared Roadways. Some of these corridors do have "Share the Road" signs intended to increase motorist awareness of bicyclists along the route.

While there are no major physical barriers to bicycling in Kent County, traffic conditions in heavily-traveled areas such as US 13 and US 113 may create local safety concerns to less-experienced bicyclists.

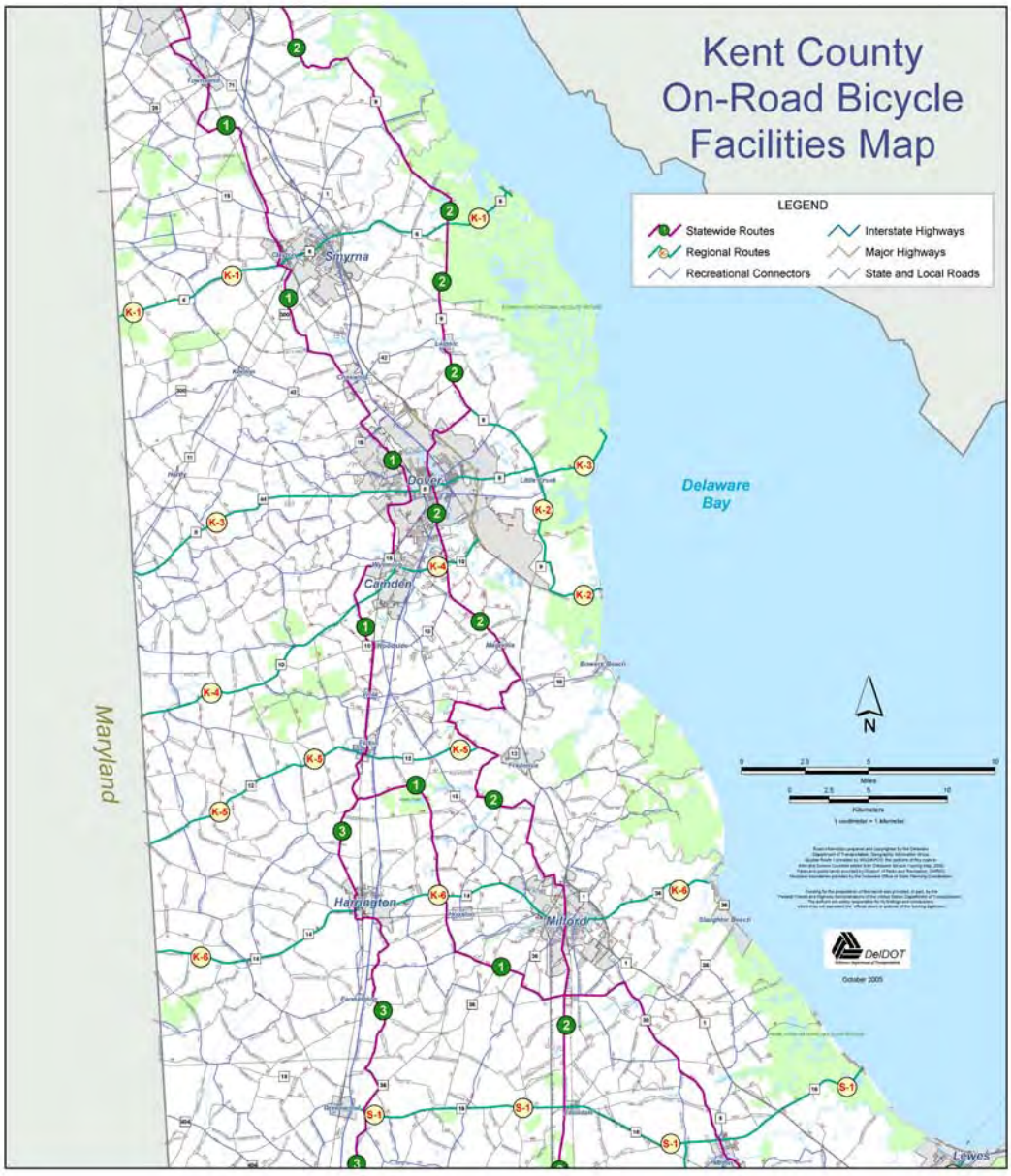
Exhibit 3.26: Designated Statewide and Regional Bicycle Routes in Kent County

Bicycle Routes			Roadways Followed	Length (miles)	Municipalities and Activity Centers Served
Statewide Bicycle Routes	1	Bicycle Route 1	-	38	Clayton, Cheswold, Dover,Wyoming, Felton, Houston
	2	Wilmington-Selbyville	-	42	Leipsic, Dover, Magnolia, Frederica, Milford, Cedar Swamp Wildlife Area
Regional Bicycle Routes	3	Delmar to Felton	-	12	Harrington, Farmington
	K-1	MD Border To Woodland Beach	SR 6 to Woodland Beach	18	Clayton, Smyrna, Woodland Beach Wildlife Area
	K-2	NE Dover To Kitts Hummock/Delaware Bay	SR 9/CR 337 to US 1	11	Little Creek, Little Creek Wildlife Area, Dover Air Force Base, John Dickenson Plantation, Kitts Hummock
	K-3	MD Border To Port Mahon	SR 8, SR 9,to Port Mahon Road	24	Dover, Little Creek, Port Mahon
	K-4	MD Border To Dover Air Force Base	SR 10 to US 113	16	Wyoming, Camden, Dover Air Force Base

Bicycle Routes			Roadways Followed	Length (miles)	Municipalities and Activity Centers Served
	K-5	MD Border To W. Frederica	SR 12 to SR 12/CR 380	14	Felton, Frederica
	K-6	MD Border to Slaughter Beach	SR 14 at MD Border to SR 36 in Sussex County	19	Harrington, Houston, Milford, Slaughter Beach, Milford Neck Wildlife Area

Source: Delaware Bicycle Facilities Master Plan, 2005

Exhibit 3.27: Kent County Bicycle Facilities Map



Source: DelDOT

3.4.1.2 Existing Pedestrian Facilities

Sidewalks are the primary type of pedestrian facility in the region, although pedestrians may use bike paths, bike trails, greenways, and paved shoulders (walking facing traffic) when no sidewalk is present. According to 2004 DelDOT Pedestrian Facility data, there are 25.3 miles of footpaths, over 400 miles of sidewalk,[6] and nearly seven miles of crosswalks in Kent County.

Bicyclists are legally permitted on sidewalks unless specifically prohibited such as in certain downtowns or other locations where potential conflicts with pedestrians are high. However, sidewalks are not intended to accommodate most bicyclists, who can reach speeds of 15-20 miles per hour. Pedestrians travel at about three miles per hour.

As previously stated, sidewalks are less common in outlying unincorporated areas. DelDOT maintains an inventory of roadways with sidewalks in municipalities and in suburban developments. Statewide, Delaware has 784.19 miles of roadway with sidewalks on both sides, and 206.4 miles of roadways with sidewalks on one side.

Exhibit 3.28 lists miles of roadways with sidewalks in Kent County. There are slight increases since 1994 in Kent County—approximately one mile more of one-sided sidewalks and three miles more of double-sided sidewalks. Kent County accounts for 10.9 percent of the statewide total for miles of roadways with sidewalks on both sides, and 14.8 percent of the total for miles of roadways on one side only.

Exhibit 3.28: Roadways with Sidewalks, Kent County, 2000

	Roadways in Miles – 1994		Roadways in Miles – 2000	
	One-sided Sidewalk	Double-sided Sidewalk	One-sided Sidewalk	Double-sided Sidewalk
Kent County	29.55	82.45	30.57	85.26
Statewide	NA	NA	206.4	784.19

Source: DelDOT

According to 2004 DelDOT Pedestrian Facility data as presented in **Exhibit 3.29**, within Kent County there are 25.3 miles of footpaths, over 400 miles of sidewalk, and nearly 7 miles of crosswalks. **Exhibit 3.30** shows the areas where sidewalks, footpaths and/or crosswalks are present in the county.

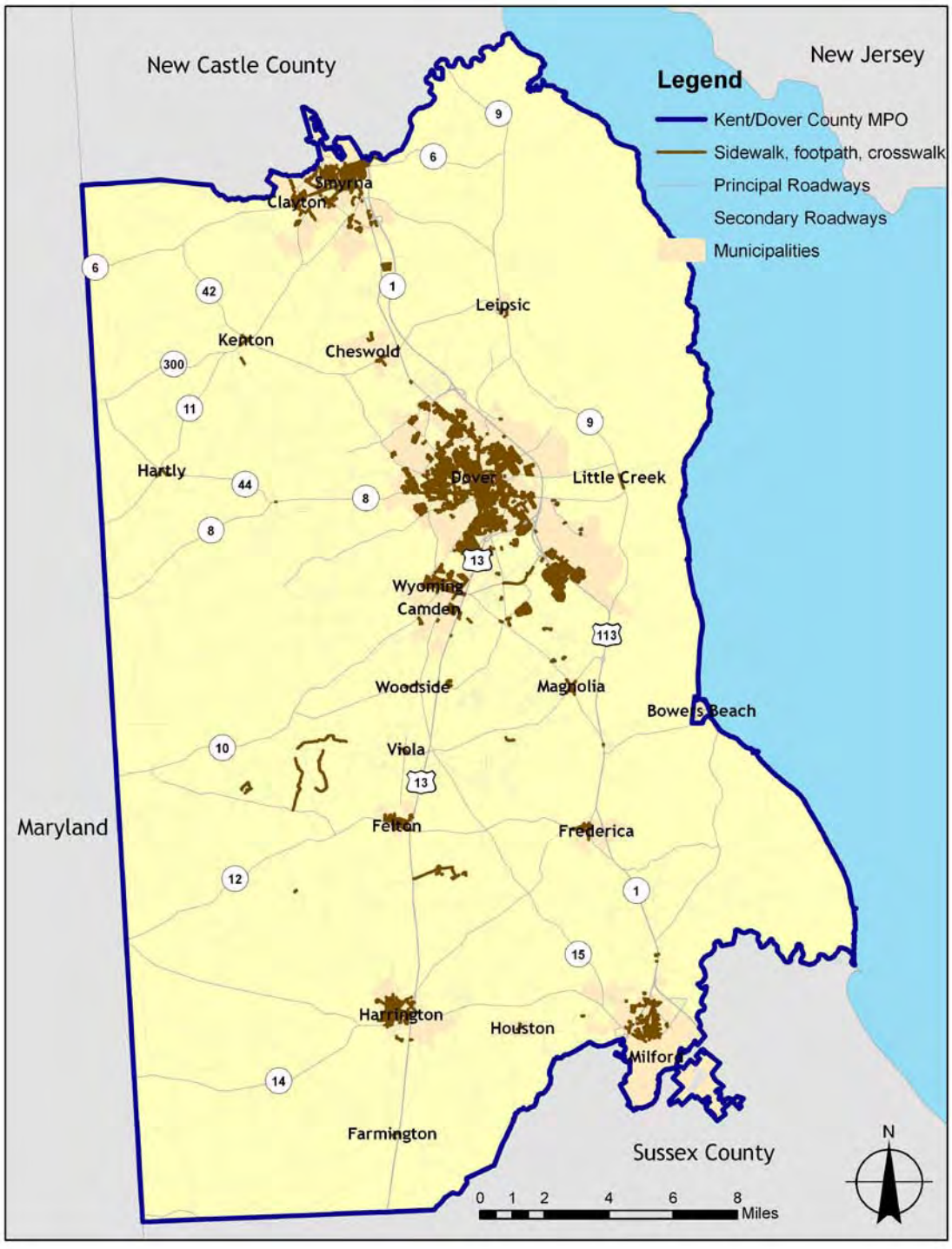
Exhibit 3.29: Type of Pedestrian Facility

Type of Facility	Distance (Miles)	Percent of Total
Crosswalk	6.7	1.5%
Footpath	25.3	5.7%
Sidewalk	409.8	92.8%
Total	**441.8**	**100.0%**

Source: 2004 DelDOT Statewide Sidewalk Database

[6] While sidewalks are paved, non-permeable surfaces, footpaths are not.

Exhibit 3.30: Sidewalks, Footpaths, and Crosswalks in Kent County



3.4.2 Bicycle and Pedestrian Planning

DelDOT is actively updating the state's long-range bicycle plan that will address the bicycle facilities at both the route and policy levels. The Pedestrian Action Plan and Bicycle Facilities Plan will guide efforts to improve bicycle and pedestrian opportunities in Delaware and its counties.

The City of Dover requires new sidewalk and bicycle facilities for all development projects. The *US 13 Pedestrian Improvements* project proposed pedestrian improvements to provide a safer travel environment for pedestrian and transit customers. Improvements were needed due to lack of sidewalks, crosswalks, pedestrian mobility restrictions due to lack of curb cuts, and lack of protection or pedestrian signals to assist them.

3.4.2.1 DelDOT Pedestrian Action Plan

DelDOT is in the process of developing its statewide pedestrian action plan. This plan will address and propose solutions to identified key issues in an effort to make walking a safe, convenient, efficient and comfortable means of transportation. Currently no such plan exists and there is a recognized need to lay the groundwork for the provision of pedestrian infrastructure along state-maintained roadways.

3.4.2.2 DelDOT Bicycle Facilities Plan

The *Delaware Bicycle Facility Master Plan (2005)* was developed in order to define and implement a statewide system of designated, on-road bicycle routes. The Bicycle Facility Master Plan will be considered in conjunction with several other policies and programs including the DelDOT Rails-to-Trails Program, and local and regional bicycle master plans. The Plan recommends 92 miles of Statewide Bicycle Routes, 102 miles of Regional Bicycle Routes, and 307 miles of Recreational Connectors in Kent County.

The overall purpose of the plan is to recognize bicycling as an integral part of the transportation system and provide for suitable accommodations for bicycles on the statewide roadway network. Implementation of the plan will achieve the following goals:

- Integrate existing bicycle routes and trails to a larger, statewide bicycle network.
- Establish bicycle routes between municipalities, activity centers, and recreational areas throughout the state.
- Tie bicycles to other modes, creating availability for mode share and reducing the need for single-occupant vehicles, particularly for work trips.

3.4.3 Design of Facilities

The careful design of crosswalks, traffic signals, medians, overpasses, underpasses, bicycle parking, and pedestrian plazas further supports bicycling and walking. These facilities may be particularly critical for children, senior citizens, and disabled pedestrians. Related facilities such as bicycle parking are also necessary at commercial destinations, employment sites, and public transit connections. DelDOT has installed high-security clamp-type bike racks at many park-and-ride lots across the state, and employers are encouraged to do the same.

The most significant pedestrian improvement project underway is to provide sidewalk connections throughout the US 13 corridor in Dover.

3.4.3.1 "Complete streets"

Complete streets are designed and operated to enable safe and efficient access for all users. DelDOT, Kent County and Dover have adopted measures to improve bicycle and pedestrian facilities as a standard course of business. Most new roadway projects consider the need of, and include improvements for, multi-modal facilities. In addition, through the

land development process, more stringent requirements have been imposed on developers to include sidewalks and/or shared use paths in conjunction with their projects. Also, various types of traffic calming devices may facilitate pedestrian travel by slowing motor vehicle travel, increasing visibility, and providing pedestrian crossing refuge islands. Two suburban developments in Kent County have utilized traffic calming features, primarily speed humps, on their streets. Downtown Dover uses sidewalk bulb-outs, textured pavements, on-street parking, and a traffic-diverter to calm traffic and create a more pedestrian-friendly environment.

Roadway projects with planned bicycle facilities will be based on the new bicycle facility design guidelines established in both the Facility Plan and the Road Design Manual.

3.4.4 Safety

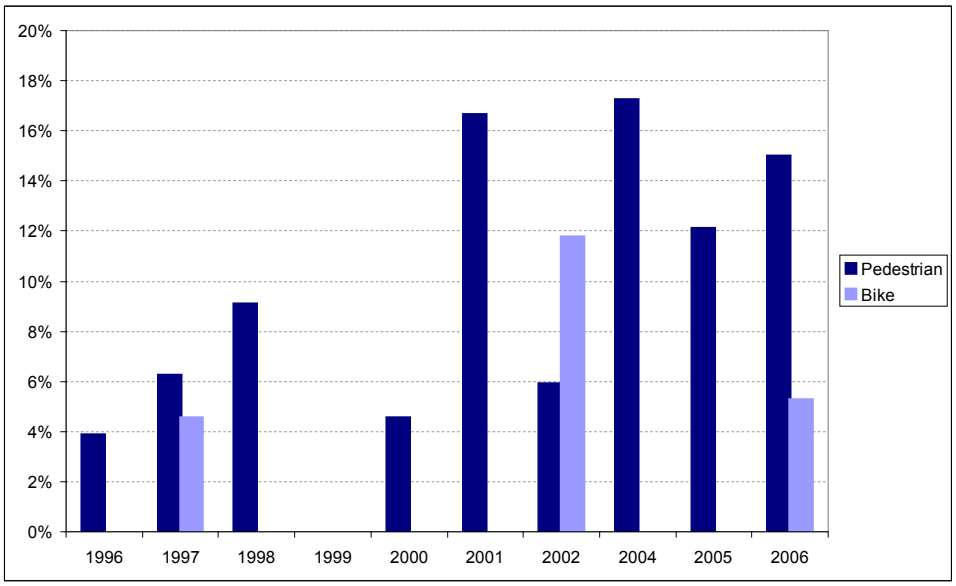
Bicyclists and pedestrians are at risk of injury from motor vehicles and other hazards along roadways and pathways. Over the past 15 years, generally more crashes have involved pedestrians than bicycles, as seen in **Exhibit 3.31**. Overall, pedestrian crashes increased between 2000 and 2006, with a low in 2002. Bicycle crashes have remained similar in the same time period. In 2006, bicycle and pedestrian crashes accounted for 2.2 percent of all traffic crashes. Since 2000, bicycle and pedestrian crashes have made up between 1.5 and 2.2 percent of all traffic crashes in Kent County. It is important to note that impaired pedestrians were involved in 30 to 40 percent of these crashes.

Exhibit 3.31: Kent County Pedestrian and Bicycle Traffic Crash Data

	TOTAL CRASHES		INJURY CRASHES		FATAL CRASHES	
Year	**Pedestrian**	**Bike**	**Pedestrian**	**Bike**	**Pedestrian**	**Bike**
1990	32	26	30	25	2	1
1991	33	21	30	20	3	0
1992	39	17	32	17	7	0
1993	20	20	19	20	1	0
1994	26	21	25	19	1	0
1995	22	28	19	27	1	0
1996	26	27	25	27	1	0
1997	32	22	30	21	2	1
1998	22	19	20	19	2	0
1999	21	20	20	17	0	0
2000	22	16	22	14	1	0
2001	24	22	20	22	4	0
2002	17	17	17	14	1	2
2004	29	15	24	15	5	0
2005	33	19	29	19	4	0
2006	40	19	34	18	6	1

Source: DelDOT

Exhibit 3.32: Kent County Percent of Total Crashes Resulting in Fatalities



Source: DelDOT

3.5 Passenger and Freight Railroads

The state as a whole has five freight railroads and 218 freight rail-miles. Kent County is served by only one railroad, the Class I carrier Norfolk Southern (NS), which enters the county near Clayton and exits south of Harrington. To the north, NS connects to the national railroad system via the Amtrak Northeast Corridor.

There are several major commodities carried by rail in Delaware, according to waybill samples provided by the railroads: automobiles, coal, stone/aggregates, chemicals, and grain. Coal and grain are the two major commodities delivered to Kent County. Grain imports are necessary to support the massive poultry industry, which has outstripped the ability of the local growers to supply the entire amount. Coal is also crucial for electric power production. Other commodities being delivered in Kent County are food products and chemicals. Rail freight represents an under-utilized resource in Delaware, with the volume of service consistently below the capacity of the rail lines and below the potential to warrant improvements in most locations. There are some important areas where chokepoints exist, and addressing these will increase velocity on the entire downstate network.

DelDOT continues to promote freight rail as an alternative to truck traffic on Delaware's highways. DelDOT works with freight railroads throughout the state to improve infrastructure and service, and to address citizen concerns about safety, noise, traffic, and other rail-related issues. DelDOT has partnered with NS on major infrastructure projects in the past, and continues to seek opportunities for public-private partnerships in the sector.

3.5.1 Freight Rail Lines

Rail lines offer important economic benefit for industrial development. Future Land Use Plans in the Dover and Kent County Comprehensive Plans designate areas along rail lines for industrial uses. Kent County has 56 miles of active freight railroad lines, which are operated by Norfolk Southern. The Delmarva Secondary and Indian River Secondary Tracks, which traverse Kent, are rated as Federal Railroad Administration (FRA) Class 3 and

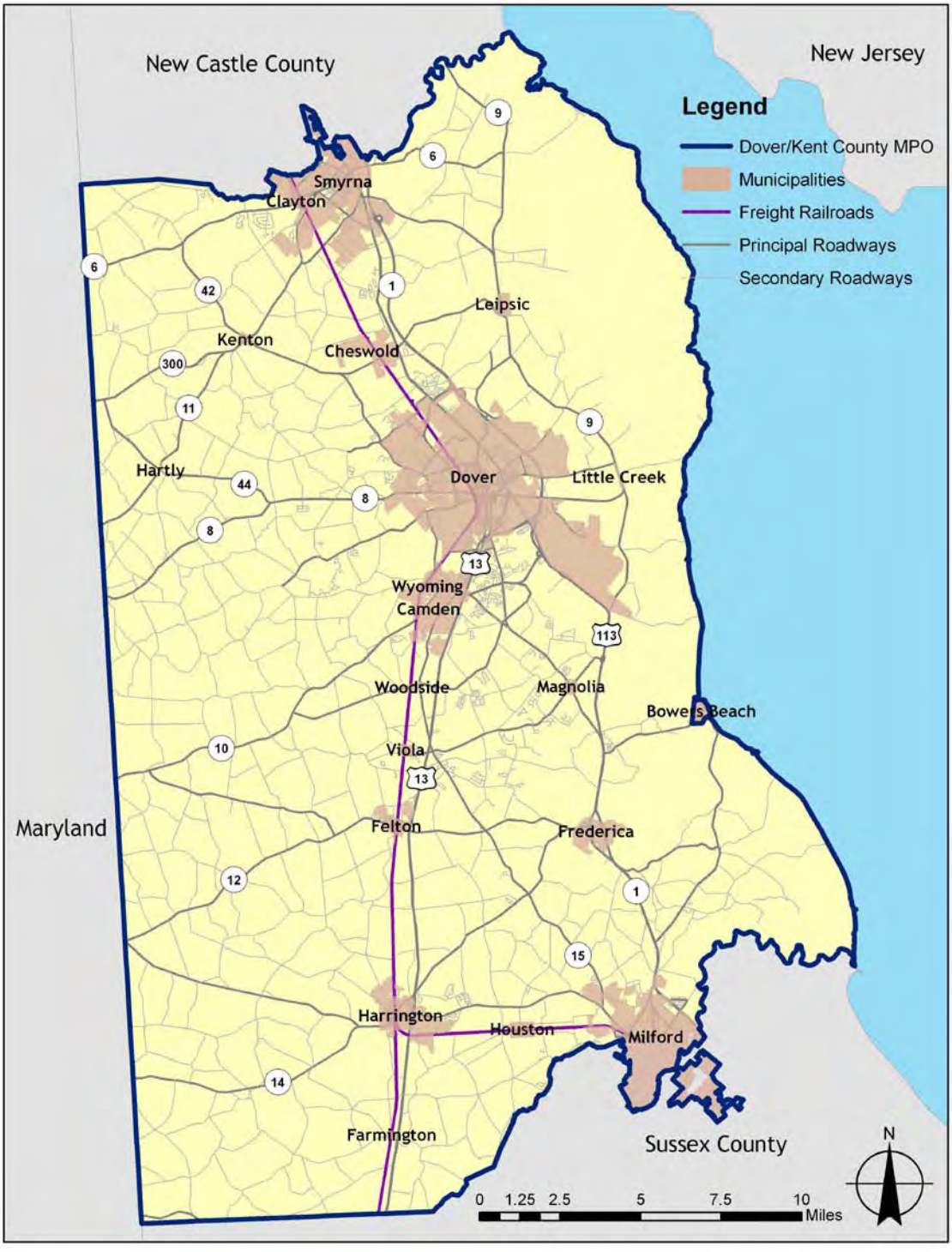
have a maximum speed limit of 40 mph. The Indian River Secondary Track splits from the Delmarva track at the Harrington Yard. **Exhibit 3.33** illustrates the following rail lines:

- *Delmarva Secondary Line* – This primary north-south connection along Delmarva is operated by Norfolk Southern and roughly parallels the US 13 roadway corridor. This line continues south into Maryland, making a connection to the Bay Coast Railroad in Pocomoke, Maryland, and continuing to a barge that floats rail cars across the Chesapeake Bay at Cape Charles, Virginia (allowing for a redundant, but very low volume, rail connection onto the Delmarva Peninsula). To the north, this line connects to the Northeast Corridor at Newark, serving many destinations in the northeastern United States. This is the longest rail line in Kent County, spanning 34.5 miles within the county.

- *Indian River Secondary Line* – Another Norfolk Southern line in Kent County, this runs due east through Houston to Milford, after splitting from the Delmarva Secondary at Harrington Yard, and continues in a southerly direction on the east side of US 113 in Delaware into Maryland, covering 7.8 miles in Kent County.

Primary commodities on these lines include coal, chemicals, agricultural products, forest products, and construction aggregates.

Exhibit 3.33: Freight Rail Lines



The establishment of a new Norfolk Southern Delmarva Business Unit (DBU), to promote rail service in the area, is a good indicator for the future of rail freight in the region. With operations that began in 2006, through enhanced marketing and operations, the DBU is intended to strengthen rail service in New Castle County and the Delmarva Peninsula, by better connecting the railroad to its customers, improving the use of rail assets, and creating opportunities for new businesses to locate in Kent and Sussex Counties.

3.5.2 Freight Rail Yards and Transfer Facilities

Additional intermodal transfer centers, switching yards, and similar facilities greatly increase the ability of rail transport to capture additional traffic, which might otherwise travel its entire journey by truck. Kent County has two such facilities in operation.

- *Corrado America (not currently in operation)* – A rail-to-truck bulk commodity transfer facility, owned by Corrado America, exists in Felton for the transfer of aggregates.

- *Jello Yard* – This yard services the General Foods and Proctor & Gamble plants on the west side of Dover. Here, many cars of raw materials arrive from various points in North America, for the manufacture of paper and food products. This location, located on New Burton Road, is not fenced and is adjacent to an increasingly busy New Burton Road and residential neighborhoods. This remains a concern among some local residents and lawmakers.

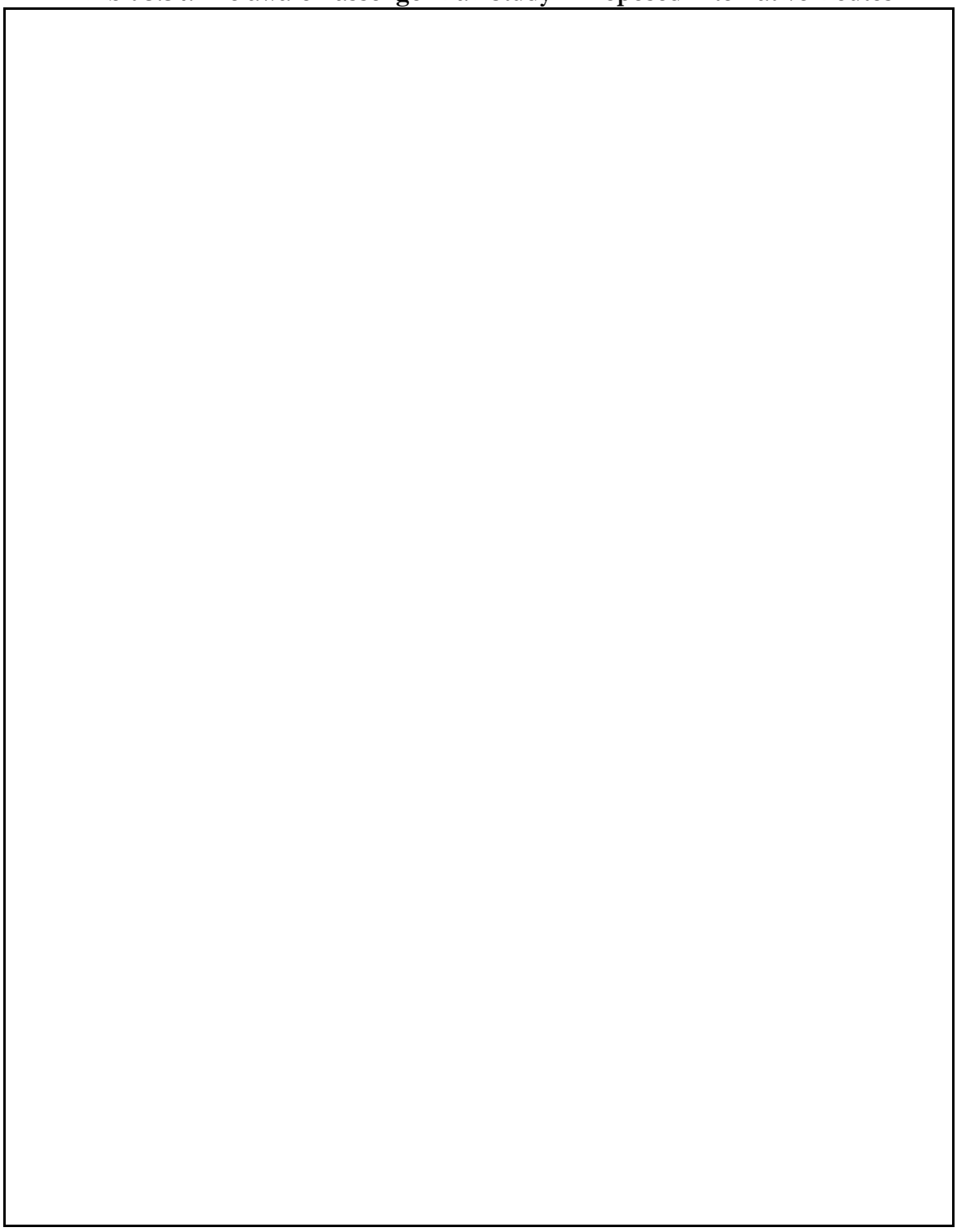
- *Harrington Yard* – Harrington Yard is a location where train crews report to duty. Here, scheduled freights begin and end their journeys for destinations throughout the United States. Also, local trains from the Indian River Secondary Line and destinations on the lower Delmarva Peninsula, begin and end their journey at Harrington. The switching movements needed to build and break train consists can cause traffic issues in downtown Harrington by blocking at-grade crossings.

3.5.3 Passenger Rail

There is currently no regularly-scheduled passenger rail service available in Kent County. The nearest passenger stations are Newark, Churchmans Crossing, and Wilmington in New Castle County. Amtrak, DTC, and NS, partner each year to provide a one-day excursion train from Philadelphia to the Delaware State Fair Grounds, during the State Fair via Newark, Middletown, and Dover. The feasibility of future downstate commuter rail service has been studied between Wilmington and Dover, with the conclusion that the current land use pattern and total population numbers and densities do not support passenger rail.

DTC has conducted three phases of study for commuter rail service to Middletown or Dover, with the most recent study completed in 2004. It was determined that the service could use existing NS freight right-of-way, although significant infrastructure improvements would be required. Similar to existing rail facilities in New Castle County, extensive parking and local transit connections could be provided, allowing the rail service to be the backbone of the statewide transit system. While major planning for this service is on hold, studies on specific issues may be conducted in the future. Infrastructure improvements that would benefit existing freight service, and commuter rail in the future, are under consideration.

Exhibit 3.34: Delaware Passenger Rail Study – Proposed Alternative Routes



3.6 Aviation

Kent County has seven aviation facilities available for public use. The primary aviation facility in Kent County is Dover Air Force Base (DAFB), which permits limited public service at the Civil Air Terminal. Charter aircraft operations are limited, and are authorized

on a case-by-case basis. DAFB is the largest military or civilian aerial port facility on the East Coast and is an important part of Kent County's economy. In addition to the facilities at DAFB, five of Kent County's other public-use aviation facilities provide general aviation services. Another facility, the DelDOT Helistop is a publicly-owned helicopter landing pad, located at the DelDOT complex in Dover, and available for public use. The county continues to pursue opportunities for economic development within these facilities and in the surrounding areas.

3.6.1 Civil Air Terminal (CAT) at Dover Air Force Base

The DFAB has a primary mission to house C-5 and C-17 transport planes, civilian use is secondary. A joint-use agreement between the Air Force and DelDOT authorizes DelDOT to permit scheduled commuter or commercial charters, as well as general aviation aircraft that have been approved in advance by the installation commander.

The ability to land large planes makes this facility unique in Kent County. The CAT is instrumental in facilitating the NASCAR events at Dover Downs. The ability to accommodate the high numbers of operations and large-sized airplanes employed by racing teams, helps Dover remain competitive as a venue. Potential for expansion of service levels and facilities may be constrained by the primacy of the Air Force mission at the base. The CAT was closed for six months following the September 11, 2001 terrorist attacks due to security concerns.

There are currently plans to expand the parking apron adjacent to the CAT to accommodate large civilian cargo planes that serve the airbase. Additional parking pads are sought to accommodate increased numbers of private/chartered passenger flights.

The Kent County AeroPark is a 115-acre county-owned industrial/business park located adjacent to the CAT adjacent to the perimeter of DAFB. The county desires to attract industries such as manufacturing, publishing, and warehousing to take advantage of available land and buildings. Kent County and the Central Delaware Economic Development Council (CEDS) are committed to partnering with Dover Air Force Base and its related businesses, to protect and support its mission.

3.6.2 Delaware Airpark

The Delaware Airpark in Cheswold was purchased by DelDOT in 2000 and is operated by the Delaware River and Bay Authority (DRBA). The airport serves general and corporate aviation in Kent County, as well as the Delaware State University aviation flight training program. Runway expansion at the airport is planned for 2009. DRBA is interested in pursuing additional upgrades to the facility, to provide additional private and corporate airport capacity and enhanced security. DelDOT is committed to protecting the airport by working with the local land use agencies to locate compatible development and discourage incompatible uses.

3.6.3 Other Aviation Facilities

Other public use facilities that provide general aviation services include Smyrna Airport, Chandelle Estates Airport, Jenkins Airport, Chorman Airport, and the DelDOT Helistop. All are privately-owned and operated facilities, except for the DelDOT facility.

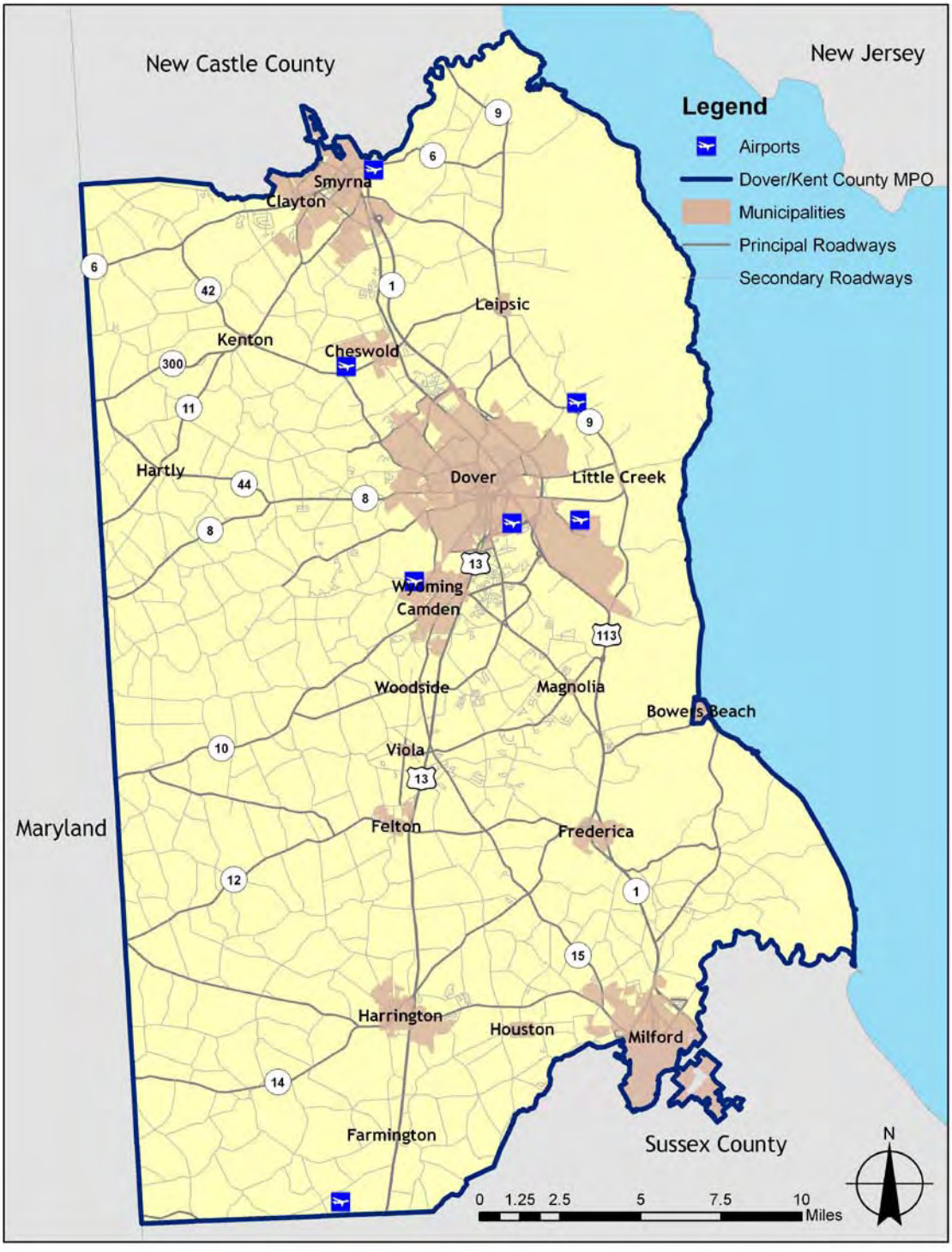
Most privately-owned airports support some sort of business—from airplane rides to recreational flying to equipment salvage and repair. One very important activity associated with private airports is aerial application of fertilizers and pesticides, crop dusters. This activity is crucial for the viability of Delaware's agricultural community. The state contracts for mosquito control spraying, as well.

Exhibit 3.35: Summary of Public Use Airports

Name	Location	Longest Runway	Runway Surface	Services	1999 Operations	Projected 2025 Operations*
Smyrna Airport	Smyrna	2,600 ft.	Turf	Hangars, Tiedowns, Avgas	4,500	3,000
Chandelle Estates Airport	Dover	2,550 ft.	Paved	Hangars, Tiedowns, Repairs, Avgas	3,500	8,000
Delaware Airpark	Cheswold	3,582ft.	Paved	Hangars, Tiedowns, Repairs, Avgas, Jet	8,000	46,400
Jenkins Airport	Wyoming	2,875 ft.	Turf	Hangars, Tiedowns, Repairs, Avgas	2,500	3,200
Civil Air Terminal	Dover	13,000 ft.	Paved	Fuel By Request	400	1,400
Chorman Airport	Farmington	3,588 ft.	Asphalt	Tiedowns, Repairs, Avgas	NA	38,400
DelDOT Helistop	Dover	60 x 60 sq. ft.	Asphalt	None	NA	NA

*Note : * From Delaware State Aviation System Plan Update (draft)*
Source: DelDOT Office of Aeronautics

Exhibit 3.36: Airports



The annual number of operations at each public-use facility is well within the facility's capacity for annual service volume. However, most of the privately-owned airfields are anticipated to have inadequate capacity within the next 15 to 20 years. Delaware has many excellent air cargo facilities, including Dover Air Force Base, which could accommodate large cargo planes, but there is not a market for high-value imports/exports at present that

could efficiently utilize that capacity. UPS has a major facility in Philadelphia, and FedEx is in Salisbury, making truck delivery to and from those locations cost-effective.

DelDOT also completed an Air Cargo Study for the Civil Air Terminal in 2006. The study recommends expanding the facility to accommodate commercial (privately-owned) air cargo that serves the military base. This activity could lay the groundwork for additional non-military-oriented commercial aircraft in the future as demand grows in the region, but the major challenge is funding these types of expansions.

Delaware continues to make progress on implementing recommendations from the 1998 Delaware Aviation System Plan. While there is no current progress on attracting commercial aviation service to Kent County, the provision of general aviation services continues to be a high priority issue for the county. An update of the statewide Aviation System Plan will be completed in 2008.

3.7 Marine

Rivers, ports, bays, and estuaries are all used for movement of peoples, goods, and services, and also serve as recreation destinations and uses. Delaware Bay, Leipsic River, St. Jones River, Murderkill River, and other waterways historically provided avenues for commerce and recreation, and can serve the movement of goods in and to Kent County in the future. The one existing waterborne cargo operation is fuel delivery by barge at Port Mahon.

The estuary formed by the Delaware River and Delaware Bay meets the Atlantic Ocean at Cape Henlopen, south of Kent County. Part of the Intercoastal Waterway, which runs along the entire eastern seaboard, this estuary is also a major shipping channel serving the ports of Wilmington and Philadelphia.

Most of the bay coastline in Kent County is tidal marsh, and is home to the Bombay Hook National Wildlife Refuge and other important wildlife areas. Therefore, most of the water access in the county is in small-scale recreational use. The commercial and recreational fishing facilities in Bowers Beach are the most significant docking facilities in the county; however, smaller operations can also be found in Leipsic. The environmental sensitivity of the area's waterways and the protective restrictions of the Delaware Coastal Zone Act are important factors in determining the viability of waterborne commerce for Kent County.

Considered as a whole, the bay/river is the world's largest freshwater port, and the combined activities of the various shippers using it rank the waterway second in the United States in total waterborne commerce. The Delaware River carries approximately 2,700 ships per year to and from several public port facilities and private industry facilities along its banks in northern Delaware, Pennsylvania, and New Jersey.

4. Trends and Implications on Future Transportation Needs

How effectively transportation systems function affects the quality of the built and natural environments as well as the quality of life of residents and visitors. Transportation needs are determined by comparing the demand for movement of goods and people to the supply of transportation facilities. To understand the future transportation needs of Kent County, it is necessary to understand where people will live and work, the ways in which they will make use of the land, and the travel choices they will make.

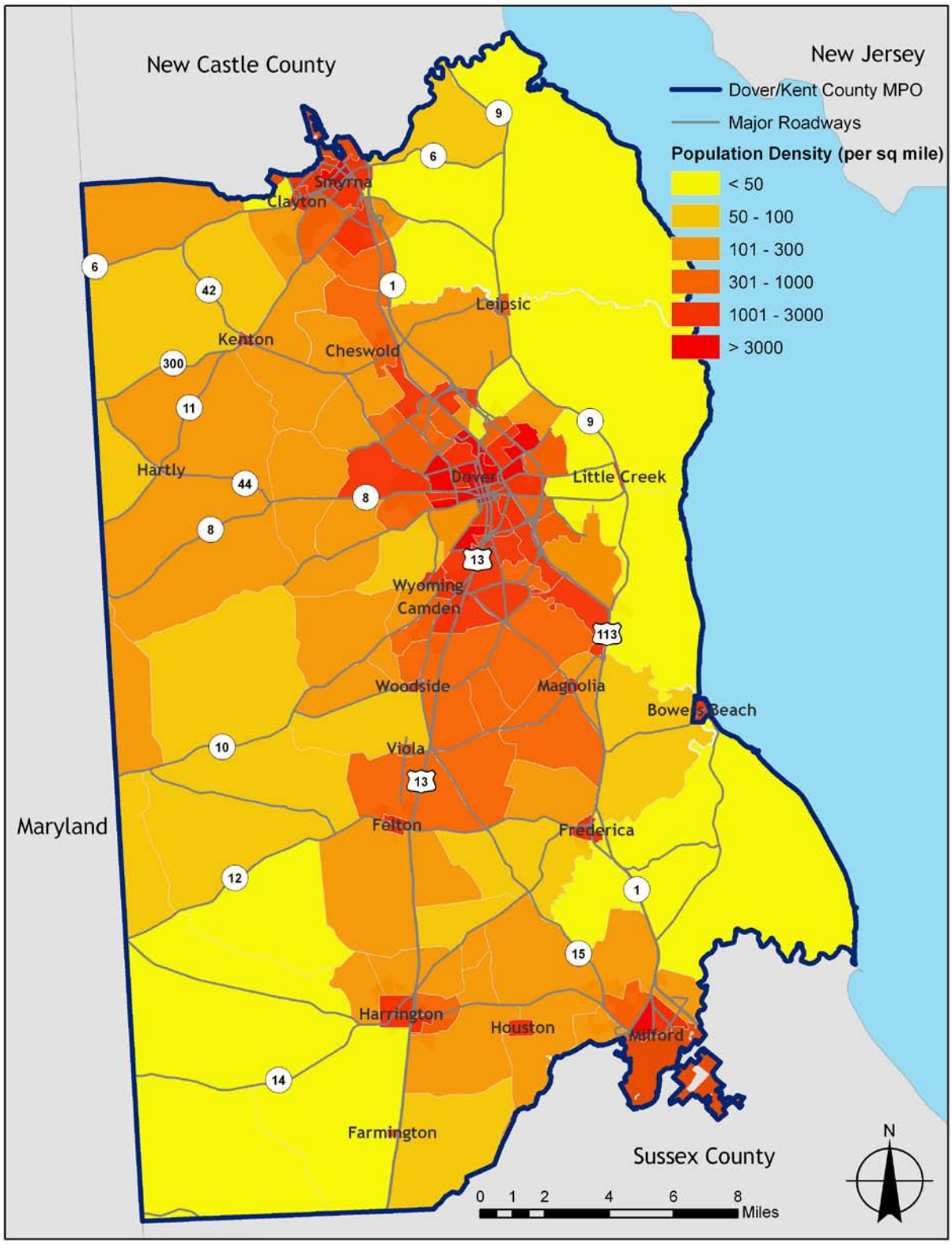
Various trends are examined and modeled to support identification of future transportation needs. This chapter discusses population and employment trends, transportation network use, future land use, and travel trends based on public opinion.

4.1 Population and Employment Trends

Population and employment trends compared with existing conditions indicate future transportation needs. The population and employment trends of the Dover/Kent County Metropolitan Planning Organization (MPO) region indicate potential deficiencies in the system if unfettered growth or even growth at a pace similar to recent periods continues. The MPO reviewed past trends and projected future population growth to predict the future conditions of our road network. As we will describe in subsequent pages, the road network will suffer for the additional vehicles that accompany most growth.

The MPO adopted population projections using data from the Delaware Population Consortium (DPC). The consortium uses data gathered by the U.S. Census Bureau and other federal agencies and projects growth based on national trends, local land use plans, local trends, and local knowledge provided by area planning officials. The DPC collects data at the county level and then it is disaggregated into Census County Divisions (CCD). To use the data in transportation planning, it is distributed among Traffic Analysis Zones (TAZs), which are the base units of DelDOT's travel demand model. **Exhibit 4.1**, below, portrays the current population density in the MPO area by TAZ. **Exhibit 4.2** shows how TAZs were aggregated to approximate CCDs in order to show growth trends in various areas. As shown in **Exhibit 4.3**, the biggest growth is expected to occur in the Smyrna area followed by Kenton and Milford areas.

Exhibit 4.1: 2005 Population Density



Source: DelDOT

Exhibit 4.2: Census County Divisions

Source: DelDOT

Exhibit 4.3: Population Projections by CCD

MPO Area by CCD	1990	2000	2005	2010	2015	2020	2025	2030	Percent Change 2005 - 2030
Central Kent County	13,165	18,083	19,001	20,515	22,030	22,947	24,423	25,899	36%
Dover Area	55,699	66,027	67,788	73,192	78,596	79,148	84,240	89,331	32%
Felton Area	9,153	6,109	6,363	6,870	7,377	7,237	7,703	8,169	28%
Harrington Area	9,729	10,860	11,524	12,443	13,361	14,163	15,074	15,985	39%
Kenton Area	6,075	5,985	6,393	6,903	7,412	8,138	8,662	9,185	44%
Milford Area	8,468	16,816	20,211	21,822	23,433	25,407	27,041	28,675	42%
Smyrna Area	12,234	13,113	15,682	16,932	18,182	25,066	26,679	28,291	80%
Total	**114,523**	**136,993**	**146,962**	**158,677**	**170,391**	**182,106**	**193,822**	**205,535**	40%

Source: Delaware Population Consortium, 2007 Projections, DelDOT
Note: Milford and Smyrna populations include the Sussex County and New Castle County portions of the respective municipalities.

4.1.1 Total Population

The DPC released their 2007 edition of population projections in October 2007. Compared to New Castle and Sussex counties, the Kent County population is projected to continue to have the smallest population in the state, as shown in **Exhibit 4.4**. At the same time, Kent County saw the largest percentage of population increase of 18 percent between 2000 and 2007 in the state of Delaware. The populations of Kent and Sussex counties are projected to increase 23.8 percent and 23.4 percent, respectively, between 2000 and 2010 as compared to the state's 13.6 percent projected increase for the same period. This growth puts increased demands on the existing transportation network in Kent County.

Exhibit 4.4: Population Projections

Area	2000	2007	2010	2015	2020	2025	2030
State of Delaware	786,418	863,904	893,184	937,611	977,645	1,012,591	1,042,476
Kent County	127,103	150,516	157,404	166,994	175,717	182,919	189,431
New Castle County	501,856	529,590	541,350	559,497	575,162	588,484	599,805
Sussex County	157,459	183,798	194,430	211,120	226,766	241,188	253,240

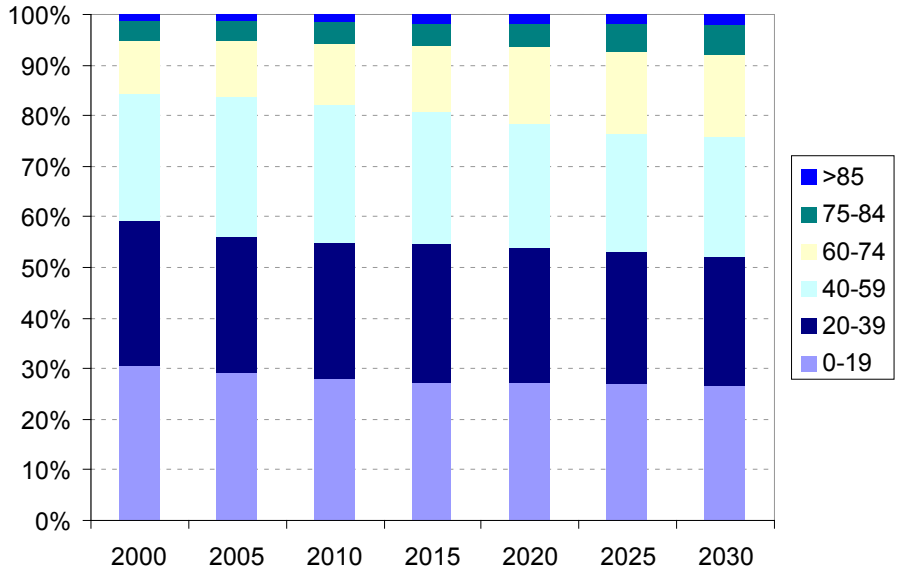
Source: Delaware Population Consortium, 2007 Projections

4.1.2 Age

The Dover/Kent County MPO region has an aging population as shown in **Exhibit 4.5**. This population is projected to grow through the year 2030. The 59 years and younger age groups are predicted to slightly decrease through 2030. New drivers are not expected to increase the demand on the existing transportation system.

The 60 years old and over age groups are projected to increase the most over the next 20 years and represent approximately 25 percent of the overall population. As the aging population continues to grow, the demand for medical transportation and other coordinated human services transportation is also expected to climb. Mobility and access will become increasingly important for this population, and will need to be considered in decision-making for multiple modes, including roadway design standards and public transit.

Exhibit 4.5: Dover/Kent County MPO Population by Age Group as Percentage of Total Population



Source: Delaware Population Consortium, 2007

4.1.3 Households

Population and household size, coupled with levels of automobile ownership, can indicate demand for transportation. As shown in **Exhibit 4.6**, according to the Delaware Population Consortium projections, an average of 2.65 persons resided in each household in 2005. The projected persons per household average is expected to continue to decrease to 2.54 persons by 2030 while the number of households is expected to increase. Thus, the number of persons living in Dover/Kent County MPO households will decrease. Nonetheless, the projected increase in households translates to a greater demand for goods, services, and employment, thereby placing a greater demand on the transportation system. At the same time, smaller household sizes combined with larger numbers of households means more trips per person.

Exhibit 4.6: Dover/Kent County MPO Population and Household Size

Year	Population	Households	Average Persons per Household
1990	114,523	39,627	2.89
2000	127,103	47,250	2.69
2005	146,962	55,457	2.65
2010	158,677	60,564	2.62
2015	170,391	65,788	2.59
2020	182,106	70,858	2.57
2025	193,821	76,008	2.55
2030	205,535	80,919	2.54

Source: Delaware Population Consortium, 2007

4.1.4 Employment

Employment is expected to increase in the county at rates consistent with the population increases. By 2030, employment is expected to reach 82,394, which represents a 10 percent increase over the 2005 employment of 74,663, as shown in **Exhibit 4.7**. The biggest increases are expected to occur in the Milford area. **Exhibit 4.8** shows employment density per square mile in 2030. Government and community services are expected to remain the most important segment of the economy. Dover Air Force Base remains a major engine of economic stability in the area, being directly responsible for 1,040 civilian and 5,300 military jobs and having an economic annual impact of $460 million (based on 2007 information).[1]

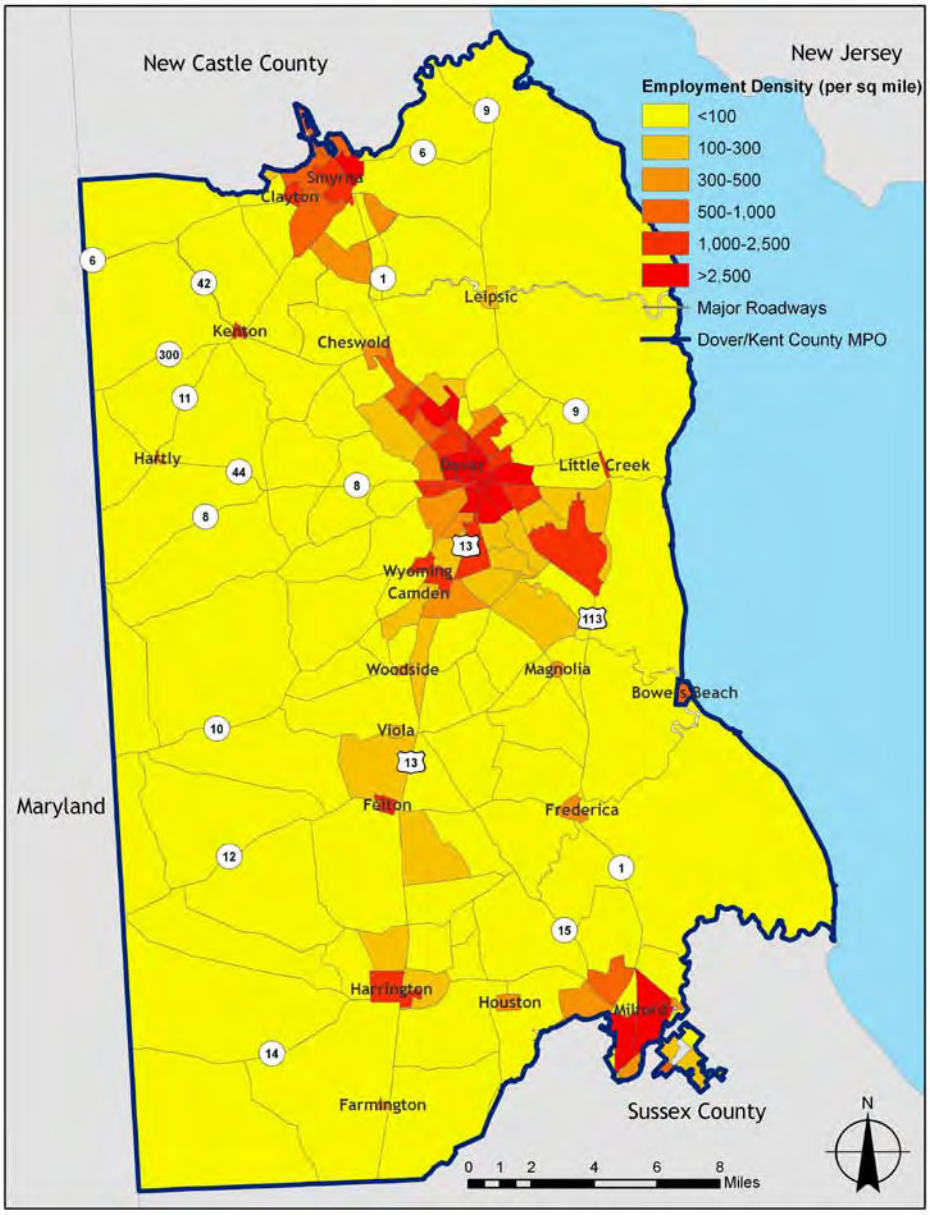
Exhibit 4.7: Dover/Kent County MPO Employment Growth

MPO Area by CCD	1990	2000	2005	2010	2015	2020	2025	2030	Percent Change 2005 - 2030
Central Kent County	834	2,699	3,030	3,093	3,155	3,310	3,374	3,439	14%
Dover Area	35,459	43,637	48,308	49,308	50,309	50,091	51,068	52,044	8%
Felton Area	1,470	2,533	2,823	2,881	2,939	2,991	3,049	3,107	10%
Harrington Area	3,978	1,807	2,023	2,065	2,107	2,183	2,226	2,269	12%
Kenton Area	483	440	496	506	516	547	557	568	15%
Milford Area	8,796	9,471	10,585	10,804	11,023	12,280	12,519	12,759	21%
Smyrna Area	4,183	6,019	7,398	7,552	7,705	7,900	8,054	8,208	11%
Total	**55,203**	**66,606**	**74,663**	**76,209**	**77,754**	**79,302**	**80,847**	**82,394**	10%

Source: Delaware Population Consortium, 2007 Projections
Note: Milford and Smyrna figures include the Sussex County and New Castle County portions of those municipalities.

[1] http://www.dover.af.mil/shared/media/document/AFD-061020-042.doc

Exhibit 4.8: Dover/Kent County MPO 2030 Employment Density



Source: DelDOT

4.2 Goods Movement

The dominant means of goods movement in Kent County, as well as in Delaware overall, is trucks. Trucks move approximately 80 percent of manufactured goods to and from Delaware each year.

The main commodities shipped from Kent County in 2005 were nonmetallic minerals, chemicals, minerals, food, lumber, and farming materials. Most of the commodity flows from Kent County are transported to New Castle County, Delaware, and to the Pacific West and Midwest (East North Central) United States. As stated in the Dover/Kent County MPO 2007 Transportation Information Booklet, "…in 2005 Kent County imported 4,305,215 tons of consumer goods, raw materials, and other precious commodities, with a

total of 223,302 trucks hauling these goods into the county." Kent County receives more than one-third of its goods from New Castle County, Pennsylvania, and New Jersey.

According to the 2007 MPO Information Booklet, one in 15 vehicles, or 6.3 percent, on Kent County roads carries freight. By comparison, in 2001, the same 6.3 percent of the total annual average daily traffic (AADT) was heavy trucks. In Kent County, US 13 and 113 and SR 1 are major truck routes. US 13 is the principal freight transportation route for private and for-hire motor carriers in Delaware.

In Dover, McKee-Saulsbury Road is a designated truck route to serve the industrial areas on the west side of the city. High truck traffic volumes have also been recorded through Farmington, Felton, Woodside, Camden, Wyoming, Cheswold, and Smyrna. The only Kent County location identified as having low overhead clearance for trucks is SR 14 in Milford at the Mispillion River, the southern Kent County boundary.

The increase of truck traffic and truck dependence has resulted in issues of road capacity and safety. The growing number of trucks and truck miles has led to accelerated damage of the highway system, decreasing air quality, more noise, and an overall negative impact on our resident's quality of life.

In several areas throughout the state, shippers, carriers, and the community have made special efforts to direct trucks to designated routes. Ongoing development in the industrial area in southwest Dover increases truck traffic. The completion of Scarborough Road, connecting SR 1 with McKee-Saulsbury Road, has enhanced this truck connection to west Dover. The opening of a partial interchange at SR 1 and SR 8 has resulted in a decrease in trucks on SR 8 and US 13 and serves the shippers and manufacturers to the southeast of the City. In Milford, trucks originating at various industrial businesses on the northeast side of the city pass through the downtown district which is adding extra stress to roads and bridges and has the potential to damage historic structures. To address this concern, the municipality has posted signs limiting truck weight to 27 tons on NW Front Street to reduce the stress of trucks on infrastructure. In addition, the city continues to search for alternative routes and roads for trucks so they do not overwhelm the existing transportation enhancements.

4.3 Automobile Ownership

The continued development in Kent County has relied upon personal automobiles to meet residents' basic needs. Many factors contribute to this increase in dependence on automobiles, including decentralized development patterns, employment trends, and population growth, along with changing demographics, and income trends. These combined trends result in an increase in automobile ownership and the number of vehicle-miles traveled. **Exhibit 4.9** presents results from the Delaware Trip Monitoring System (DTMS) showing average number of vehicles per household. Since 2002, the average number of vehicles has increased from 2.0 to 2.5.

Exhibit 4.9: Average Number of Vehicles per Household by Year for Kent County

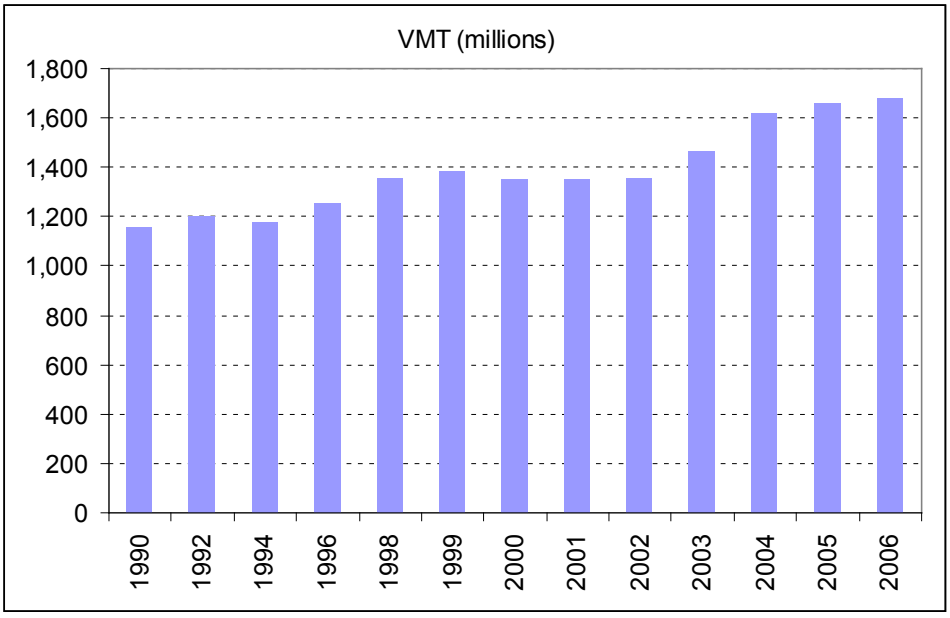
Year	Average Number of Vehicles
1997	2.2
1998	2.4
1999	2.3
2000	2.0
2001	2.1
2002	2.0
2003	2.3
2004	2.5
2005	2.5
2006	2.5
All Years	**2.3**

Source: Delaware Trip Monitoring System (DTMS)

4.4 Vehicle Miles Traveled (VMT)

Vehicle miles traveled (VMT) is defined as the total miles traveled by all vehicles for a section of roadway in a given amount of time. VMT is a key measure of roadway use. Within Kent County, vehicle miles traveled has increased due in part to the increase in vehicles per household. Just between 2003 and 2006, growth was from 1,466 to 1,680 million annual VMT, representing an annual increase of over 200 million VMT or an increase of 15 percent; far greater than the increase in population. In 2007, traffic in Kent County increased again to 1,699 million miles traveled, but at a slower, 1.3 percent annual rate, than in the recent past.

Exhibit 4.10: Kent County VMT Growth



Source: DelDOT

4.5 Daily Traffic Volumes (AADT)

Annual average daily traffic (AADT) on roadway segments is another indicator of degree of traffic. This indicator reflects the operations and performance of specific roadways. DelDOT has a system of permanent automatic traffic counters at locations throughout the state and publishes an annual report of the AADT's on all state roadway segments. **Exhibit 4.11** illustrates the AADT at DelDOT permanent counting stations in Kent County. These data indicate that the changes in roadway use vary substantially annually. Noticeable increases are observed from the 2002 to 2006 traffic counts. US 13, near Dover Downs carried more than 10,000 additional vehicles in 2006 compared with 2002, but less than in 1998. Similar rates of increase are noted on US 113 by the Milford Bypass and on US 113 by Court Street in Dover. The 2007 data indicate mixed changes, with the number of trips generally decreasing at these locations.

Exhibit 4.11: AADT and Percent Change, 1990-2006

ROAD	LOCATION	1990	1994	1998	2002	2006
US 13	Dover Downs	57,972	58,834	60,231	45,731	56,662
RD 88	NE of Dover	1,493	1,448	1,770	3,777	4,180
RD 195/ SR 15	SW of Dover	5,192	5,602	6,807	7,777	7,677
SR 8	W of Dover City Limit	8,516	10,003	11,580	12,019	16,371
RD 12	N of Leipsic	1,835	1,024	1,649	1,306	1,340
SR 9	SR 6	1,021	673	872	658	571
US 13	Court Street, Dover	27,373	29,121	33,398	36,854	38,905
US 113	Court Street, Dover	35,798	26,858	27,451	30,908	44,335
US 113	Milford Bypass, RD 8A	14,217	15,257	17,566	10,864	19,685
SR 1	Milford Bypass, RD 7	11,736	14,265	13,187	21,138	20,821

Source: DelDOT, 2006 Traffic Summary

4.6 Mode Choice

According to typical mode choice studies, the average distance threshold that a person will walk is 1.4 miles, and for biking, 5.8 miles. These thresholds are the average distance that people will travel by those modes for recreation, work, or school. Mode choices have become more important due to increases in the cost of fuel, insurance, parking, and ticket costs. A variety of mode choices provides a higher quality of life than a single transportation mode.

Overall mode choice in Kent County for 1990 and 2000 is shown in **Exhibit 4.12**. The predominant mode of choice is driving alone in a single-occupant vehicle. Carpooling is the next largest mode of choice; however, the percentage of those who rode together slightly

decreased from 1990 to 2000. The percentage of pedestrians and bicyclists also slightly decreased from 1990 to 2000.

Exhibit 4.12: Kent County Travel Mode Choice

Mode/Year	1990	2000
Drove Alone	77.7%	79.7%
Carpooled	14.4%	12.9%
Public Transportation	0.6%	0.8%
Bicycled or Walked	3.4%	2.5%
Motorcycle or Other	1.1%	1.0%
Worked at Home	2.8%	3.1%

Source: 2000 Census Transportation Planning Package Data for Dover/Kent County MPO

4.7 Through, Regional, and Local Trips

Trips can be classified into three types (through, regional, and local) based upon the origin and destination of the trip.

- Through trips neither originate nor terminate in Kent County or the state.
- Regional trips include those that originate in one county of Delaware and terminate in another county or out-of-state.
- Local trips originate and terminate within the same county. Local traffic may use all types of roadways.

An understanding of the local, regional, and through-trip characteristics that predominate certain corridors and trip types can guide appropriate investment strategies. The needs of and conflicts created by these different trip types require specific strategies and actions. The separation of through traffic from local traffic is critical to efficient system performance and user satisfaction. For example, US 13 through Dover carried approximately 9 percent through trips, 49 percent regional trips, and 42 percent local trips in 1995. The predominance of local trips on this major corridor has resulted in congestion. The SR 1 bypass around Dover was constructed to relieve some of the through and regional trip needs that were competing for capacity with local trips on US 13.

4.8 Travel Trends and Customer Satisfaction/Public Opinion

4.8.1 Travel Trends

The Delaware Travel Monitoring System Survey, as part of the Delaware Statewide Model Improvement Project, is an ongoing survey designed and conducted since 1995 by the Center for Applied Demography and Survey Research (CADSR) at the University of Delaware. In a random process, respondents are selected and asked to list the origin, destination, time, and trip method (mode) of every trip made in the preceding day. Demographic data is compiled for each respondent and public opinion on transportation issues is also obtained. Approximately 2,000 surveys are completed monthly with 700 of those done by residents of Kent County.

According to the results of the Delaware Travel Monitoring System, no significant changes occurred in travel patterns in Kent County. While most of the changes are not significantly different from 1996, a noticeable increase in the number of trips per person has occurred, as shown in **Exhibit 4.13**. For instance, while there were 1.8 trips per person in 1999-2001,

that number grew to 3.0 trips in 2004-2006. This increase occurred across all groups, with the biggest growth occurring in the 35 to 44 age group and the 55 to 64 age group, as seen in **Exhibit 4.14**.

Exhibit 4.13: Average Trips per Person per Weekday by Year

Years	Average Trips per Person
1997 – 1999	2.2
1998 – 2000	2.1
1999 – 2001	1.8
2000 – 2002	2.0
2001 – 2003	2.4
2002 – 2004	2.6
2003 – 2005	3.0
2004 – 2006	3.0

Source: DTMS

Exhibit 4.14: Average Trips per Person per Day by Age Grouping

Age Group	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006
16 to 24	2.1	2.3	2.4	2.5	2.5
25 to 34	2.3	2.7	2.8	3.1	3.1
35 to 44	2.2	2.5	2.7	3.2	3.3
45 to 54	2.0	2.3	2.5	3.1	3.2
55 to 64	1.7	2.3	2.6	3.0	2.9
65 and older	1.3	2.0	2.4	2.8	2.6
All ages	2.0	2.3	2.6	3.0	3.0

Source: DTMS

Exhibit 4.15 shows average trips by type of residential area. As expected, most automobile trips occur in the suburban areas. Furthermore, suburban commuters are the ones who have seen the biggest increase in the number of trips per person, growing from 2.1 trips in 2000-2002 to 3.1 trips per day in 2004-2006. The rural and urban commuters follow a very similar trend in Kent County: while the number of trips per person has grown, they did not increase as much as for the suburban residents. The increase in the number of trips is a major contributor to green house emissions even with no population growth. As experienced in other regions around the state and the country, average travel time to work has increased over the past 10 years as well. For Kent County, it has grown from 20.5 minutes in 1997 to 25.2 minutes in 2006, as shown in **Exhibit 4.16**.

Exhibit 4.15: Average Trips per Person per Day by Type of Area

Type of Area	2000-2002	2001-2003	2002-2004	2003-2005	2004-2006
Urban	2.3	2.3	2.6	2.7	2.8
Suburban	2.1	2.3	2.5	3.0	3.1
Rural	2.1	2.2	2.4	2.7	2.9

Source: DTMS

Exhibit 4.16: Trip Time in Minutes by Year

YEAR	Trip Time
1997	20.5
1998	20.6
1999	22.2
2000	25.4
2001	22.7
2002	21.2
2003	24.2
2004	23.5
2005	24.1
2006	25.2
1997 thru 2006	23.0

Source: DTMS

4.8.2 Customer Satisfaction Survey/Public Opinion

DelDOT routinely conducts a Customer Satisfaction Survey of the traveling public, including businesses that ship and receive goods, to determine how well the Department is meeting transportation needs. The survey considers all modes that move people and goods. These survey results are used to better understand what features of the transportation system are most important to system users. In addition to trends and analysis, the survey helps to identify the needs of system users. This section reviews the satisfaction of Kent County residents and their opinions as compared to the rest of the state.

Customer Satisfaction Surveys were first conducted in 1997 and are repeated annually to obtain trend data. The survey data are used as inputs into the Department's progress monitoring program. In 2006, the latest available, four different user groups were surveyed as part of this study. These user groups represent some of the different customer segments served by the Department. The first and largest survey, known as the General Transportation User Survey, was a random statewide telephone survey of 1,202 Delaware residents age 16 years and older. This survey was conducted in each of the previous survey years.

The second survey conducted in 2006 was a random statewide telephone survey of 100 Delaware residents age 16 years and older. This survey was directed at residents that reside in the transit-served areas of Delaware, but whom had not taken transit during the previous month. This survey was also conducted in the previous survey years. This survey is entitled the Transit-Served Market Area Survey.

All respondents were asked to rate Delaware's transportation system as a whole, and the 2006 results indicate that 61 percent of respondents think that the transportation system as a whole is meeting their needs "very well" or "somewhat well." This is similar to the 2000 and 2005 survey results but lower than results from other survey years. **Exhibits 4.17** and **4.18** show the data by county of residence.

Exhibit 4.17: Satisfaction Level by Transportation Type (2006) – General Transportation User Survey

	New Castle		Kent		Sussex	
	Very or Somewhat Well	Not Too or Not at All	Very or Somewhat Well	Not Too or Not at All	Very or Somewhat Well	Not Too or Not at All
Roadways	86%	14%	92%	8%	87%	13%
Transit	68%	32%	75%	25%	69%	31%
Bicycle	100%	0%	70%	30%	40%	60%
Pedestrian	78%	22%	67%	33%	55%	45%
Overall	76%	24%	81%	19%	76%	24%

Source: DelDOT Customer Satisfaction Survey

Exhibit 4.18: Satisfaction Level by Transportation Type (2006) – Transit-Served Market Area Survey

	New Castle		Kent		Sussex	
	Very or Somewhat Well	Not Too or Not at All	Very or Somewhat Well	Not Too or Not at All	Very or Somewhat Well	Not Too or Not at All
Roadways	95%	5%	94%	6%	90%	10%
Bicycle	100%	0%	0%	0%	0%	0%
Pedestrian	75%	25%	100%	0%	67%	33%
Overall	67%	33%	65%	35%	45%	55%

Source: DelDOT Customer Satisfaction Survey

It appears that Kent County residents are more satisfied with their roadway network and the transit network than are residents of the other two counties. At the same time, New Castle County outperforms Kent County in its residents' satisfaction with the bicycle and pedestrian facilities in their respective counties.

4.9 Existing Land Use

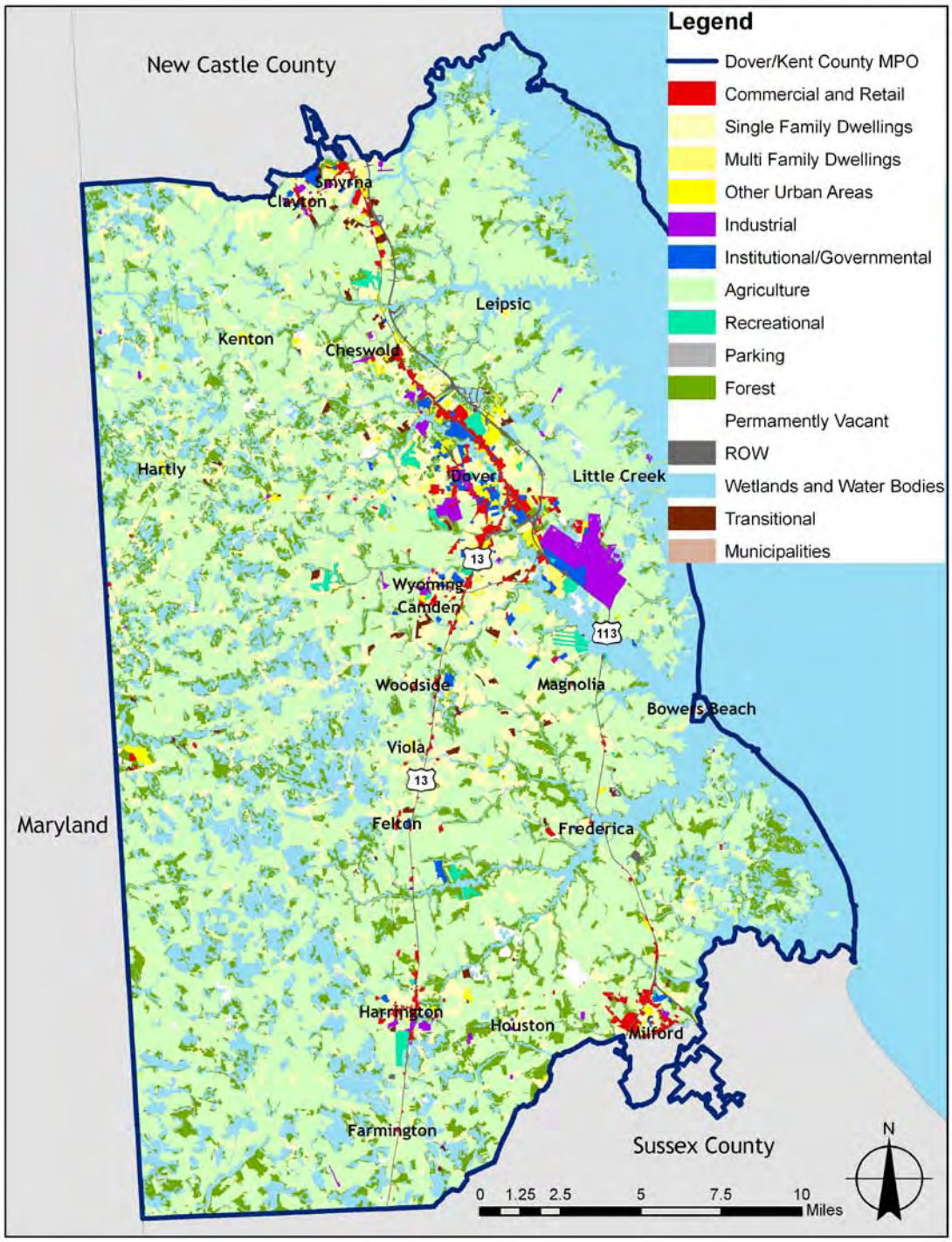
Existing land use plans indicate that Kent County is predominantly agricultural and environmentally-sensitive land, as seen in **Exhibit 4.19**. The next largest land use is single family residential. Within Kent County, mixed land uses are concentrated in cities and towns and along routes US 113 and SR 13 and sprawling outward..

Exhibit 4.19: Existing Land Use

Land Use	Acres	Percent of Total
Agriculture	222,433	47.8%
Permanently Vacant – Environmentally-Sensitive	174,614	37.7%
Single Family Residential	40,722	9. 0%
Commercial	6,723	1.5%
Vacant	6,314	1.4%
Industrial	3,749	0.8%
Government/Institutional	2,413	0.5%
Multi-family Residential	2,148	0.5%
Streets/Right-of-Way (ROW)	2,508	0.5%
Public Open Space	2,000	0.4%
Common Parking	21	0.01%
Total	**463,645**	**100.00%***

*Numbers may not add to 100% due to rounding

Exhibit 4.20: Kent County Existing Land Use (2002)



Source: Delaware Office of State Planning

4.9.1 Current Land Use Situation

Since the previous Kent County Comprehensive Plan, the county has experienced a tremendous amount of growth. Approximately 26,000 residential lots were approved in the county during the period through August 2007. More than 50 percent of those lots have either been built or have been issued a building permit. The county had not provided

adequate infrastructure, including transportation, to accommodate the growth that has already occurred. Instead, the County required land developers install what was needed where possible.

Growth in Kent County has outpaced infrastructure investment from all sources, however. Many of the local roads within growth areas are not currently improved to their functional classification and cannot support additional development. Before additional development is permitted, the county, in conjunction with DelDOT and the MPO, must develop a plan for upgrading roads to their identified functional classification.

The Kent County Comprehensive Plan has put an emphasis on providing adequate infrastructure as well as a variety of nonresidential services, both public and private, for existing, planned, and anticipated residential development within growth areas. The County placed an emphasis on further refining the county's growth boundaries to serve two primary purposes: (1) efficiently directing public investments in infrastructure of all types, and (2) protecting the county's agricultural industry and natural resources from encroaching development.

The Delaware Corridor Capacity Program is designed to maintain the regional importance and preserve the capacity and function of existing participating routes. The program, in large part, is designed to maintain an existing road's ability to handle traffic efficiently and safely. Currently SR 1, US 13, and US 113 in Milford are routes within the MPO area that are included in the program. The goals of the program are accomplished though preventing unnecessary new entrances and driveways, minimizing the need for traffic signals, and providing for local service roads. The program relies on the purchase or dedication of access rights, purchase of development rights, purchase or dedication of easements, and fee simple acquisitions as implementation methods.

Routes currently in the program are primarily north-south oriented. An east-west route needs to be preserved as well, not only to serve residents but also business-related truck traffic. The east-west routes to consider for the program include SRs 8, 10, and 12.

Individual plans and ordinances control the current land use in municipal jurisdictions in Kent County. Dover has had new growth pressures and development conditions since the 1990s and the MPO and DelDOT have worked with the City to identify transportation improvements needed to accommodate these new developments. The South State Street Land Use and Transportation Plan identifies existing land use from Little Heaven to US 13 and points of existing inadequacies. This study projects possible future land use development scenarios and foretells of future inadequacies of the transportation system. Currently, in most of the corridor there is a lack of accommodations for bicycles and pedestrians. The DE 8 Concept Plan and Operations Study identified potential development and redevelopment plans along this corridor. This area is within the Corridor Overlay Zone described in the City of Dover's Zoning Ordinance. The Camden Comprehensive Plan identified areas of potential development expansion to the south of Camden along US 13A and SR 10. Camden's close proximity to Dover makes it likely that development will occur between the town and city. The land use along US 13 will continue to enjoy pressure for commercial development.

The Kent County Comprehensive Plan introduces the concept of Transportation Improvement Districts (TIDs, further discussed in Chapter 5) as a means of encouraging

growth in specific areas of where comprehensive, multimodal transportation system improvements may be developed.

4.10 Land Use Trends and Analysis of Growth Scenarios

There is a causal link, a positive feedback loop, between Transportation and Land Use. Land use patterns greatly influence regional travel patterns. In turn the degree of access provided by the transportation system can influence land development patterns. Transportation planners must make every effort to consider the comprehensive land use plans of the region and local jurisdictions and collaborate with land use planners while developing Long Range Plans. According to the Federal Highway Administration (FHWA) regulations for metropolitan and statewide planning, the metropolitan planning process should consider the following with respect to land use and transportation planning:

- The likely effect of transportation policy decisions on land use and development and the consistency of transportation plans and programs with the provisions of all applicable short- and long-term land use and development plans.
- The area's comprehensive long-range land use plan and metropolitan development objectives; national, state, and local housing goals and strategies; community development; and employment plans and strategies.

(citation?)

Comprehensive plans for Kent County, the City of Dover, Smyrna, and Milford, plans for virtually all jurisdictions in the county, have been reviewed to incorporate elements of existing and planned land uses in the region.

4.11 Land Use Scenarios

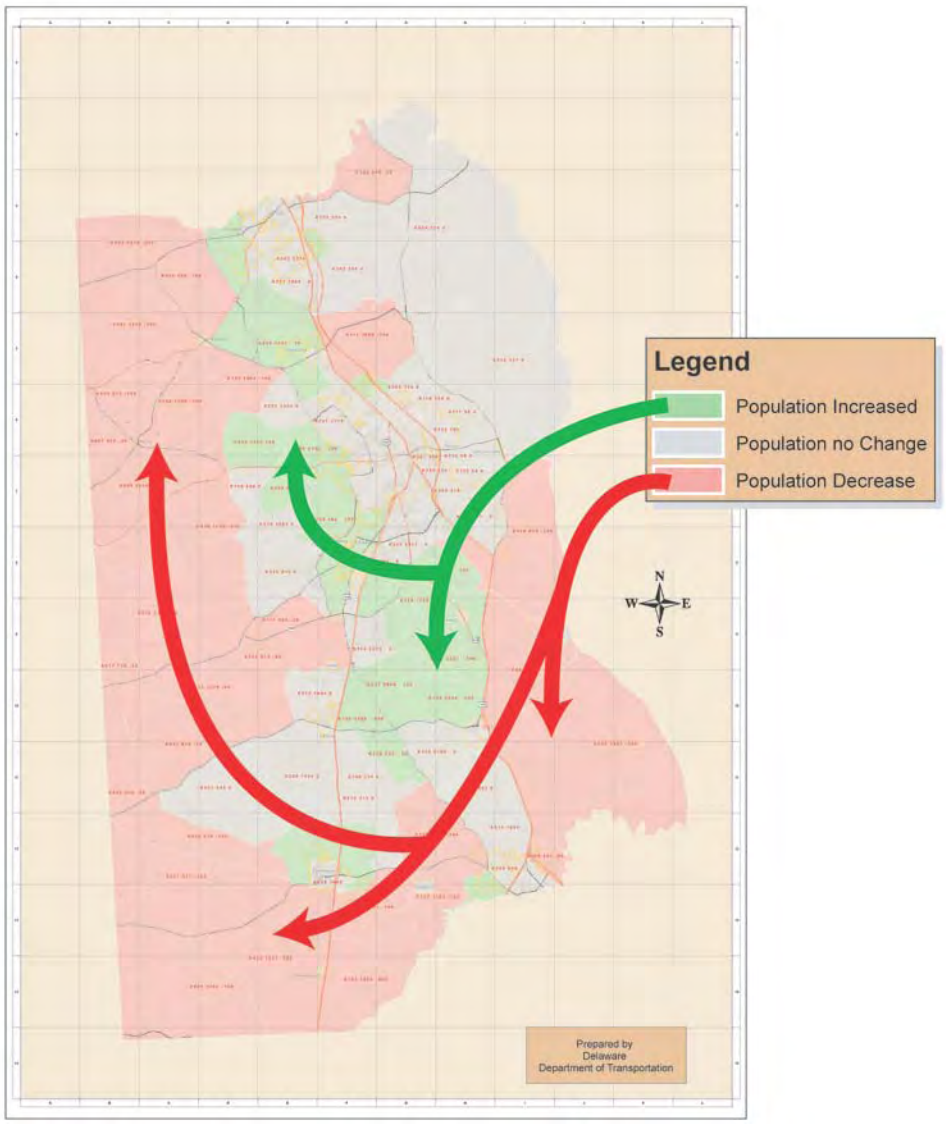
The DelDOT transportation model relies on population and employment forecasts developed by the Delaware Population Consortium as a basis for estimating the number of trips made in the year 2030. These estimates are derived from the Delaware Population Consortium's data using the Livable Delaware-based growth scenario. This scenario reflects adopted policy directives to concentrate future growth within a specified Growth Area, which is described in the 2004 Strategies for State Policies and Spending. The intent of Livable Delaware and the State Strategies is to concentrate growth in areas which are already developed and contain sufficient infrastructure to support further development, while discouraging growth in more rural areas outside of the Growth Area to attempt to preserve undeveloped land for other uses.

In addition to the Livable Delaware supported scenario, a more aggressive "Shift Scenario" has been assessed which further concentrates future development within the Growth Area for Kent County. This scenario allows for comparison of travel conditions associated with even greater concentrations of growth within already-developed areas. Both scenarios presume the same amount of overall growth in the Dover/Kent County MPO between today and 2030. Dover/Kent County MPO's population is estimated at 146,962 in 2005, and is forecast to grow to 205,535 by 2030. This projected net increase of 58,573 new residents is a 40 percent increase over today's population.

The Shift Scenario adjusts the baseline Livable Delaware 2030 scenario by reallocating approximately 3,700 of the projected 58,573 new Kent County residents from areas outside the Growth Area to TAZs inside of the Growth Area. Approximately 3,000 persons are redistributed from areas on the western side of Kent County, while 700 are drawn from

areas to the east. **Exhibit 4.21** portrays the results of these changes. These areas are in, adjacent to or near existing cities and towns (municipal jurisdictions) and correspond to growth area plans identified in comprehensive plans throughout the county. Decreases in population would be from agricultural and preservation areas.

Exhibit 4.21: Areas with Shifts in Population



Source: DelDOT

4.12 Assessing Future Transportation Needs

Kent County currently is being developed at a pace that will create conditions that will require State interdiction. Many of Kent County's roads are not currently improved to their functional classification. As a result, existing demand is not being satisfied and anticipated demand from approved but unbuilt residential lots cannot be accommodated. Further development along insufficient roadways should not be considered. The areas where infrastructure is not adequate for demand is where transportation improvements and land use controls must be a priority.

4.12.1 Travel Demand Analysis

To develop travel demand forecasts that would identify transportation system deficiencies, it was necessary to generate traffic volumes to represent:

- Existing conditions (2005)
- Projected (2030) "Base" conditions, including transportation improvement projects programmed through 2013
- Projected (2030) "Shift" conditions with transportation improvement projects programmed through 2013 **and** a shift of population to growth areas

4.12.2 Travel Demand Analysis Methodology

The traffic volumes were calculated and assigned to the roadway network by means of DelDOT's TRANPLAN computer model of Kent and Sussex counties. The model uses a three-step process. Demographic data is used to determine how many trips are generated or attracted by each TAZ (see Appendix for a more detailed map of the TAZ), and the TAZ to which each trip is destined. Trips are assigned to paths along the highway network based on minimal path travel times, forming link volumes. The minimum path between zones is calculated on the basis of link length, highway type, and link volumes.

The MPO member governments generally have developed land use policies intended to manage demand for public services by managing growth. Those efforts, and those of Kent County, culminated in the adoption of the Kent County Growth Zone map and the Cabinet Committee on State Planning Issues' *Strategies for State Policies and Spending.* These documents combines form the structure of Livable Delaware. The policies attempt to discourage, and are in reaction to, the negative impacts of sprawl, which requires travel by private automobile, increased daily trips and increased vehicle miles traveled, all contributing to decreased air quality. Sprawl places greater demand on the transportation system, requiring more costly public investment in maintenance and possible expansion of existing facilities and increased travel costs for residents. Consequently, the policies of the County and the included jurisdictions encourage growth in areas close to existing infrastructure. Mechanisms vary among communities but most utilize a facilitated development process and public funding to encourage appropriate development.

The modeling process used involved receiving "Base Scenario" (also referred to as Livable Delaware Scenario) and "Shift Scenario" population data for Kent County Traffic Analysis Zones from the Dover/Kent County MPO and Kent County Planning Department. The population data was utilized by the DelDOT travel demand model. Results from the model were compared on volume, speed, level of service, and emissions for each model run.

4.12.3 Projected Travel Conditions

Level of service (LOS) is an assessment of roadway and intersection congestion levels, expressed as LOS A through LOS F. LOS A is defined as free-flow; LOS E is defined as using all available capacity; and LOS F is defined as exceeding available roadway capacity. In adopting the Adequate Public Facilities Ordinance for roads, Kent County adopted a minimum LOS of C for all roads in an effort to ensure that adequate road capacity is maintained for new development.

Kent County's Land Use Map designates specific areas for development in an effort to concentrate investment in infrastructure. In order to direct development in keeping with the Land Use Map, the level of service within growth areas should be established at LOS D

while maintaining LOS C outside of growth areas. Kent County has established LOS D in growth areas that are more urban and suburban because LOS C cannot be achieved during peak hours, resulting in the pushing of development outward from designated growth areas to rural areas. The design LOS for areas outside the growth zone are expected utilizing controlled development, not building capacity enhancements.

Several corridor plans and studies have been conducted in Kent County. As part of these studies, a future LOS was determined for specific routes in the county. The DE 8 Concept Plan and Operations Study determined future (2030) LOS at the intersections of Saulsbury Road and Kenton Road to be LOS F and E, respectively. On South State Street the existing (2005) LOS during peak hours is between C and F. The ongoing North Dover Study projects failed intersections and roadways without significant investment by 2030.

4.12.4 Alternatives Analysis

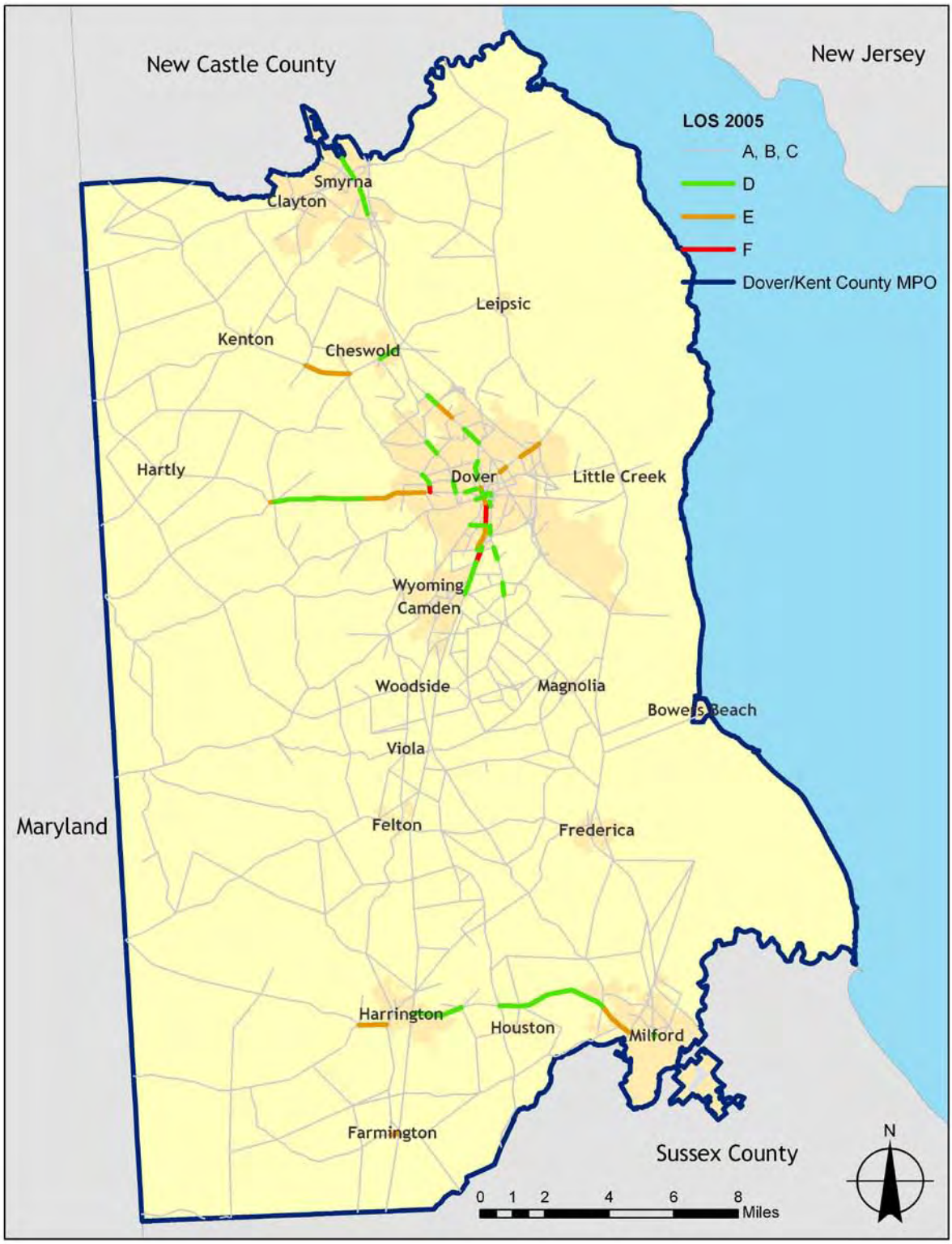
Travel demand projections from the Dover Plan Update indicate that though the majority of the transportation system operates effectively today, significant congestion is likely to occur. Several segments of roadway in and near Dover will be deficient by 2030, as seen in **Exhibit 4.23**. Also, with the "Shift" Scenario, there are segments where the LOS would be worse than the "Base" Scenario, as seen on **Exhibit 4.25**. Some of the travel demand may be addressed through the availability of several transportation modes. The exhibits on the following pages are introduced as:

Exhibit 4.22 displays the level of service in Kent County in 2005, the year used for comparisons. This illustrates that traffic congestion, as we all have experienced, is near urban and suburban areas particularly in the Dover area, Milford, and Smyrna. The worst congestion is in the City of Dover. Only two short segments of roadway show LOS F, however.

Exhibit 4.23 illustrates future LOS of the 2030 "Base" Land Use Scenario. This is the projected scenario that includes projects programmed through 2013 based on the Livable Delaware principles, but does not include projects from 2013 to 2030. The number of congested roadways is anticipated to increase on north-south routes that connect urban areas in the county and routes that provide for through traffic accessing the rest of the state. Routes 13, 113, and 1 experience the worst congestion.

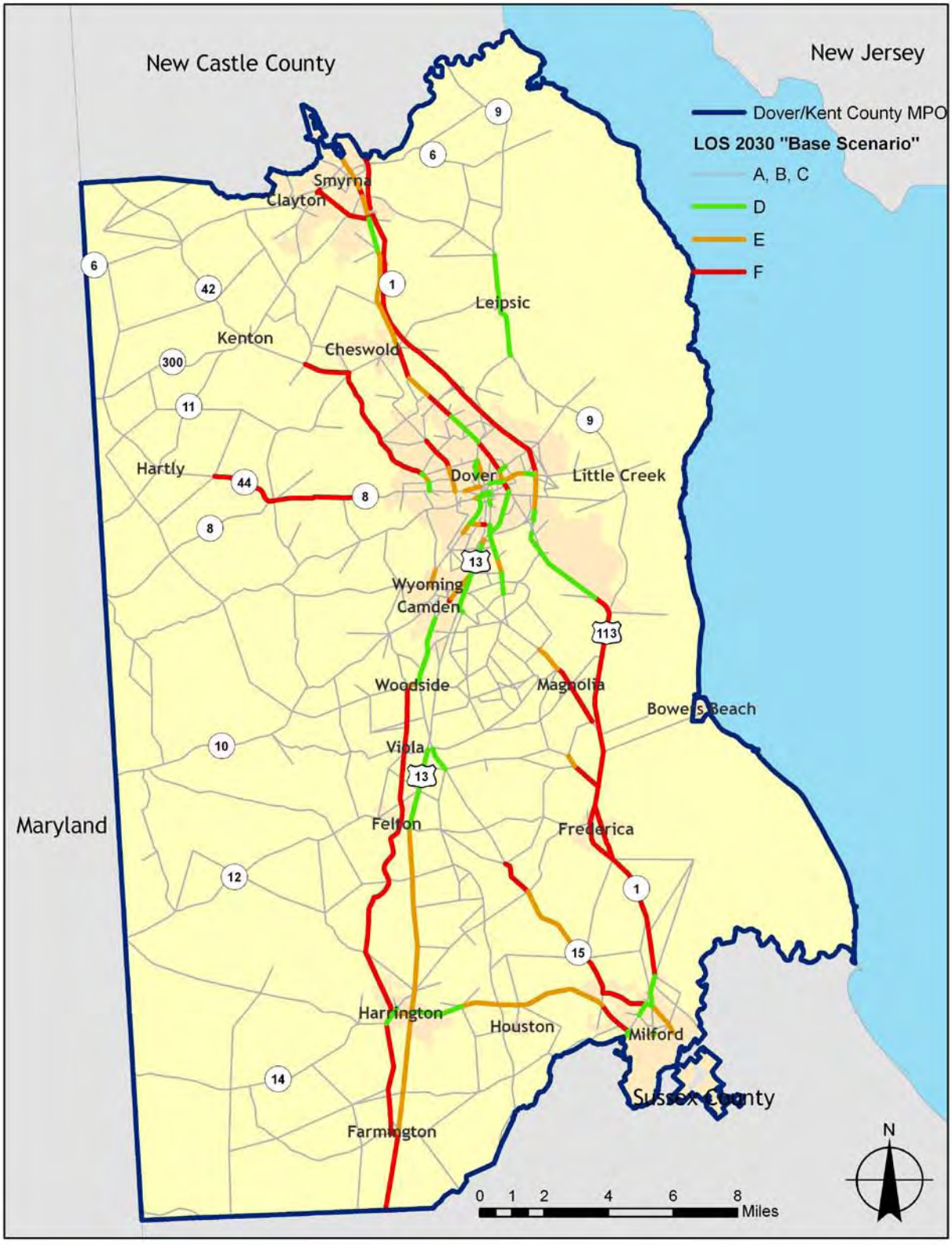
Exhibit 4.24 shows LOS with the proposed "Shift" scenario where populations are directed to core areas in the county, and also includes the projects programmed through 2013. **Exhibit 4.25** shows where changes to LOS would occur after the population shift. The difference between the "Shift" and "Base" scenarios is minimal. LOS is better in a few rural areas while LOS is worse in and south of Dover and in the town of Clayton.

Exhibit 4.22: 2005 Level of Service



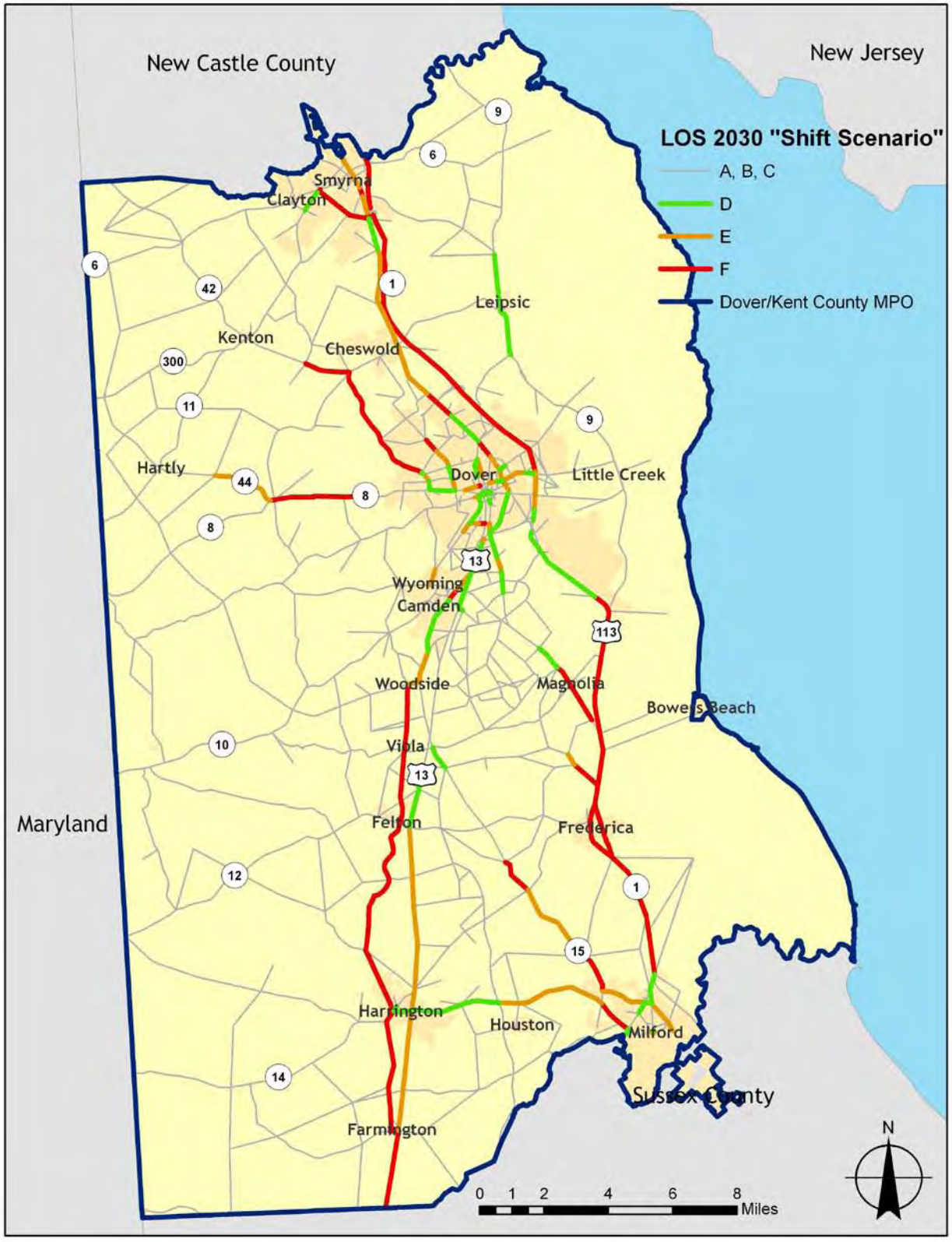
Source: DelDOT

Exhibit 4.23: 2030 "Base" Scenario Level of Service



Source: DelDOT

Exhibit 4.24: 2030 "Shift" Scenario Level of Service



Source: DelDOT

Exhibit 4.25: Level of Service Change between 2030 "Base" and "Shift" Scenarios

Source: DelDOT

4.12.5 Future Transportation Needs Summary

The road network in the MPO area is projected to become taxed under any scenario. A number of improvements will be necessary to the transportation network, including promoting transit and non-motorized transportation options. The level of service throughout the county will become increasingly deficient by 2030 under the "Base" Scenario.

Exhibit 4.26: Number of Miles with LOS E and F

	2005	2030 "Base" Scenario	2030 "Shift" Scenario
LOS E	8.4	58	41.3
LOS F	2.3	71	66.04

Source: DelDOT

Overall, the "Shift" Scenario appears to move a portion of travel in the county toward areas with existing and planned infrastructure, including roadways, transit, and bike and pedestrian modes. DelDOT concluded from the "Shift" Scenario results that there would be slightly higher volumes on certain roads in the growth area and slightly lower volumes on the majority of other roads. The "Shift" Scenario does not increase the number, length, or severity of anticipated level of service issues on Kent County roads. In fact, there is a noticeable improvement in total number of miles of roadway in LOS E and F as seen in **Exhibit 4.26**. There is projected to be a 35.7% decrease in road miles that did not meet the target minimum LOS under the "Shift" scenario.

4.13 Conclusions

The development the MPO area has experienced in the recent past has burdened the transportation infrastructure at a pace greater than the necessary improvements will be made. The development and driving habits of our residents have combined to decrease the drivability of our roads and worsen the quality of our air. The response by the State Department of Transportation and Kent County and local land use controls will influence the future we will enjoy.

5. Transportation Strategies and Actions: 2009 – 2030

Chapter 5 discusses the fundamental strategies that form the framework around which the Regional Transportation Plan is constructed. This chapter also discusses transportation investment strategies from the Strategies for State Policies and Spending, as well as other state agency plans. This chapter further recommends actions that should be taken to implement the strategies.

5.1 RTP Framework

5.1.1 Fundamental Strategies

There are five fundamental strategies that form the framework of the RTP. The strategies are listed in order of their relative importance and impact on the region and its residents. The more cost-effective strategies are listed with a higher preference.

These strategies were developed to ensure that investments are made to support the vision of this RTP. The strategies are made to concentrate transportation investments in areas where growth is needed and is desirable. Using the fundamental strategies, transportation investments can be coordinated with land use decisions to create a comprehensive transportation system for Dover/Kent County MPO region.

FUNDAMENTAL STRATEGIES

1. **Preserve and maintain the existing transportation system while improving safety and security**
2. **Improve the management of the existing transportation system**
3. **Develop and expand other modes of transportation**
4. **Provide additional system capacity**
5. **Focus transportation investments**

These strategies concur with the Livable Delaware Agenda which describes guidelines regarding the general types of investments to be made in different areas of the county. Strategies from the Livable Delaware Agenda support the vision of this RTP update. This initiative guides growth in areas that are prepared for infrastructure investments and planning.

Each of the five fundamental strategies is briefly discussed below and then in detail, including associated actions. Actions are identified to meet the strategies that guide the RTP.

Fundamental Strategy 1: Preserve and Maintain the Existing Transportation System

Preserving and maintaining the existing transportation system is the first step to maximizing the value of the network. The base transportation system must be maintained to operate at the same, or better, functional level in 2030 as in the present. A reduction in the network's operating capacity must be prevented. Maintenance must also occur to ensure the safe movement of goods and people. By guiding development, controlling access, and taking active steps to preserve the existing transportation system, investments that have already been made can largely be maintained.

Fundamental Strategy 2: Improve the Management of the Existing Transportation System

Improving efficiency through the use of technology, such as intelligent transportation systems, to better manage the existing system can increase capacity. DelDOT continues to improve the current system's capacity through its Transportation Management Program and through implementation of various technology and management strategies referred to as Integrated Transportation Management Systems (ITMS). Actions which help improve management of the existing transportation system can avert the need for new roadway facilities.

Fundamental Strategy 3: Develop and Expand Other Modes of Transportation

Providing transportation options beyond the personal vehicle helps to meet the access and mobility needs of Kent County residents. Expanding facilities and services for modes such as walking, bicycling, ridesharing, and transit supports the plan's vision by increasing travel options for residents, providing basic mobility for those who cannot drive, and reducing the need to own an automobile. Expanding facilities and improving efficiencies for other modes including freight supports the vision by increasing economic development while reducing vehicle emission impacts on the environment. Actions that provide for other modes of transportation reduce reliance on personal vehicles and the need for new roadways.

Fundamental Strategy 4: Provide Additional Roadway System Capacity

Adding new roadways to increase capacity will be necessary where other strategies are not sufficient. Constructing new roads is not the emphasis of the RTP, but is a necessary part of producing and maintaining a sustainable transportation system. Providing for additional roadway capacity includes complementary facilities for walking, bicycling, and transit, where possible.

Fundamental Strategy 5: Focus Transportation Investments

The first four transportation strategies identified need to be supported by focusing transportation investments in areas where growth and development are desired and should be supported. Consequently, the strategy of focusing transportation investments equates to the need to link land use and transportation. This strategy focuses on how existing land uses and land use plans are currently affecting and will shape future transportation demand. Delaware and Kent County have developed policies for focusing transportation investments, which are supported and embraced by this plan. Theses policies and the geographic areas associated with them are based on land use and the type of activities that would typically be in those areas.

5.1.2 Kent County Comprehensive Plan

Kent County began its efforts to focus development and infrastructure investments, including transportation, when it adopted its Growth Zone Overlay District, which encompasses an area that Kent County determined new development should be encouraged. To that end, incentives such as area and bulk requirement reductions were developed to encourage development within the zone rather than in the more rural areas of the County. The Growth Zone Overlay District was aslo an area that Kent County identified where infrastructure such as water, sewer, and transportation facilities existed or were planned to serve development. Growth Zone boundary, the geographic area of the district was integrated into the Kent County Comprehensive Plan, as well as the Official Zoning Map.

Kent County also supports the focusing infrastructure investments through its Transfer of Development Rights program, adopted in August 2004. The purpose of the program is to enable owners of land located outside the designated Growth Zone Overlay to sell the rights to develop their land to buyers for utilization within designated growth areas. The program was developed in response to increasing pressure to develop rural agricultural areas outside the designated Growth Zone Overlay where essential infrastructure and support services necessary to sustain suburban and urban land uses do not exist and are not planned.

Kent County adopted its Adequate Public Facilities Ordinance (APFO) in October 2007 for the purpose of ensuring that essential public facilities, such as roads, needed to support new development meet or exceeds defined level of service standards and that they are available concurrent with the impacts of the new development. The ordinance ties the analysis of the impact of a proposed development on the public facilities to the development approval process in an effort to coordinate the provision of public facilities with development. This ordinance supports making infrastructure investments where they are needed most.

Most recently, Kent County developed Transportation Improvement Districts (TIDs) as part of the 2007 Comprehensive Plan: Building Communities. TIDs are a geographic representation of developing areas where the transportation system must be integrated with land use and significant investment in the system is required. Within these areas, the County, DelDOT, the MPO, and the community intend to develop specific plans for transportation improvements. TIDs support land use plans and have a network of roads that supports everyday transportation needs related to work, school, or recreation. TIDs are meant to reduce the number of required studies in a specific area by utilizing a master plan. The districts help to ensure the infrastructure improvements are keeping pace with new residential and commercial development.

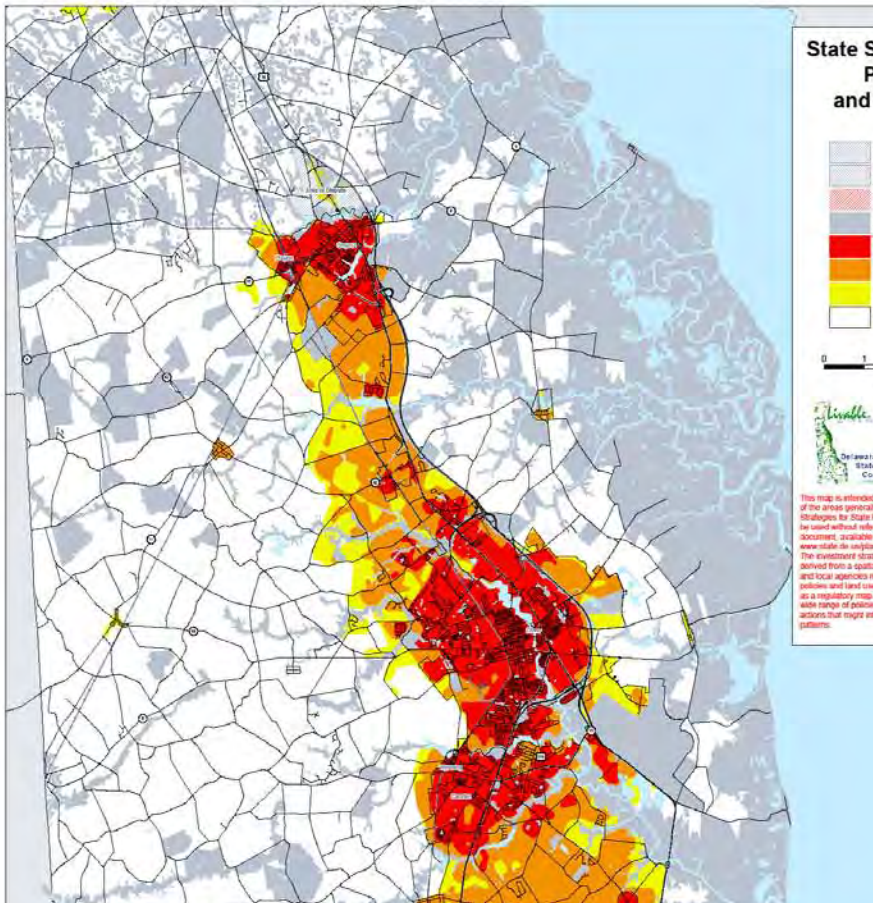
5.1.3 Strategies for State Policies and Spending

As discussed in Chapter 1, the Livable Delaware Agenda builds on the foundation of the 2004 Strategies for State Policies and Spending, which identify levels of transportation investment areas. This is a guideline for the type of transportation investments to be made at each of these levels and where they should be located. **Exhibit 5.1** shows where each of the investment levels is identified in Kent County.

Each investment level and its corresponding transportation strategies are described in the following section. Definitions provide an explanation of the various investment levels with a description of each associated investment area. In addition to the investment areas associated with investment levels, there are areas that require resource protection and sustainable growth in environmentally-sensitive areas.

There are four levels of investment areas. The levels range from urban areas with compact development to transitional areas to environmentally-sensitive and agricultural lands. The majority of Kent County is included in investment Level 4, which is characterized by mostly rural land.

Exhibit 5.1: State Strategies for Policy and Spending



5.1.3.1 Level 1 Investment Area and Transportation Strategies

Description of Level 1 Investment Area

People have historically congregated for access to convenient housing, commerce, and social interaction. Whether they are called villages, towns, or cities, these areas are characterized by a lively pace, a core commercial area, several modes of transportation, and a variety of housing options ranging from detached single family homes to multi-family apartments.

These population centers are often built around a traditional central business district or "downtown," which offers a wide range of opportunities for employment, shopping, and recreation. They usually have a concentration of cultural and entertainment facilities, and a wide array of public institutions, services, and amenities (such as post offices, police and fire stations, libraries, hospitals, and other health care facilities). Although the scale of these population centers varies throughout the region, from the City of Dover to smaller towns such as Felton, the Strategies for State Policies and Spending document calls them all by one name: Investment Level 1 Areas.

These relatively compact patterns of development tend to have a human scale and are notably walkable, with the generally accepted range of one-quarter to one-half mile being the farthest that people are willing to walk to reach their destination. Beyond this distance, another mode of transportation is usually sought. Investment Level 1 Areas provide a range of transportation choices, making it possible to pursue daily requirements by foot, bike, private vehicle, and in limited quantities and locations, by transit.

Investment Level 1 Areas may also have overlooked opportunities in the form of underused or previously used sites (some of which are called "brownfields"), as well as a century or more of public and private investment in services, facilities, and buildings. These are places where significant investment already exists in roads, bridges, airports, water and sewer systems, schools, commercial and industrial buildings, and houses.

Investment Level 1 Areas provide regional and local identity and a sense of place to employment centers and recreational venues. The Dover/Kent County MPO region contains 20 incorporated communities varying in size from its largest city, Dover, to smaller towns such as Hartley and Farmington. Intensely developed areas in and around Dover, Milford, and Smyrna function in a similar manner. These Investment Level 1 Areas drive Delaware's economic engine.

The state's goals clearly recognize the value of these Investment Level 1 Areas and provide for their continued health and vitality through reinvestment and redevelopment, and through the efficient use and maintenance of existing public and private investments.[1]

Investment Level 1 Transportation Strategies

The following transportation strategies correspond with the characteristics of a Level 1 Investment Area.

- Provide the greatest number of transportation options, emphasizing public transportation, walking, and bicycling.

[1] http://stateplanning.delaware.gov/strategies/strategies.shtml

- Make existing infrastructure and planned improvements as safe and efficient as possible.
- Projects typically should include new or expanded facilities and services for all modes of transportation, including public transportation facilities and services when compatible with development patterns.
- Projects include those that manage traffic flow and congestion, support economic development and redevelopment efforts, and encourage connections between communities.

5.1.3.2 Level 2 Investment Area and Transportation Strategies

Description of Level 2 Investment Area

These diverse areas surround many municipalities and also seem to be the most popular portion of Delaware's developed landscape. They serve as transition areas between the Investment Level 1 Areas and the state's more open, less populated areas.

These areas are often characterized by a limited variety of housing types (predominantly detached single family dwellings); commercial and office uses serving primarily local residents (examples include food, drug, and video rental stores); and a limited range of entertainment, parks and recreation, and cultural and institutional facilities.

Innovative developers, architects, and land use experts recognize that the historic design of suburban developments could be improved by incorporating a mix of housing types and commercial uses as well as interconnecting roads, walkways, and bikeways between developments. They also recognize that compact development strategies may fit within areas adjacent to existing towns and population centers. These elements, designed with a greater concern for aesthetics and the environment, would revive the feel of the traditional "village," providing a stronger sense of community.[2]

Investment Level 2 Transportation Strategies

The following transportation strategies correspond with the characteristics of a Level 2 Investment Area.

- Encourage sensible development through a planned set of phased transportation investments, land use coordination, and policy actions consistent with zoning densities and designations.
- Transportation projects should expand or provide roadways, public transportation, pedestrian walkways, bicycle paths, and other transportation modes.
- Manage traffic flow, support economic development efforts, and encourage connections between communities.

5.1.3.3 Level 3 Investment Area and Transportation Strategies

Description of Level 3 Investment Area

Investment Level 3 Areas are portions of county-designated growth zones, development districts, or long-term annexation areas in municipal comprehensive plans that aren't in the Investment Level 1 or 2 designations on the state's strategy map. In Kent County they mostly include areas outside Investment Level 1 or 2 Areas built within the county-designated "Growth (Overlay) Zone." This growth zone includes the area within a two-mile radius of existing

[2] http://stateplanning.delaware.gov/strategies/strategies.shtml

wastewater system pumping stations. There are also areas designated as Investment Level 3 in the region where there are environmentally-sensitive features, agricultural preservation issues, or other infrastructure issues which should be considered by state agencies and local governments when evaluating spending decisions and/or development proposals.

Although these areas may be primarily used for agriculture today, they are experiencing development pressure, and may not remain predominantly rural in the long term.[3]

Investment Level 3 Transportation Strategies
The following transportation strategies correspond with the characteristics of a Level 3 Investment Area.

- Continue to invest in the regional roadway network, maintenance of the existing roadway system, and roadway safety.
- Continue to protect the capacity of major transportation corridors such as Routes 1, 113, and 13 through the Corridor Capacity Preservation Program.
- Roadway improvements that are necessary to support new development activities will not be preferred. Investments will be prioritized in Investment Level 1 and 2 areas.

5.1.3.4 Level 4 Investment Area and Transportation Strategies

Description of Level 4 Investment Area
Agriculture continues to be a major industry in Delaware, as it was a century ago. The state's open spaces and rural vistas are critical components of the quality of life Delawareans enjoy, as are the small settlements and historic villages reflecting earlier times. Marshlands, wooded areas, and a network of waterways support an abundance of wildlife, provide recreation, and help define the Delaware scene.

Delaware's Investment Level 4 Areas are predominantly agricultural. These areas contain agribusiness activities, farm complexes, and small settlements. They are typically found at historic crossroads or points of trade, often with rich cultural ties, such as Little Creek, east of Dover.

Investment Level 4 Areas also boast undeveloped natural areas, such as forestlands, and large recreational uses, state and county parks, and fish and wildlife preserves. Sometimes private recreational facilities such as campgrounds or golf courses (often with associated residential developments), are situated in Investment Level 4 Areas.

Some limited institutional uses may exist in such areas. Delaware's Investment Level 4 Areas are also the location of scattered residential uses, featuring almost entirely single family detached residential structures. These are homes for those who value the quiet and isolation provided by locations away from more developed settings, albeit with an almost total reliance on private vehicles for every transportation need.

Delaware's Investment Level 4 Areas also include many unincorporated communities, typically with their own distinctive character and identity. These places reflect the rich rural heritage of

[3] http://stateplanning.delaware.gov/strategies/strategies.shtml

the state. Investment Level 4 Areas depend on a transportation system of primarily secondary roads linked to roadways used as regional thoroughfares for commuting and trucking.[4]

Investment Level 4 Transportation Strategies
The following transportation strategies correspond with the characteristics of a Level 4 Investment Area.

- Preserve existing transportation facilities and services and manage the transportation system to support the preservation of the natural environment.
- Transportation projects should only include necessary drainage, maintenance, and safety improvements and programs to manage regional highway facilities.

5.1.4 Comparison with other state agency plans

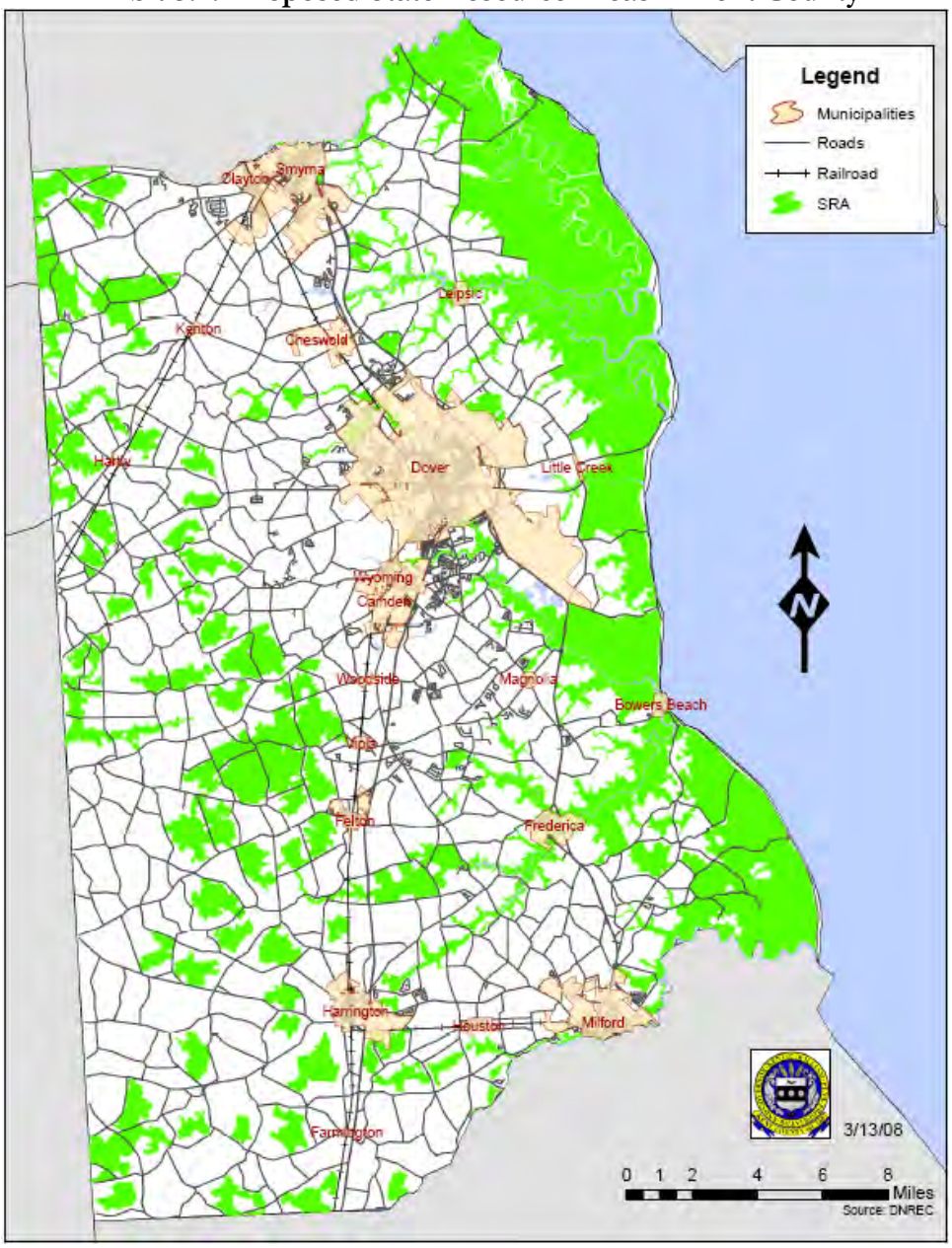
5.1.4.1 State Resource Areas (SRAs)

SRAs are the most important natural open space lands valued for their natural, cultural, and geological significance as determined by the Delaware Department of Natural Resources and Environmental Control (DNREC). Proposed natural and open space areas designated for protection have been included in the SRA map. It is proposed that Kent County have 69,594 acres (69 percent) of its SRAs under protection, with another 31,964 acres (31 percent) of its SRAs—or 8 percent of the overall county acreage—afforded additional protection.

Providing additional protections for Kent County's designated SRAs would help focus future development in areas with or near existing infrastructure. Less new transportation infrastructure would be needed in these environmentally sensitive areas, resulting in the need for less mitigation of negative impacts.

[4] http://stateplanning.delaware.gov/strategies/strategies.shtml

Exhibit 5.2: Proposed State Resource Areas in Kent County



5.1.4.2 Delaware Economic Development Office (DEDO), Kent County Action Plan

The Kent County Action Plan sets forth a series of goals, objectives, and recommendations that the Kent Comprehensive Economic Development Strategy (CEDS) Committee feels are appropriate to address economic development in the county and achieve their vision for the future. The Kent CEDS Committee's vision, goals, objectives, and recommendations collectively comprise the Kent County Action Plan.

CEDS sets the following vision: "While capitalizing on and preserving its small town, agricultural, and historic characteristics and its status as the home of major government and higher-education facilities, Kent County will, through:

- infrastructure improvement;
- a diverse, qualified workforce; and
- unified public and private stakeholders;

support an economy that fosters and maintains a diverse set of industries, providing residents with quality jobs."[5]

The Kent County Action Plan continues with a series of goals, objectives, and recommendations that support these areas. Of most relevance to this RTP update is Goal 6, focusing on infrastructure: To provide Kent County with adequate infrastructure and transportation resources to support economic development. The Kent CEDS Committee includes the following objectives and recommendations in order to address infrastructure issues.

- Objective 6-1: Provide adequate utilities to meet the needs of business centers, residential growth areas, and existing communities that need infrastructure improvements.
- Objective 6-2: Provide an adequate vehicle, bicycle, pedestrian, freight, and public transportation network to meet the needs of business centers and residential growth areas.
- Objective 6-3: Provide adequate education infrastructure.

  - Recommendation 1: Identify infrastructure deficiencies by utilizing the work of existing organizations such as the Dover/Kent MPO where feasible, and further study where needed.
  - Recommendation 2: Utilize public-private partnerships and intergovernmental coordination mechanisms to fund needed infrastructure improvements.
  - Recommendation 3: Advocate that Kent County receives its fair share of state resources.
  - Recommendation 4: Ensure that adequate public facilities are in place for both new and existing development.
  - Recommendation 5: In coordination or partnership with the Central Delaware Economic Development Council, establish a committee to prioritize the most-needed infrastructure improvements and seek Economic Development Administration and other funding for these improvements.
  - Recommendation 6: Generate funding devoted to assessing and expanding the number of "shovel-ready" business and industrial parks within the county.
  - Recommendation 7: Coordinate with Dover Air Force Base (AFB) and its supporting businesses to protect and support its mission.

These recommendations have been considered with the goals and projects embodied within the RTP update, related to the role transportation plays in support of economic development.

5.1.4.3 Kent County Economic Development Strategy Initiative

Published in October 2006, the objectives of this 10-year economic development strategy were to:

[5] Delaware CEDS: Comprehensive Economic Development Strategy for the State of Delaware, Final CEDS Summary, August 2006, page 16.

- Address the employment needs of current and future residents while responding to the resource requirements of its businesses.
- Understand Kent County's economic development strengths and weaknesses from the "big picture" perspective, taking into account competition from other mid-Atlantic counties.
- Respond to a changing economy as well as unprecedented population growth by providing a strategic plan for Kent County's economic development program.
- Identify the facilities, resources, and organizational support necessary to achieve Kent County's goals for economic growth and development.

The transportation-related assessment focused on transportation access.

- The county has rail access and a good network of highways, but not direct access to an interstate highway. SR 1 will need additional interchanges to facilitate traffic flow to employers located within the central corridor and relieve traffic on US Route 13.
- The closest commercial air access is 60+ minutes to Philadelphia. There needs to be additional hangar and runway capacity within the county apart from the Dover AFB facility—particularly as security tightens in the future.

These recommendations complement projects to which Delaware has made a commitment and are included in this plan. First is the construction of grade-separated intersections on SR 1, toward the goal of creating a totally limited-access highway. The second commitment is upgrading the runway at the Delaware Air Park. Further studies are recommended for the Civil Air Terminal and joint use of the DAFB facility.

5.2 Detailed Discussion of Strategies and Actions

A series of identified actions related to the fundamental strategies is summarized at the end of this chapter in **Exhibit 5.10**.

5.2.1 Fundamental Strategy 1: Preserve and Maintain Existing Transportation System

The first fundamental strategy of the RTP is the most cost-effective. This strategy has the highest preference to conserve capacity for the future and better manage transportation resources. To meet the purpose of this strategy, a number of actions are recommended. These actions focus on maintaining the existing transportation system and the future capacity of roads and vehicle miles traveled. These actions also need to meet air quality standards, which are more readily attained when the transportation system functions at a desired level.

Summary of Recommended Actions:

- Maintain the existing highway system
  The existing highway system is the basic and most used part of the transportation network in Kent County. The system must be maintained to achieve the level of service indicated in land use scenarios/modeling output.

- Participate in the Corridor Capacity Preservation Program (CCPP)
  DelDOT's Corridor Capacity Preservation Program was developed to preserve the current operating conditions of arterial roadways, minimize transportation impacts

of economic growth, and prevent the need to build a new road on a new alignment. Corridor preservation allows roads to be protected for their intended function, which will maintain the existing transportation system. This program is supported by emphasizing the use of local roads. Routes can be included in the program through a nomination process. Currently within Kent County, SR 1, US 13, and US 113 are included in the program. All routes that are in the CCPP are north-south. East-west routes should be considered for inclusion in the program, including SRs 8, 10, and 12.

- Construct roadways to their functional classification
  Different types of functional roadway classifications dictate the geometric design of the facilities and are closely linked to the types of uses expected. New construction should occur in concert with the guidelines for types of facilities built and existing roads should be maintained at their specified functional classification.

- Maintain the primary truck routes
  Primary truck routes are discussed in Chapter 3. These routes need to be maintained for the movement of goods in and through the region. They also need to be maintained in safe operational conditions at a standard that assists in the movement of goods.

- Preserve existing rail facilities
  The location of existing rail facilities is discussed in Chapter 3. Rail freight transportation is vital for several local industries in the Dover/Kent County MPO region. However, there is no regularly-scheduled passenger service. Preserving rail facilities helps to potentially reinstate, and expand, passenger rail service to Kent County.

- Maintain existing transit and paratransit services
  Existing transit and paratransit services should be maintained with a focus to increase ridership. Maintenance should include a clean, comfortable, reliable, and safe operating condition to attract riders to fixed-route transit services. Paratransit vehicles and systems should be provided to those who truly need it.

- Maintain the infrastructure to support Dover Air Force Base's military mission
  Dover AFB should continue to play an important economic and strategic role in the county. The roadway network needs to be maintained to support Dover AFB's shipment of goods.

- Maintain access to major airport hubs
  Access to air service should be maintained and made attractive to increase users. Roadways to airports should be maintained, well signed, and be part of the Intelligent Transportation System (ITS) network.

- Preserve capacity at key routes
  As development occurs, it is crucial that capacity for future growth be preserved. New roadway or other expansion projects should not progress unless right-of-way is considered along county and state routes early on in the process. The

Dover/Kent County MPO and DelDOT should develop a "hybrid" CCPP program that takes into account the specifics of planned developments that may affect county and state routes.

- Continue improving transportation network safety and security
  Work with DelDOT Operations on assuring that key network elements follow federal security guidelines. Safety standards on all roadway and intersection improvements and upgrade projects should be promoted. Recommendations of DelDOT's 2006 Strategic Highway Safety Plan should be implemented.

5.2.2 Fundamental Strategy 2: Improve Management of Existing System

Summary of Recommended Actions:

- Implement Intelligent Transportation Systems
  Intelligent Transportation Systems (ITS) are designed to increase the efficiency and capacity of transportation infrastructure in order to manage congestion. DelDOT assists drivers through the use of new technologies including electronic toll collection; smarter, more responsive traffic signals; real-time information; and in-vehicle information systems.

  In 1997, DelDOT adopted the Integrated Transportation Management Strategic Plan (ITMS). DelTrac implements the program. Since adoption of this plan, several actions have taken place:
  - The E-ZPass electronic toll collection system has been instituted at the SR 1 Dover toll plaza; installation of a smarter signal system on US 13 and US 113 from Smyrna to Milford has been initiated; and a statewide transportation management center has been constructed in the Smyrna area. A network of 13 real-time video cameras provide instantaneous information as part of the Video Monitoring System that supplies information to the Web, radio, television, and other media.
  - Signalization improvements have been implemented in the Dover area. In the last decade, DelDOT has incorporated an increasing number of state-controlled traffic signals into the DelTrac system. Its initial focus was on US 13, SR 113, SR 10, and Division Street. These improvements were part of a two-phased program, allowing DelDOT to reduce traffic jams and travel time by monitoring current conditions and adjusting traffic signals.
  - DART First State implemented an automated fare collection system and an automated vehicle location system to improve demand responsiveness and decrease travel delay.
  - DART First State also implemented real-time traveler information at bus stops to inform passengers of bus arrival times.

- Corridor, intersection, and facility upgrades
  When other management techniques fail to provide needed capacity, resulting in a poor level of service, existing roadways should be upgraded. Upgrading a facility means that existing travel lanes may be widened (typically by one or two feet), or new shoulders or turning lanes may be added, but additional travel lanes are not added. Access can also be better managed in order to preserve the roadway's capacity. For example, if the facility is part of DelDOT's CCPP, the type of

solution implemented can minimize the transportation impacts of increased growth.

As described under Fundamental Strategy 3, to develop and expand other modes of transportation, the concept of Complete Streets can and should be considered when existing facilities are improved, particularly if the project is not a part of the CCPP.

- Commercial corridors
  Commercial corridors are roadways that serve primarily retail and other commercial land uses. These corridors enhance access and circulation to adjacent businesses for all modes of transportation. Commercial corridors are attractive to businesses and other development.

  The Town of Camden Comprehensive Plan indicates the potential for development into areas south of Camden along US 13A and SR 10. These areas are identified for Highway Commercial uses. US 13A and SR 10 need to be upgraded to serve commercial uses and attract this type of development.

  South State Street is a crucial north-south roadway. This corridor has long been recognized as a problem area by members of the community and state and local officials. The South State Street Area and Access Study identifies the problems along this corridor and makes recommendations for the future. The study suggests making improvements through the use of Transportation System Management options, Travel Demand Management options, alternate travel methods promotion, and two-way center left turn lanes.

- Increase the efficiency of existing transit services
  Fixed-route and paratransit services can operate more cost-effectively by increasing ridership and promoting a shift from paratransit to fixed-route service by those passengers able to use it. Management activities that can result in increased ridership are better advertising and promotion, travel training to increase passenger confidence, providing passenger amenities such as protected benches and continuous sidewalks, minimizing non-revenue mileage, using equipment that fits the type and magnitude of the service being provided, and dispatching equipment more efficiently.

- Increase usage of existing park-and-ride/park-and-pool facilities
  Existing park-and-ride and park-and-pool facilities in the MPO region can be used to a greater degree. Promotion of the facilities should be improved to make potential riders aware of the locations and services of the facilities. If feasible, facilities should be added in areas that do not have convenient access to this service.

- Support Transportation Demand Management (TDM) strategies
  Techniques are available to reduce travel demand that require very little or no public investment in the transportation system. In addition to transit, these include ridesharing, flexible work hours, telecommuting, and parking management. For example, subdivision and zoning ordinances could be revised to reduce parking requirements in exchange for on-site transit amenities. Adopting the recommendations of the MPO's *Suburban and Community Street Design Study* would support transit-friendly development as well as walking and bicycling. Establishing telecommuting centers in proximity to major transportation centers could reduce long-distance commuting. Being an active member of the Transportation Management Association of Delaware would help efforts to get more local employers to offer employer-based commuting options.

  TDM strategies have proven to be effective and efficient methods to combat traffic congestion and promote accessibility. As part of a jurisdiction's comprehensive plan, TDM tactics offer low-cost and flexible transportation solutions. Whether accommodating growth or responding to unmet transportation needs, TDM programs can support travel for every purpose and segment of the community.

  DART's RideShare Delaware provides a number of TDM suggestions for use by planners, consultants, and elected officials, to be included in comprehensive plans:
  - Require TDM plans for all site plans and use permits for developments that have a negative impact on travel as determined by level-of-service triggers.
  - Require TDM plans for all existing public buildings and facilities.
  - Execute annual travel surveys to determine travel habits and characteristics.
  - Annually evaluate levels of TDM activities with the results of the annual travel survey.
  - Require TDM plans for all non-work travel activities that are publicly-funded.
  - Encourage employers large and small to offer employees transit benefit programs.
  - Initiate parking cash-out programs.
  - Implement traffic impact or parking fees.
  - It is further recommended that state and local government agencies take a lead in incorporating TDM strategies at their respective worksites as a means to lead by example.

- Apply access management techniques
  Access management focuses on preserving and improving the operating condition of corridors by regulating the number, spacing, and design of access points (i.e., driveways). Among its benefits are fewer and less severe accidents, increased roadway capacity, less congestion, reduced travel delay, support for economic development, improved fuel economy and reduced motor vehicle emissions, enhanced mobility of people, and improved accessibility. Access management achieves these benefits by applying the following principles:
  - Limiting the number of conflict points by designing entrances that minimize the number of turning movements.

- Separating conflict points by regulating the proximity of entrances to street intersections and establishing minimum spacing standards for interchanges, intersections, median openings, entrances, and driveways.
- Removing slower-moving turning traffic from through traffic lanes by ensuring adequate entrance widths and turning radii, using acceleration and/or deceleration lanes, using turn lanes, and designing adequate on-site circulation and parking.
- Maintaining a smooth flow of traffic between signals through proper signal spacing.

The guidelines for access management techniques are outlined in DelDOT's "Standards and Regulations for Subdivision Streets and State Highway Access."

5.2.3 Fundamental Strategy 3: Develop and Expand Other Modes of Transportation

Summary of Recommended Actions:

- Expand existing DART First State transit service hours and route coverage.
  Expand DART First State Transit Service and routes to include areas not currently served.
  The Delaware Transit Corporation (DTC) Business Plan for Fiscal Years 2008-2013 identified the following needs for Kent County:
  - Continue the Dover GoLink Project and examine its potential for other regions of Delaware.
  - Continue Saturday service and institute Sunday service.
  - Review system design and expand services to newly-developed areas.
  - Institute local transit service in Milford and between Smyrna and Dover.

- Support opportunities for expanded rail freight service
  Rail service is used only for inbound bulk shipments to agricultural, chemical, construction, and utility companies in Kent County. Opportunities for increased utilization of rail service should be developed and accommodated. There are major manufacturing industries that could use rail service to ship finished products. Expanding rail freight transportation opportunities supports the vision of this RTP.

- Facilitate access to the rail system
  Complementary to expanding use of the rail system, particularly by industries not adjacent to the tracks, is the need for good intermodal connections between rail and highway facilities. Candidate sites should be considered south of Dover and in the Smyrna and Harrington areas, adjacent to the mainline track. These studies should also examine relocating the switching operations taking place along New Burton Road in Dover and in downtown Harrington.

- Support opportunities to expand aviation facilities
  Based on the Air Cargo Study, the Civil Air Terminal has the potential to be expanded to accommodate the commercial air cargo that serves Dover AFB. This opportunity could result in non-military commercial air freight in the future. In addition, the study examined expanding the facility for use during NASCAR races. Both of these options warrant further investigation.

Improvements identified for the Delaware AirPark need to be completed to ensure its establishment as Kent County's general aviation airport. These improvements need to be accomplished while taking into consideration the residents and burgeoning development in and around Cheswold. Of particular interest is the addition of new hangars to accommodate additional airplanes.

- Facilitate access to public/private airports in the region's transportation system
  Kent County has several privately-owned airports that are frequently used by an active general aviation community. Concern has been expressed, however, that the continued existence of general aviation airports is entirely dependent upon the business decisions of their owners. In response to these concerns, the state has acquired Delaware AirPark, located seven miles north of Dover off Route 42. The Delaware River and Bay Authority (DRBA) has leased and operates the airport for the state. This is a giant step for aviation in Kent County since there was no publicly-owned airport in the county prior to this venture. Over the next five years, the DRBA and the state will make improvements to the runway and taxiway and install new hangars.

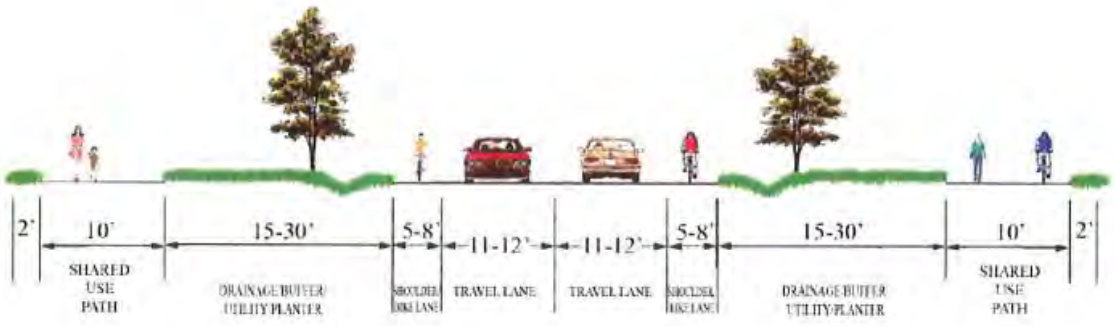
- Design streets for use by all ("Complete Streets")
  

  Many benefits may be realized by planning, designing, and constructing streets that accommodate a variety of user groups. Chief among these are:
  - Providing mobility options for users of all ages and ability levels, including motorists, transit riders, walkers, bicyclists, and other users;
  - Increasing safety by reducing crashes, particularly those associated with bicyclists and pedestrians;
  - Promoting environmentally-friendly and healthy travel choices such as walking, bicycling, and transit use;
  - Producing communities that are walkable, well-connected, and livable.

  Recommended Complete Streets actions are:

  - Consider all potential user groups and abilities during the planning, design, and implementation stages of all transportation projects. Such groups include motorists, transit-riders, pedestrians, bicyclists, and others as needed (e.g., horse-drawn vehicles).

Exhibit 5.3: Two-lane Suburban Roadway with Shoulder and Multi-use Path[6]



- Design facilities in concurrence with the USDOT policy statement *Accommodating Bicycle and Pedestrian Travel: A Recommended Approach.* Appropriate bicycle facilities may range from on-street bicycle lanes to the provision of wide curb lanes, depending on the roadway context. Support facilities such as parking devices, transport racks on buses, signal detectors for bicycles, bicycle-friendly drainage grates, signage, over- and under-crossings, and pavement striping play an important role in many cases. Where bicycle lanes are not provided, paved shoulders should be provided with a desirable width of five feet. Rumble strips, drainage grates with openings running parallel to the direction of travel, and railroad crossings at oblique angles create hazards for bicyclists and should be avoided.

- Support the Delaware Bicycle Facility Master Plan, which calls for the establishment of specific bicycle corridors and the development of bicycle design criteria that apply to these corridors through the creation of consistent projects. The plan suggests that the development of a statewide bicycle network may help to promote local bicycle facility improvements by putting them in the context of local, regional, and statewide bicycle mobility.

- Develop a regional bicycle plan for the Dover/Kent County MPO region to be completed by the end of fiscal year 2010.

- Develop and construct additional bicycle facilities and related improvements through the development process, as stand-alone projects, and through reconstruction or reconfiguration of existing roadways.

Appropriate pedestrian facilities will generally include sidewalks, pedestrian crossings (signalized or marked), curb ramps, and street lighting. In some cases, multi-use pathways may be appropriate. Pedestrian facilities should be designed to accommodate users of all abilities. Facilities should be consistent with and support the Delaware Statewide Pedestrian Action Plan.

[6] DelDOT, Department of Planning

Exhibit 5.4: Kent County Bicycle Map

A special requirement in Kent County is the need to accommodate horse-drawn vehicles, particularly along the SR 8 and 44 corridors west of Dover. Improvements such as widened shoulders are needed to ensure safe travel for these vehicles, while preserving capacity for other modes of travel.

5.2.4 Fundamental Strategy 4: Provide Additional System Capacity

Summary of Recommended Actions:

- Complete committed projects

  Exhibit 5.5 lists improvements that are programmed for funding and are included in the current 2009-2012 Transportation Improvement Program (TIP). However, only one of these projects—West Dover Connector—provides more capacity to the transportation network.

Exhibit 5.5: List of 2009-2012 TIP Projects

Map Reference	CTP Page No.	Project Name	System	Class
A	557	US 13 Sidewalks from South Court Street to Loockerman Street	Roadway	Arterial
B	559	US 13 Pedestrian Improvements, Townsend Boulevard	Roadway	Arterial
C	555	US 13 Sidewalks from Delaware State University to Smith Street	Roadway	Arterial
D	527	HSIP - Kent County	Roadway	Arterial
d1		SR 10 at WaWa/Gateway South and Sorghum Mill Road		
d2		US 13 at Division Street		
d3		US 13 at Carpenter Bridge Road		
E	533	Governor's Avenue, Webb's Lane to Water Street	Roadway	Arterial
F	539	SR 1, Little Heaven Grade-Separated Intersection	Roadway	Arterial
G	549	SR 10, Pine Cabin Road to US 113	Roadway	Arterial
H	545	SR 1, Frederica to Milford	Roadway	Arterial
I	565	Carter Road (K137), Sunnyside Road to Wheatley	Roadway	Collector
J	567	K134, Duck Creek Parkway, Sidewalk & Shoulder I	Roadway	Collector
K	563	Barratt's Chapel Road	Roadway	Collector
L	578	Harrington Truck Route	Roadway	Collector
1	553	US 13 Roosevelt Avenue, Pedestrian Crossing Improvement	Roadway	Arterial
2	547	SR 1, North Frederica Grade-Separated Intersection	Roadway	Arterial
3	537	SR 1 & 9 Grade-Separated Intersections at DAFB	Roadway	Arterial
4	543	SR 1, Bay Road/K19 Thompsonville Road, Intersection	Roadway	Arterial
5	551	SR 8, Forrest Avenue and K44, Pearson's Corner Ro	Roadway	Arterial
6	541	SR 1, South Frederica Grade-Separated Intersection	Roadway	Arterial
7	531	Smyrna Curbing - US 13	Roadway	Arterial
8	569	West Dover Connector	Roadway	Collector
9	576	Clarence Street Extension	Roadway	Local
10	580	Wyoming Mill Road Realignment	Roadway	Collector
11	574	Bombay Hook Road	Roadway	Local
12	583	BR 2-124D on K124 over Grecos Canal, NE of Milford	Roadway	Bridge
13	587	BR 2-254A on Mt. Olive Cemetery over Wildcat Bran	Roadway	Bridge
14	589	BR 2-227A on Fox Hunters Road, West of Harrington	Roadway	Bridge
15	585	BR 2-222A on Sandy Bend Road over Tappahanna Ditch	Roadway	Bridge
16	591	BR 2-296A on Layton Corners Road over Green Branch	Roadway	Bridge

Map Reference	CTP Page No.	Project Name	System	Class
17	597	Delaware AirPark - DRBA - Runway Extension	Support	Aeronautics
18	605	Dover Maintenance Building Lift Replacement	Transit	Facilities
	613	Preventive Maintenance - Kent County	Transit	Vehicles
	615	Transit Vehicle Expansion, Kent County	Transit	Vehicles
	617	30-foot Low Floor (4) Smyrna/Cheswold/Dover	Transit	Vehicles
	619	Paratransit Buses (1,1,2,2,3,2)	Transit	Vehicles
	621	Transit Vehicle Replacement and Refurbishment	Transit	Vehicles
	625	30-foot Low Floor (8) Replace MD 30-foot	Transit	Vehicles
	629	Paratransit Buses (0,5,15,20,14,9)	Transit	Vehicles
	205	5310 Program - Kent County	Transit	Vehicles
	627	Support Vehicles (1,4,0,0,0,0) - Kent County	Transit	Vehicles
	611	Farebox Replacement - Kent County	Transit	Vehicles
19	603	Dover Facility – Interior Repair	Transit	Facilities
20	607	Dover Transit Center	Transit	Facilities

Note: HSIP = Highway Safety Improvement Program

- Continue with new studies and projects from which future TIPs can be established New projects and studies are essential for a transportation system to support anticipated development within the county.

Exhibit 5.6: List of Recommended Projects and Studies

Dover-Kent County MPO RTP Recommended Projects			
Score	**Project**	**Year of Completion**	**Road Classification**
	Highway		
37.0	**DE 8**: Construct recommendations from the DE 8 Concept and Operations Study	**2030**	Minor Arterial
37.0	- D8: Intersection Improvements: Left turn phasing at 4 intersections	**2030**	Minor Arterial
37.0	- D8: Intersection Improvements: Access to the new High School site (Carey Farm), Calvary Church site	**2030**	Minor Arterial
37.0	- D8: Intersection Improvements: Mifflin Road right turn and realignment of Brandywine Apts entrance	**2030**	Minor Arterial
37.0	- D8: N/S Connector Road: Chestnut Hill Road to Rt 8	**2030**	Major Collector
37.0	- D8: N/S Connector Road: Rt 8 to Hazletville Rd	**2030**	Major Collector
37.0	- D8: N/S Connector Road: Connection above road to Artis Drive	**2030**	Major Collector
37.0	- D8: Install Bicycle and pedestrian improvements including bike lanes, designated, controlled crossings with ped signals and an alternative shared use path	**2030**	Minor Arterial
37.0	- D8: Connector Road behind Greentree Shopping Center between Independence Blvd and Kenton Road	**2030**	Local
37.0	- D8: Interconnections to enhance Rt 8 Corridor Capacity Independence south of Rt 8 to Mifflin Road, Dove View to Modern Maturity, Heatherfields/Fox Hall West & Cranberry Run,	**2030**	Local
37.0	- D8: Connector Road south of Gateway West to Commerce Way	**2030**	Local
37.0	**NDS**: Implement the recommendations of the Concept Plan for US	**2030**	Minor Arterial

Dover-Kent County MPO RTP Recommended Projects			
Score	**Project**	**Year of Completion**	**Road Classification**
	13 and 113 in Dover		
37.0	- NDS: Construct a collector road between the Scarborogh Rd. and US 13 to the East of Dover Mall and Dover Downs, to Leipsic Road (NDS is North Dover Study)	**2030**	Major Collector
37.0	- NDS: Construct a collector between above and US 13 adjacent to Best Buy	**2030**	Major Collector
37.0	- NDS: Realign Exit 104 toll plaza and access roads to accommodate above	**2030**	Other Freeway
37.0	- NDS: Realign Leipsic Road and connect to US 13 at Jefferic Blvd. and to the Barry Van Lines site	**2030**	Major Collector
37.0	- NDS: Construct Crawford Carroll Rd extension from behind Lowes to College Rd east of DSU	**2030**	Major Collector
37.0	- NDS: Construct a local road between above and US 13 across from a realigned Dover Mall North entrance	**2030**	Major Collector
34.7	Upgrade Kenton Road from DE 8 to Chestnut Grove Road in Dover with shoulders, sidewalks, bike and transit facilities and closed drainage	**2030**	Minor Arterial
33.2	Intersection Improvements to South State Street at SR 10 (Lebanon Road)	**2020**	Minor Arterial
33.2	Intersection Improvements to South State Street: Sorghum Mill Rd. to SR 10 (Lebanon Road)	**2020**	Minor Arterial
33.2	South State St. Intersection Improvements various intersections (8 total) between US 13 and SR 1	**2020**	Minor Arterial
32.4	Upgrade West Street from New Burton Road (Queen Street) to North Street in Dover to include adequate travel lanes, shoulders, curbs, drainage, and bicycle and pedestrian improvements	**2020**	Major Collector
32.4	Construct pedestrian improvements on US 13 from Duck Creek to the north Smyrna SR 1 interchange	**2030**	Major Collector
30.8	Upgrade Front Street corridor from Rehoboth Blvd to SR 1, Milford to include adequate travel lanes, shoulders, curbs, drainage, bicycle and pedestrian improvements and intersection improvements	**2030**	Major Collector
30.8	Construct /fill gaps in pedestrian improvements on US 13 in Smyrna	**2030**	Minor Arterial
30.7	Upgrade corridor of DE 14 from DE 15 to Church Street and from Washington Street to SR 1 with adequate lane width, shoulders, sidewalks and transit facilities	**2030**	Minor Arterial
30.7	Complete upgrade of DE 300 from railroad tracks to US 13 to include sidewalks, bicycle and transit facilities and intersection improvements at Carter Rd/DE 6 area	**2030**	Major Collector
30.7	Upgrade Irish Hill Road from SR 1 to US 13 to include adequate travel lanes, shoulders, and bicycle and pedestrian improvements	**2030**	Major Collector
30.7	Upgrade College Road from Salisbury to Kenton Road to include turn lanes where needed, shoulders, sidewalks or multi-use path, curbing and closed drainage	**2030**	Minor Arterial
29.1	Construct a connector road from White Oak Road to DE 8	**2015**	Major Collector
29.1	Upgrade Sunnyside Road from DE 300 to US 13 in Smyrna to include adequate travel lanes, shoulders, curbs, drainage, and bicycle and pedestrian improvements	**>2030**	Major Collector
29.1	Construct/fill gaps in pedestrian facilities on US 113 between Court Street and Lafferty Lane	**>2030**	Minor Arterial
28.5	Upgrade N. Main Street in Smyrna to include adequate travel lanes, shoulders, curbs, drainage, and bicycle and pedestrian improvements	**>2030**	Major Collector
28.5	Upgrade Joe Goldsborough Road from Duck Creek Road to US 13 to include adequate travel lanes, shoulders and bicycle and pedestrian facilities	**>2030**	Major Collector
28.5	Upgrade Paddock Road from US 13 to SR 1 to include adequate travel	**>2030**	Major Collector

Dover-Kent County MPO RTP Recommended Projects			
Score	**Project**	**Year of Completion**	**Road Classification**
	lanes, shoulders and bicycle and pedestrian facilities		
27.15	Construct a grade separated intersection at SR 1 and NE Front St. (DE 14) in Milford	**2020**	Primary Arterial
27.3	Upgrade Messina Hill Road to improve safety and include adequate travel lanes, shoulders and bicycle and pedestrian facilities	**>2030**	Major Collector
	Transit		
	Expand fixed-route bus service	**2010**	
	Expand paratransit service	**2020**	
	Create/operate the Smyrna Shuttle	**2020**	
	Delaware Air Park - DRBA - Runway Extension	**2020**	
	Implement recommendations of Civil Air Terminals Studies	**2020**	
	Construct the Dover Transit Center at Water and West Streets	**2020**	
	Planning Studies		
34.8	Develop a commercial corridor/modified corridor preservation concept for US 13 in Camden	**2010**	
34.8	Develop commercial corridor concepts for US 113 in Milford, and DE 10 from US 113 to US 13	**2010**	
33.1	Study the need to upgrade DE 14 west of DE 15	**2010**	
32.5	Develop a Main Street concept plan for DE 42 in Cheswold	**2020**	
30.8	Reassess feasibility study of implementing passenger rail service between Dover and Wilmington	**2020**	
29.1	Study the need to upgrade DE 15 west of Wyoming in future annexation areas	**2020**	
29.1	Study US 13 Alt. south of South Street in Camden to determine how to improve safety and traffic flow	**2020**	
28.5	Study the need to bring Denneys Road in Dover to urban standards	**2020**	
26.8	Study the need to upgrade Church Hill Road north of Milford between DE 14 and Road 119	**2020**	
25	Monitor conditions on DE 8 between Forest Street and US 13 to determine the need for additional corridor and intersection improvements	**2020**	
25	Study the transportation system south of Smyrna to determine required future transportation improvements	**2020**	
25	Study where/how to make a new connection(s) between SR-1 and DE-12 outside of Frederica	**2020**	
25	Develop an access management program to preserve capacity on key roadways serving regional travel needs such as DE 15, DE 12, DE 14	**2020**	
24.5	Conduct walkable community workshops in the region's municipalities as a means to creating local bicycle and pedestrian plans and accomplishing ADA compliance	**2020**	
23.3	Study ways to reduce congestion on SR 1 north of Dover	**2020**	
22.8	Study access to employment and commercial areas of Milford	**2020**	
22.7	Expand the Corridor Capacity Preservation Program to include DE 10	**2020**	
21.1	Conduct site studies to determine the best locations for intermodal freight transfer facilities	**2020**	
19.4	Study how pinchpoints on DE 15 west of Smyrna and Clayton can be improved to constitute a westerly bypass of those towns	**2020**	
16.7	Study creating a truck route outside of/around the Milford historic district	**2020**	

5.2.5 Fundamental Strategy 5: Focus Transportation Investments

Summary of Recommended Actions:

- Transportation Improvement Districts (TIDs)

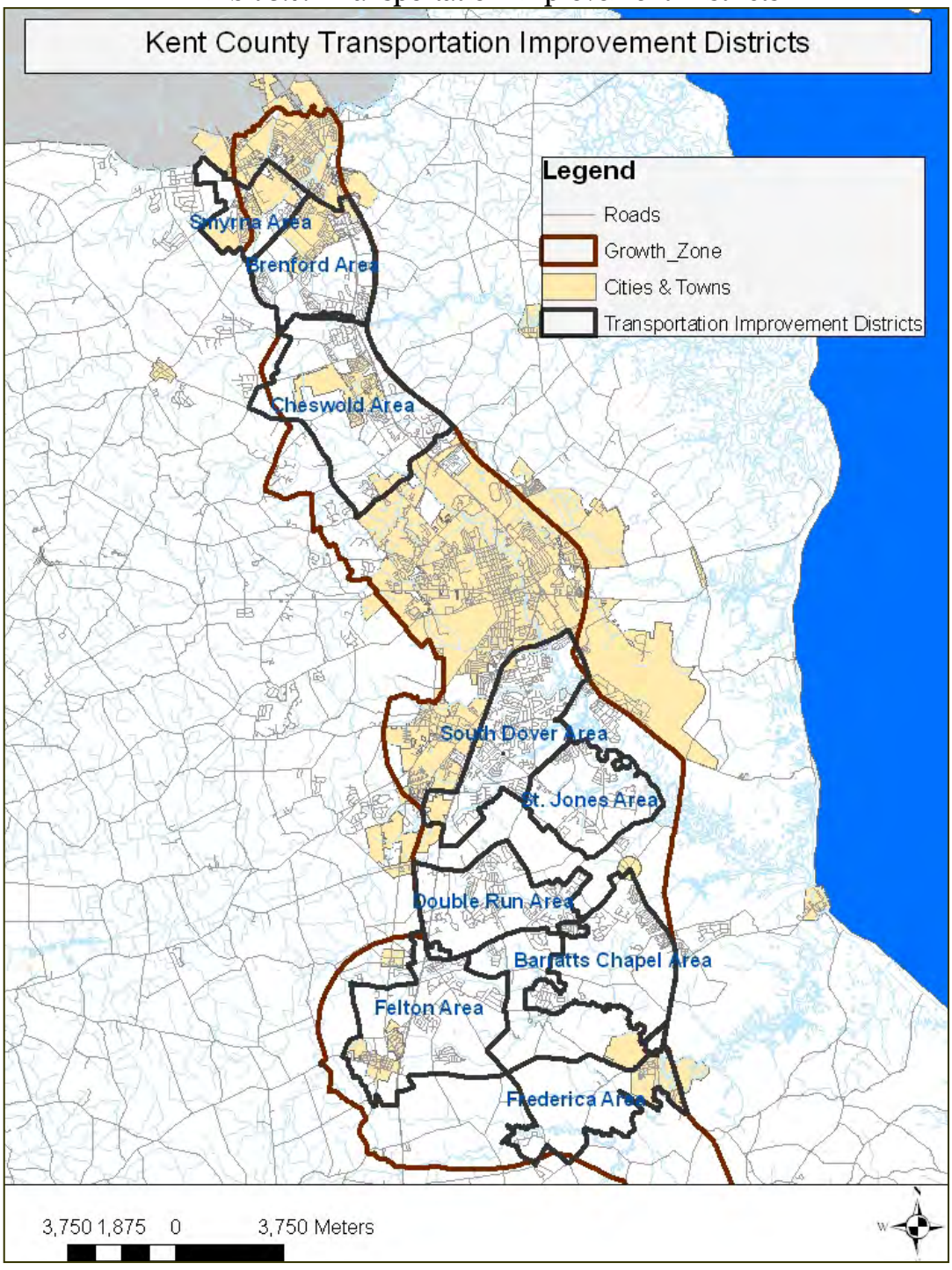
  Currently, developers bear the responsibility for completing road improvements associated with their developments. Those improvements are generally identified through the traffic impact study process for larger projects. Unfortunately, smaller projects and projects in early stages have not necessarily triggered the required improvements through this process, resulting in an inequitable distribution of responsibility.

  TIDs are areas where—rather than relying upon individual traffic impact studies—the county, the MPO, DelDOT, and the community will develop a more complete plan addressing a larger area for transportation improvements including road upgrades, interconnection of local roads, and bicycle, transit and pedestrian facilities. These areas support the nodal concept of the land development in that the intent is to develop a transportation network on which residents can rely upon interconnected local roads for everyday needs, whether they be work, school, or recreation. By their design, these districts are supportive of pedestrian, bicycle and transit access in addition to automobiles because areas for transit-ready development and walkable communities are identified ahead of time. The pattern of future development can support multiple modes without every parcel in the growth area being developed to the highest allowable density.

  Forming such districts changes the subdivision and land development approval process in these areas in that the transportation infrastructure is identified ahead of the land use application. The existing standard of requiring traffic impact studies for individual developments should be replaced by the TID master plan, although the responsibility for funding the required improvements would remain with project developers, based upon the traffic their project creates. Proposed TIDs are shown in **Exhibit 5.7**.[7] Public Facilities Ordinances may be a potential funding source for TIDs.

[7] Kent County Comprehensive Plan Adopted 10/7/2008

Exhibit 5.7: Transportation Improvement Districts

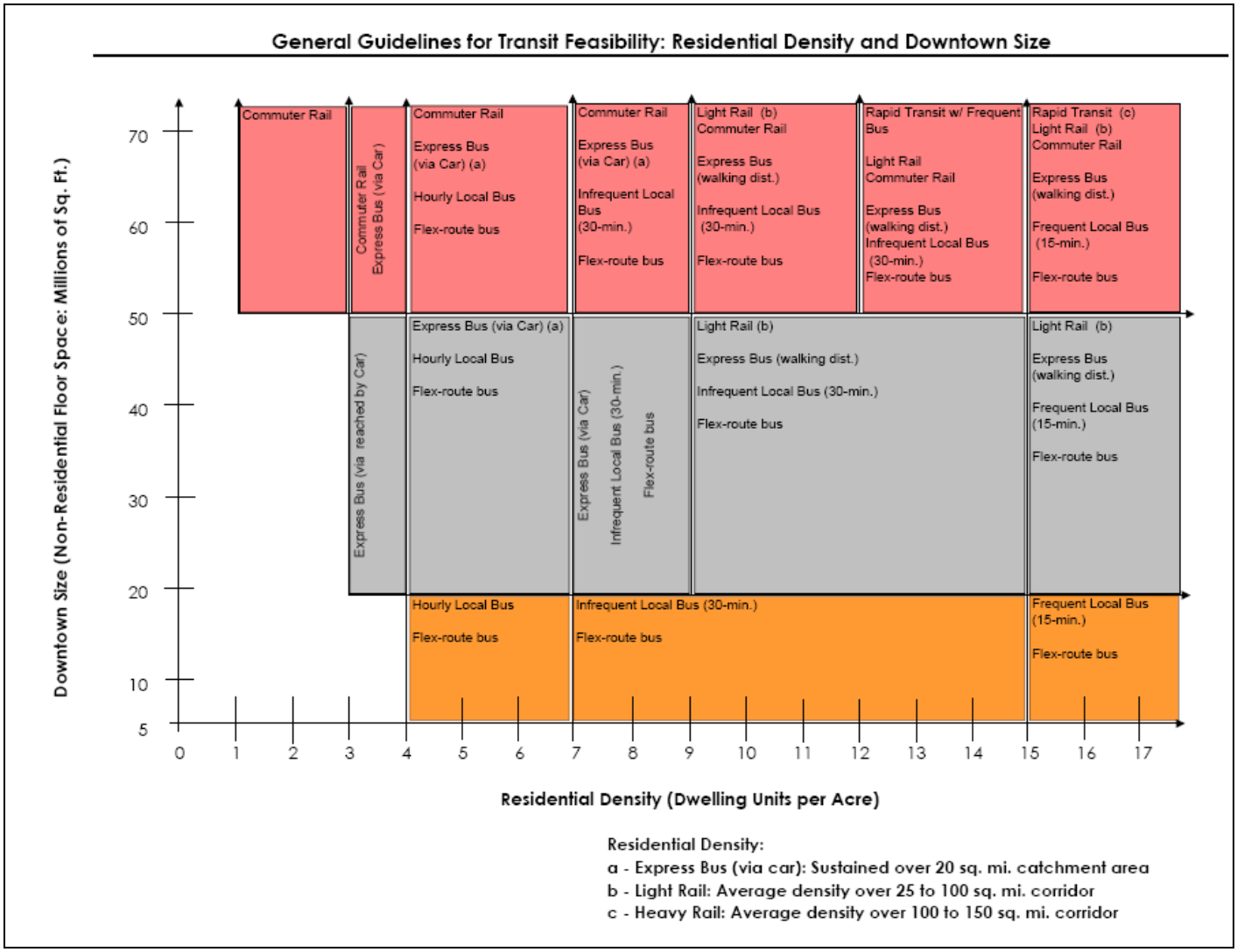


- Make investments and decisions according to current and planned intensity of land use and presence of infrastructure
  The framework for the strategies and actions is an investment strategy that focuses investments according to the intensity of land use anticipated in a given area and the presence of existing infrastructure. The locations of recommended improvements are located predominantly in existing communities or developing areas, which is consistent with state and county policies.

- Coordinate land use and transportation projects for sustainability to promote established long-range land use and transportation goals
  Coordinate land use and transportation projects in a manner that promotes long-term transportation efficiency; promotes sustainability within designated areas; directs programs, services, and facilities to support the Livable Delaware Agenda; and addresses the six core principles of the plan which include development, travel opportunities and choices, cost effectiveness, quality of life, economic development and growth, and planning and coordination.

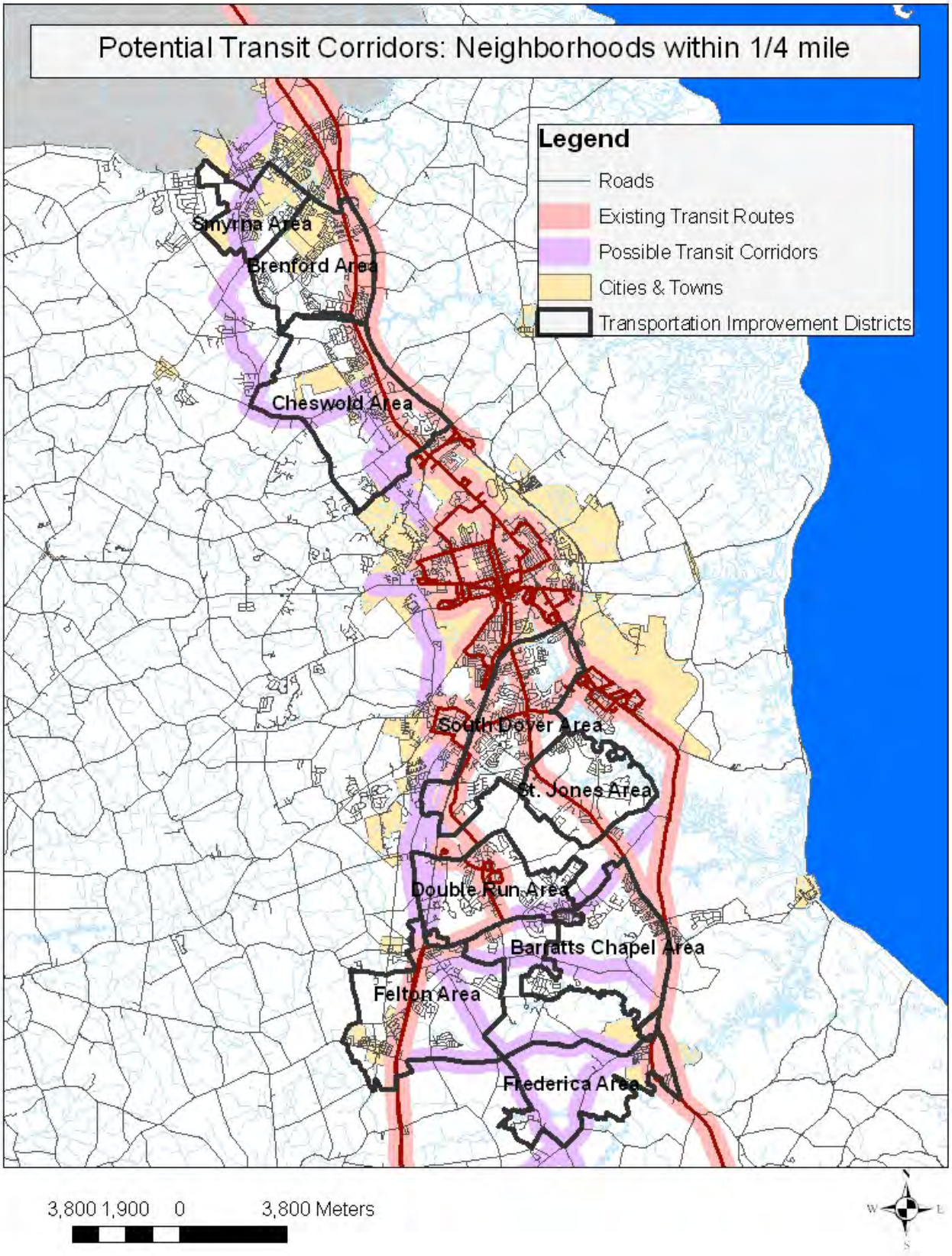
- Identify future transit corridors to focus development in areas that may be efficiently served by transit
  Efficient operation of transit services operating at half hour intervals requires a minimum of seven residential units per acre or 20 million square feet of non-residential floor space. A table showing the intensity of land uses needed to support a variety of transit services is shown in **Exhibit 5.8**. Identification of potential transit corridors in the region can help increase the efficiency and expansion of future transit services by focusing growth into transit-ready communities. In growth areas (such as Strategies for State Policies and Spending Level 1 areas), Kent County can encourage a mix of residential and nonresidential development at higher densities along these corridors to provide access to greater numbers of potential mass transit users. The existing and potential transit corridors are portrayed in **Exhibit 5.9**. This Transit-Ready Development (TRD) provides more transportation and housing choices and creates a sense of community and place.

Exhibit 5.8: Guidelines for Transit Feasibility



Source: DART First State

Exhibit 5.9: Potential Transit Corridors



5.3 Project Prioritization

Projects being considered for inclusion in the RTP were prioritized using a numerical scoring system to reflect qualitative ratings based on transportation system data. This process is similar to what is used for TIP project scoring.

Exhibit 5.10 shows the weights assigned to each goal. Every project was reviewed to see whether it satisfies each one of the goals below. If the project satisfied a goal, a given weight was assigned to the project shown in column "Weight." The total score was then summed up to arrive at the "score" for each project. In the phasing analysis, these scores were considered to determine the order for phasing the projects. The recommended list of projects for which funding has not been committed is sorted in score order and it is anticipated that the projects will be funded in that order

Exhibit 5.10: Scoring Matrix

	Weight
Goal 1: Strengthen the local economy	**17**
Support business retention and creation of high quality employment by investing in transportation improvements?	5
Provide businesses with adequate access to labor by encouraging affordable, multimodal transportation options?	4
Reduce the expense and time delays of shipping and receiving freight by enhancing access to retail and industrial areas and improving the interconnectivity of all modes of the transportation network?	4
Ensure community cohesion by appropriately connecting developed areas with target growth areas for new development?	4
Goal 2: Improve quality of life	**15**
Protect, preserve, and enhance natural, historic, and cultural resources?	3
Support healthy lifestyles, choices, and opportunities?	3
Promote context sensitivity?	3
Provide aesthetic value?	3
Reduce air, water, and noise pollution?	3
Goal 3: Support desired land use and effective growth management	**22**
Support desired land use patterns?	5.5
Integrate land use with transportation?	5.5
Foster growth and development in desired areas?	5
Provide transportation alternatives?	6
Goal 4: Improve access and mobility while ensuring the safety of all citizens	**22.5**
Improve mobility?	4.5
Provide an integrated transportation system, enhancing accessibility and mobility for all?	5
Provide access to transportation services for people with special needs?	4
Improve accessibility, mobility, and safety?	4
Enhance security?	5
Goal 5: Safely and efficiently transport people and goods	**23.5**
Preserve and expand the existing transportation infrastructure?	3.5
Promote the use of technology to enhance the transportation system?	3.5
Ensure adequate transportation facilities?	4
Establish aesthetically pleasing and cost effective transportation facilities?	3.5
Improve efficiency and safety of the existing system?	5
Direct or focus transportation investments?	4

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6. Paying for the Transportation Plan

A plan without a strategy to pay for it is really nothing more than a wish list of projects. Fiscal constraint, proposing only projects that could realistically come to fruition given expected revenue levels, has become an important practice in creating reasonably buildable transportation plans. The practice is now required of Metropolitan Planning Organizations (MPOs) with the passage of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) legislation. The Dover/Kent County MPO Regional Transportation Plan update has been designed to meet the needs of the region within conservative budget estimates. This means that the plan has been developed by using conservative funding estimates—what is expected to be "reasonably available"—as well as realistic estimates in terms of project costs at the time the project is undertaken.

The requirement for estimated of funding being reasonably available is not aimed at having planning organizations create detailed long-range budgets to accompany their long-range plans. Such budgets are done in a different part of the planning process—the Transportation Improvement Program (TIP) and for a shorter time horizon. The TIP document is prepared annually, covers a four-year period, and is a financially-constrained document. Under SAFETEA-LU, the Regional Transportation Plan must also be financially constrained. However, since it includes projects 25 years in the future, the projected availability and amount of funding is less precise.

6.1 Availability of Funding

Future funding is highly unpredictable and difficult to estimate. Funding depends on the decisions of the federal, state, and local government; the general state of the economy; and many other issues. For example, as gasoline prices increase influencing a decrease in vehicular travel, the potential for error in estimating gasoline tax revenue becomes greater. That said, however, past funding trends are still the best indicators for projecting future funding levels.

The first step in estimating the amount of funding available was to analyze the historical levels of statewide total authorizations for DelDOT between the years of FY 2003 and FY 2009. The actual annual authorizations are translated into 2008 dollars using an assumed inflation index of 3.5 percent in available funding. **Exhibit 6.1** presents statewide total authorizations in year-specific dollars and authorizations converted to 2008 dollars.

Exhibit 6.1: Statewide Total Authorizations (in thousands of dollars)

	Average Annual Authorizations	2003	2004	2005	2006	2007	2008	2009
Total Annual Authorizations		$340,805	$420,556	$443,807	$485,100	$448,868	$620,912	$620,912
Authorizations (2008 dollars) Adjusted for Inflation	**$512,813**	**$395,086**	**$473,339**	**$484,960**	**$499,653**	**$476,204**	**$639,539**	**$620,912**

Source: 2003, 2004, 2005, 2006, 2007, 2008, Dover-Kent MPO Transportation Improvement Program ; 2009 DelDOT Capital Transportation Program

This means it can be expected, on average, that annual authorizations for the state will be approximately $510 million.

The second step is to compile historical levels of funding received by the Dover/Kent MPO through the Capital Transportation Program (CTP) to arrive at the ratio of total authorizations allocated to Dover/Kent projects. The CTP is a six-year program of transportation investments that is updated yearly and presented for approval and funding by the Delaware General Assembly.[1]

Currently, DelDOT submits a proposed annual update to Delaware's six-year Capital Transportation Program to the Governor's Council on Transportation (COT). The COT reviews proposed projects, works with the MPOs to prioritize new projects, holds public meetings and hearings, and submits the CTP to the governor and budget office by March of each year. Expenditure of CTP funds is authorized when the General Assembly passes the "Bond Bill" in June.

DelDOT coordinates closely with the MPOs to ensure that their long-range plans complement DelDOT's long-range plans, and that MPO transportation improvement plans align with the first three years of Delaware's Capital Transportation Program. **Exhibit 6.2** provides CTP authorizations for the entire state in fiscal years (FY) 2006 through 2008. Exhibit 6.3 graphically represents the sources of past funds.

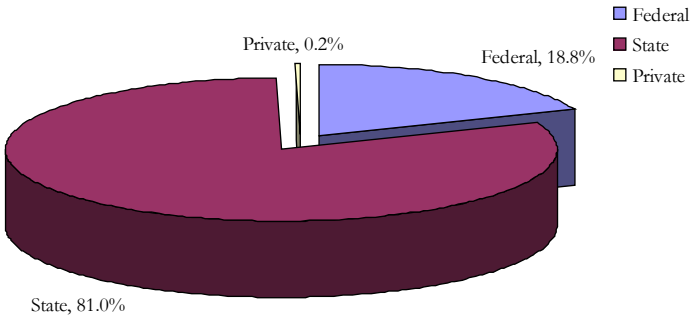
Exhibit 6.2: FY 2006-2008 Capital Transportation Program Summary of Authorizations (in thousands of dollars)[2]

	FY 2006	FY 2007	FY 2008	FY 2009-2011	FY 2006-2011
I. Road Systems					
Municipal Funding Private Funding	$1,000	$0	$0	$0	$1,000
FHWA Apportionment Funding	$79,500	$32,600	$21,360	$64,080	$197,540
Transportation Trust Fund	$345,000	$81,300	$52,090	$156,270	$634,660
Total Road Systems	***$425,500***	***$113,900***	***$73,450***	***$220,350***	***$833,200***
II. Grants and Allocations					
Transportation Trust Fund	$21,600	$21,600	$21,600	$64,800	$129,600
Total Grants and Allocations	***$21,600***	***$21,600***	***$21,600***	***$64,800***	***$129,600***
III. Transit System County Funding					
FTA Apportionment Funding	$400	$1,200	$1,200	$3,600	$6,400
Transportation Trust Fund	$400	$2,400	$2,400	$7,200	$12,400
Total Transit	***$800***	***$3,600***	***$3,600***	***$10,800***	***$18,800***
IV. Support Systems					
FHWA Apportionment Funding	$4,600	$4,600	$4,600	$13,800	$27,600
FTA Apportionment Funding	$3,600	$5,100	$1,100	$3,300	$13,100
Federal Aviation Administration Funding	$2,900	$0	$0	$0	$2,900
Transportation Trust Fund	$26,100	$30,700	$25,700	$77,100	$159,600
Total Support Systems	***$37,200***	***$40,400***	***$31,400***	***$94,200***	***$203,200***
Total Capital Transportation Program					
Private Funding	$1,000	$0	$0	$0	$1,000
FHWA Apportionment Funding	$84,100	$37,200	$25,960	$77,880	$225,140
FTA Apportionment Funding	$4,000	$6,300	$2,300	$6,900	$19,500
Federal Aviation Administration Funding	$2,900	$0	$0	$0	$2,900

[1] 2007 Delaware Transportation Fact Book
[2] Dover/Kent MPO TIP FY 2006-2009

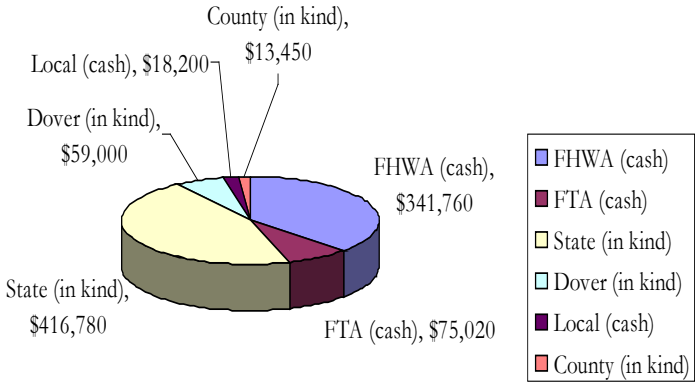
Transportation Trust Fund	$393,100	$136,000	$101,790	$305,370	$936,260
Total Capital Transportation Program	***$485,100***	***$179,500***	***$130,050***	***$390,150***	***$1,184,800***

Exhibit 6.3: FY 2006 Statewide Capital Transportation Program Authorizations[3]



In addition to the program/project-specific funding outlined above in the CTP, the Dover/Kent County MPO also receives funding for transportation and regional planning from a variety of sources, including federal, state, and local governments. The funding designated for planning is outlined in **Exhibit 6.4**.

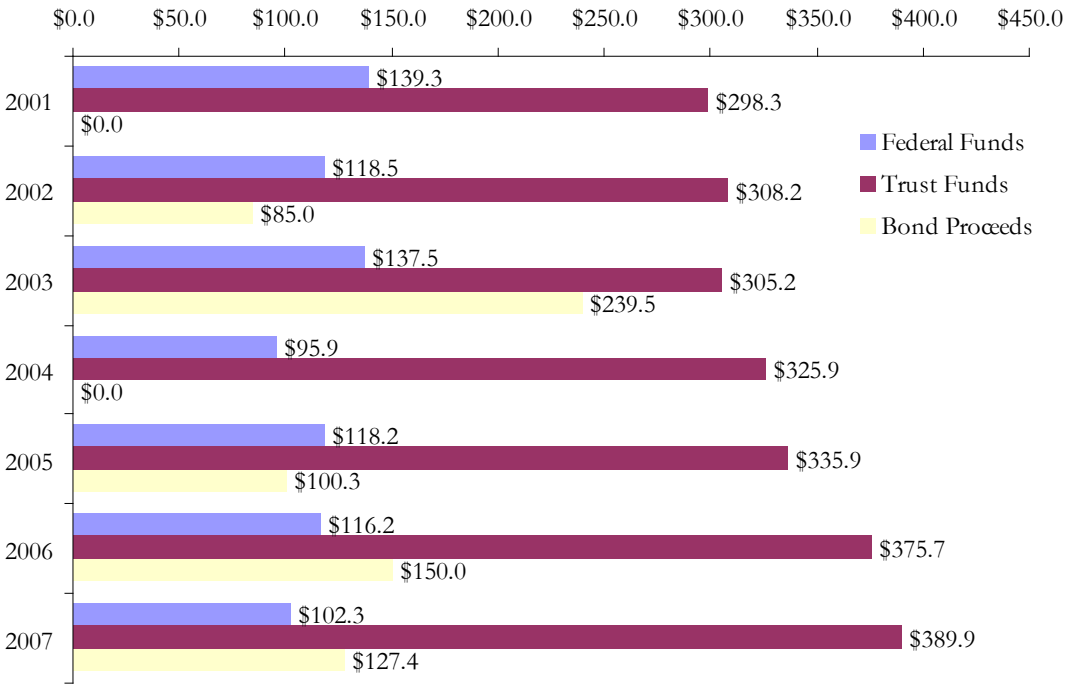
Exhibit 6.4: Dover/Kent MPO Planning Funding[4]



As previously demonstrated, funding for the entire state has varied year to year. Federal funding, however, has remained fairly constant and may be predicted with more accuracy. It has been the state and bond-based funding that has varied as noted in **Exhibit 6.5**.

[3] Dover/Kent MPO TIP FY 2006-2009
[4] Dover/Kent MPO UPWP 2007

Exhibit 6.5: Major Sources of Transportation Revenue in Delaware (in millions of dollars) FY 2001-2007[5]



Funding allocated to the MPOs through the CTP is project-specific. Funding is usually allocated for MPO-specific projects and for statewide projects in the MPO area, which include items such as Rail Preservation, Recreation Trails, Bridge Management, Paving and Rehabilitation, Rail Crossing Safety, Traffic Calming, Transportation Management Improvements, Job Access Reverse Commute Funding, and many others.

Similar to the calculation of the statewide authorizations, funding for MPO-specific and statewide projects was reviewed between 2003 and 2009. Actual year-specific amounts were inflated to 2008 dollars using published inflation rates to make the values consistent across years. **Exhibit 6.6** shows the allocation of the statewide total authorizations to the Dover/Kent County MPO.

Exhibit 6.6: MPO-Specific Funding (in thousands of dollars)

	Average Annual Funding	2003	2004	2005	2006	2007	2008	2009
Dover-Kent County MPO Projects*		$25,845	$10,988	$21,160	$766	$2,266	$166	$60,143
D-K MPO Projects Adjusted for Inflation (2008 dollars)	**$18,423**	**$29,961**	**$12,367**	**$23,122**	**$789**	**$2,404**	**$171**	**$60,143**
Statewide Projects*		$152,940	$162,839	$157,255	$218,033	$242,546	$239,490	$216,808
Statewide Projects Adjusted for Inflation (2008 dollars)		$177,299	$183,277	$171,837	$224,574	$257,317	$246,675	$216,808
Percent of Statewide Funding Allocated to D-K		15%	15%	15%	15%	15%	15%	15%
Statewide Funding Allocated to D-K MPO	**$31,667**	**$26,595**	**$27,492**	**$25,776**	**$33,686**	**$38,598**	**$37,001**	**$32,521**
Total Funding for D-K MPO	**$50,090**	**$56,556**	**$39,859**	**$48,898**	**$34,475**	**$41,002**	**$37,172**	**$92,664**

Source: Transportation Improvement Program

[5] Delaware Transportation Facts 2006

The Dover/Kent County MPO received an estimated 15 percent[6] of the statewide funding for the state in the past five years.

Under Federal Highway Administration (FHWA) guidance on fiscal constraint for metropolitan plans, this plan uses historical dollar allocations to the MPO, translating these into "forecast year" dollars to prepare cost projections for funding and construction costs. Based on guidance from the FHWA Office of Planning, this plan does not increase funding levels through 2012, and from 2012 through 2030, assuming a conservative 3.5 percent funding increase. An assumed 5 percent annual inflation rate for construction costs for 2008 and beyond was used for both highway and transit improvements. This is consistent with last 15 years escalation, using the construction cost and the inflation indexes.

Based on this analysis, $50.1 million is expected to be available annually to the MPO for both its portion of the statewide projects and the MPO-specific projects. Of this amount, $18.4 million will be available for MPO-specific projects and $31.7 million will be available for MPO's share of statewide projects. Also, MPO-specific projects are further subdivided among roadway, transit, and other projects based upon historic commitments. The division of funding for these categories is done using the historical allocation in the ratio of:

- Roadway: 92 percent
- Transit: 5 percent
- Other: 3 percent

The ultimate analysis further assumes there will be other source of funding. For any project where part of the cost will come from sources other than those described above, such as private funding, from the Federal Aviation Administration, or any other sources, only the costs that will be paid for with state or federal funds are estimated.

6.1.1 Federal Funding Sources

Delaware is a unique state in that DelDOT is responsible for maintaining nearly 90 percent of the roadways. Approximately 25 to 30 percent of Delaware's roads are eligible for federal funding for rehabilitation and restoration projects. Therefore, the majority of funding for road rehabilitation is the responsibility of the state.

SAFETEA-LU legislation authorized continued federal aid for transportation in all states for projects, as long as certain requirements are abided. The FHWA funds authorized in SAFETEA-LU support capital transportation improvements. State funds are necessary to match the federal funds at a rate of 20 to 50 percent, depending upon the specific program.

Currently, there are several federally-funded programs being utilized to fund projects. These include the Highway Safety Improvement Program, National Highway System, Interstate, Surface Transportation Program, Transportation Enhancements Program, Congestion Mitigation and Air Quality Improvement Program, Bridge Replacement and Rehabilitation, and the State Planning and Research Program.

[6] Based on review of 2003-2009 CTPs

6.1.2 State Funding Sources

The Transportation Trust Fund (TFF) is the main source of income covering the cost of transportation infrastructure paid for by the state. At least half of the capital program must come from annual revenue, most of which is generated from tolls, concessions, motor fuel tax, Department of Motor Vehicles (DMV) fees, and interest income. Bonds sold against the revenue stream account for the remaining portion of the fund.[7] DelDOT's resources are available to pay for operations, debt service, and capital improvements. Funding for infrastructure is listed in the Capital Transportation Program. The non-pledged revenue sources include tolls, violations and fines, escheat (transferring of property to the state in the absence of legal heirs), transit, Port of Wilmington refinancing, and other dedicated transportation sources.

The 2004 *Strategies for State Policies and Spending* identifies levels of transportation investment areas. This is a guideline for the type of investments, including transportation investments, may be made at each of these levels and where they could be located.

6.1.3 Local Funding Sources

One local source of transportation-related funding is the Kent County Levy Court Capital Projects Fund. These capital projects are funded each fiscal year as a means of enhancing the quality of life in Kent County. For FY 2007, the main areas of improvement included enhancing recreational parkland, adding a regional library, and economic development efforts.[8] These funds may enhance the transportation system by providing funding for projects, such as the St. Jones River Greenway Development, which increases the pedestrian and bicycle facilities available in Kent County.

Another important potential funding option comes from the Adequate Public Facilities Ordinances (AFPO) adopted by Kent County Levy Court. The four different facilities areas include Central Water Services, Emergency Medical Services, Roads, and Schools. These were enacted to ensure that before new development is put in place, there are adequate public facilities available to serve the residents. New development needs to meet the minimum level of service established for the different facilities. If the level of service is not being met, the developer will have to provide the necessary improvements and/or contributions to mitigate the reduction of the public facility service capacity caused by the proposed development. The developer has the ability to alter the plans, if possible, in a way that the level of service can be maintained.[9] With the extensive growth occurring in Kent County this legislation helps ensure development decisions are made more effectively. Transportation impacts mat be assessed more efficiently, with developers knowing which projects will require Traffic Impact Studies for new subdivisions or site plans.

Areas identified by the county as Transportation Improvement Districts, as described in Chapter 4, or Sub-area Plans will help DelDOT determine which projects will be funded or undertaken.

[7] Delaware Transportation Facts 2006
[8] Kent County Levy Court Adopted Operation Budget FY 2008
[9] Kent County Code, Vol. 11, Chapter 187, Subdivision and Land Development, Article XVII, Supplementary Regulations $ 187-90.2 Adequate Public Facilities

6.1.4 Private Funding Sources

Private funds may be available for specific transportation projects. These funds usually are associated with one or more development projects. In some cases, a private developer may directly make or pay for transportation improvements in order to mitigate the transportation impacts of their developments. In others, they may choose to make the improvements before other development of a site. Because the availability of these funds is driven by market forces, it is impossible to predict the amount of funding that would be reasonably available from these sources during the life of the RTP.

6.2 Cost of the Proposed Transportation Improvements

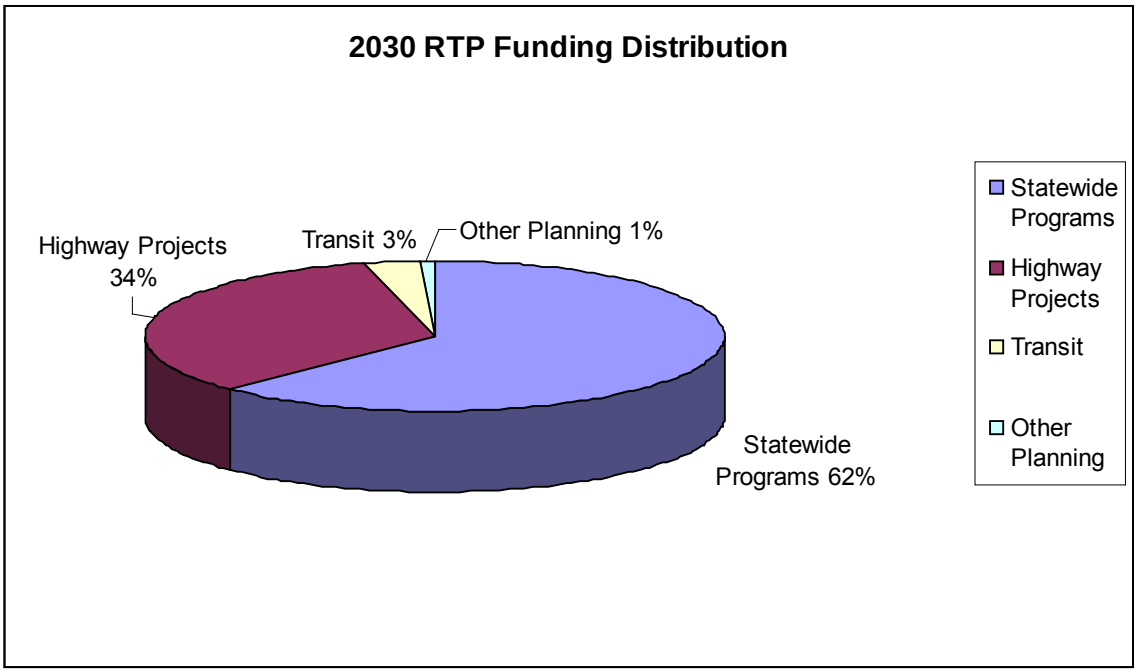
Estimating the level of funding that will be reasonably available is only half of the equation. The cost of projects to be completed during the lifetime of the plan is the other part of the budgeting process. For the statewide projects, estimates from prior years were used to arrive at the annual costs of projects. For the MPO-specific projects, costs were estimated using amounts available from the related project studies, per-mile unit costs, and other projected information. Given that the current CTP extends to 2014, cost estimates from the document were used for those projects.

Projects included in this RTP are phased according to the level of funding expected to be available in ten-year intervals. The initial phase begins upon the plan's completion and goes through 2010, the second phase begins in 2010 and go through 2020, and the third phase begins in 2020 and goes through 2030. In addition to these three phases, there is a number of projects for which funding will not be available until after 2030. These projects may have scored lower than those included in earlier phases due to cost and/or their relevance to the RTP's goals and objectives. Those projects are included on an "aspirations list" to be addressed if additional funding is made available before 2030. They also form the basis for future updates of the RTP. In terms of studies and other planning efforts, it is assumed that the MPO would lead a maximum of five each year to be nominated by member agencies.

6.3 Funding Cost Comparison

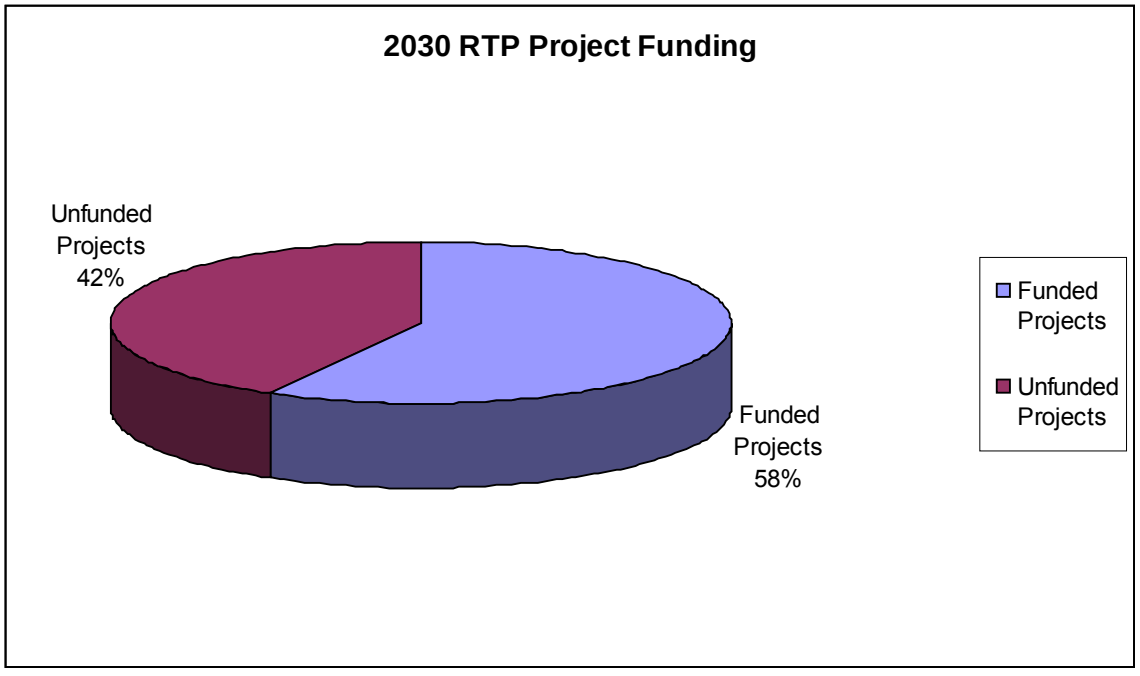
Based on all of the preceding, the MPO estimates a total of $1.7 billion will be available for transportation and transit uses in Kent County over the term of the RTP. The estimated funding available is distributed as follows: $1.05 billion in the Kent County portion of Statewide programs, $567 million for Highway projects funding, $49 million for the Kent County portion of Transit funds, and $16 million for Other Planning, as represented in Exhibit 6.7.

Exhibit 6.7: RTP Period Distribution of Projected Funds



The Highway projects are most influenced by the MPO Council, Committees, participating communities and interested residents. The estimate of the amount of available funds for the period of the Plan is $567 million. Through development of the Plan, the combined estimated amount to complete the reasonable, vetted list of needed projects exceeds $978 million attached as Appendix X. The difference between the estimated available funding and the expressed need is over $411 million.

Exhibit 6.8: RTP Period Projects



7. Conformity Analysis

7.1 Overview

The Dover/Kent County MPO is a federally-designated Metropolitan Planning Organization. As such, the organization is required through federal regulations to show that the Regional Transportation Plan conforms to the requirements of the 1990 Clean Air Act Amendments (CAAA). These air quality standards, called emissions budgets, set standards that the MPO must abide by for specific milestone years. Emissions contribute to air pollution. If the emissions generated from the projects in the transportation plan are equal to or less than these emissions budgets, then the transportation plan conforms to the State Implementation Plan (SIP).

In an attempt to reduce emissions nationwide, the CAAA developed a rating system for metropolitan area non-compliance with federal air quality standards, with levels of non-compliance ranging from "marginal" to "extreme." The Dover/Kent County MPO region, as part of the Philadelphia-Wilmington-Trenton non-attainment area, was classified as severe. The CAAA of 1990 required severe non-attainment areas, or areas that did not meet national air quality standards, to develop a plan to show how they would achieve the National Ambient Air Quality Standard (NAAQS) for ozone by 2005. A rate-of-progress plan showing emission reductions of 3 percent per year between 1996 and 2005 was required to ensure that proper strategies were being employed to decrease emissions.

Effective June 15, 2004, the United States Environmental Protection Agency (EPA) finalized ground-level ozone designations under the new eight-hour ozone NAAQS. These standards replaced the one-hour ozone NAAQS.

Kent County, part of the Philadelphia-Wilmington-Trenton non-attainment area, is classified as moderate under the eight-hour standard. For Kent County, the eight-hour ozone non-attainment area boundary is the same as the one-hour non-attainment area boundary. Based on this designation, transportation conformity must be based on the existing one-hour attainment budget for all applicable analysis years until the new eight-hour ozone SIPs are implemented. Attainment of the new federal zone standards is required by the year 2010, which becomes a new milestone year for the conformity analysis.

The emissions targeted for the Dover/Kent County MPO region are the two major ozone contributors, volatile organic compounds (VOCs) and nitrogen oxide (NOx). While naturally-produced ozone in the upper atmosphere protects life on earth by filtering out radiation from the sun, ozone at the ground level is a noxious pollutant. Ground-level ozone is the major component of smog and can damage lung tissue, worsen respiratory diseases, increase chances of pulmonary diseases, and make people more susceptible to respiratory infections. Automobile emissions are one of the major contributors to ozone formation. Both VOCs and NOx are the result of combustion within a vehicle engine. VOCs and NOx at the ground level form ozone in the presence of sunlight.

This chapter demonstrates the transportation conformity of the 2030 Regional Transportation Plan to the eight-hour NAAQS.

7.2 Methodology

The air quality analysis conducted for the 2030 RTP uses a series of computer-based modeling techniques which are described below. These methodologies are consistent with techniques that the Dover/Kent County MPO and DelDOT have used to conduct previously required air quality analyses and to assist DNREC with various SIP documents. They are similar to methods other state and regional agencies use to prepare air quality analysis.

7.2.1 Travel Demand Modeling

A travel demand model for Kent County is maintained by DelDOT. The model uses a variety of data about the roadway network, travel patterns, and automobile ownership, as well as demographic information such as population and employment sites. The model follows the traditional four-step modeling approach that includes trip generation, trip distribution, mode split, and assignment. The model is run in the QUBE software package.

The modeling process developed for the Regional Transportation Plan uses a 2008 base year network validated against DelDOT traffic counts. Model networks were developed for 10-year intervals, 2010, 2020, and 2030 for Kent County. The types of projects tested were corridor improvements, highway widening, and new roadway construction. Each project was added to the network in the year when the improvement was completed. Socioeconomic projects such as population, employment, and household size were developed for the same 10-year intervals.

Exhibit 7.1: Included Projects

Project Phasing

		score		Year of Completion	Road Classification	Conformity Status	Regionally Significant?	Rationale
Capital Projects - Highway			**Highway Projects**					
	Committed Projects		South Governors Ave Reconstruction Webbs Lane to Water Street	**2011**	**Arterial**	**Exempt**		**No capacity increase**
		27.1	Complete the SR 1 Little Heaven Grade Separated Intersection	**2015**	Arterials	Exempt		Intersection Reconstruction
		26.4	Complete the SR 1 and SR 9 Grade Separated Intersection at DAFB	**2010**	Arterials	Exempt		
		23.2	Complete the SR 1 / Thompsonville Road Grade Separated Intersection (K 19)	**2014**	Arterials	Exempt		
		23.2	Complete the SR 1 South Frederica Grade Separated Intersection (Cedar Neck Road K 120)	**2015**	Arterials	Exempt		
		23.2	Complete the SR 1, North Frederica Grade Separated Intersection	**2012**	Arterials	Exempt		
		27.15	Complete the SR 1/NE Front St. Grade Separated Intersection	**2020**	Arterial	Exempt		
		29.0	Upgrade Barratts Chapel Road from SR 1 to Kersey Rd to include adequately wide travel lanes and shoulders and include bicycle, pedestrian and transit facilities as appropriate	**2020**	Major Collector	Exempt		Shoulders, Bike/Ped
		29.0	Improve Carter Road from Sunnyside Road to Wheatley's Pond Road (DE 300) to include adequately wide travel lanes and shoulders and pedestrian and bicycle facilities	**2020**	Major Collector	Exempt		Shoulders, Bike/Ped
		28.3	Upgrade Duck Creek Parkway from Bassett Street to Main Street in north Smyrna to include adequate travel lanes, shoulders, curbs, drainage, and bicycle and pedestrian improvements	**2020**	Major Collector	Exempt		Shoulders, Bike/Ped
		28.3	Construct the West Dover Connector	**2020**	Minor Arterial	Non-exempt		Regionally Significant

Project Phasing

				Year of Completion	Road Classification	Conformity Status	Regionally Significant?	Rationale
		25.1	Realign Wyoming Mill Road with the Village of Westover entrance and signalize	**2012**	Major Collector	Exempt		Realignment
		28.3	Construct the Clarence Street Extension	**2020**	Local	Non-exempt		Not Regionally Significant
		29.0	Complete gateway improvements on Forest St, including a roundabout at the intersection of Loockerman Street and Forest Street	**2016**	Minor Arterial	Exempt		Intersection Improvements
	Included New Projects	37.0	**DE 8: Construct recommendations from the DE 8 Concept and Operations Study**	**2030**	Minor Arterial			
		37.0	- D8: Intersection Improvements: Left turn phasing at 4 intersections	**2030**	Minor Arterial	Exempt		Intersection Improvements
		37.0	- D8 : Intersection Improvements: Access to the new High School site (Carey Farm), Calvary Church site	**2030**	Minor Arterial	Exempt		Intersection Improvements
		37.0	- D8 : Intersection Improvements: Mifflin Road right turn and realignment of Brandywine Apts entrance	**2030**	Minor Arterial	Exempt		Intersection Improvements
		37.0	- D8: N/S Connector Road: Chestnut Hill Road to Rt 8	**2030**	Major Collector	Non-exempt		Not Regionally Significant
		37.0	- D8: N/S Connector Road: Rt 8 to Hazletville Rd	**2030**	Major Collector	Non-exempt		Not Regionally Significant
		37.0	- D8 : N/S Connector Road: Connection above Road to Artis Drive	**2030**	Major Collector	Non-exempt		Not Regionally Significant
		37.0	- D8 : Install Bicycle and pedestrian Improvements including bike lanes, designated, controlled crossings with ped signals and an alternative shared use path	**2030**	Minor Arterial	Exempt		Shoulders, Bike/Ped
		37.0	- D8 : Connector Road behind Greentree Shopping Center between Independence Blvd and Kenton Road	**2030**	Local	Non-exempt		Not Regionally Significant
		37.0	- D8: Realign intersection of Artis Drive with DE 8	**2030**	Local	Exempt		Intersection Improvements

Project Phasing

			Year of Completion	Road Classification	Conformity Status	Regionally Significant?	Rationale
	37.0	- D8: Interconnections to enhance Rt 8 Corridor Capacity Independence south of Rt 8 to Mifflin Road, Dove View to Modern Maturity, Heatherfields/Fox Hall West & Cranberry Run,	**2030**	Exempt	Exempt		Intersection Improvements
	37.0	- D8 : Connector Road south of Gateway West to Commerce Way	**2030**	Local			Below Arterial
	37.0	**NDS: Implement the recommendations of the Concept Plan for US 13 and 113 in Dover**	**2030**	Minor Arterial			
	37.0	- NDS: Construct a collector road between the Scarborogh Rd. and US 13 to the East of Dover Mall and Dover Downs, to Leipsic Road (NDS is North Dover Study)	**2030**	Major Collector	Non-exempt		Not Regionally Significant
	37.0	- NDS: Construct a collector between above and US 13 adjacent to Best Buy	**2030**	Major Collector	Non-exempt		Not Regionally Significant
	37.0	- NDS: Realign Exit 104 toll plaza and access roads to accommodate above	**2030**	Other Freeway	Exempt		Intersection Improvements
	37.0	- NDS: Realign Leipsic Road and connect to US 13 at Jefferic Blvd. and to the Barry Van Lines site	**2030**	Major Collector	Exempt		Roadway Redesign
	37.0	- NDS: Construct Crawford Carroll Rd extension from behind Lowes to College Rd east of DSU	**2030**	Major Collector	Non-exempt		Not Regionally Significant
	37.0	- NDS: Construct a local road between above and US 13 across from a realigned Dover Mall North entrance	**2030**	Major Collector	Exempt		Below Arterial
	34.7	Upgrade Kenton Road from DE 8 to Chestnut Grove Road in Dover with shoulders, sidewalks, bike and transit facilities and closed drainage	**2030**	Minor Arterial	Exempt		Shoulders, Bike/Ped
	33.2	Intersection Improvements to South State Street at SR 10 (Lebanon Road)	**2020**	Minor Arterial	Exempt		Intersection Improvements
	33.2	Intersection Improvements to South State Street: Sorghum Mill Rd. to SR 10 (Lebanon Road)	**2020**	Minor Arterial	Exempt		Intersection Improvements
	33.2	South State St. Intersection Improvements various intersections (8 total) between US 13 and SR 1	**2020**	Minor Arterial	Exempt		Intersection Improvements

Project Phasing

			Year of Completion	Road Classification	Conformity Status	Regionally Significant?	Rationale
	32.4	Upgrade West Street from New Burton Road (Queen Street) to North Street in Dover to include adequate travel lanes, shoulders, curbs, drainage, and bicycle and pedestrian improvements	**2020**	Major Collector	Exempt		Shoulders, Bike/Ped
	32.4	Construct pedestrian improvements on US 13 from Duck Creek to the north Smyrna SR 1 interchange	**2030**	Major Collector	Exempt		Shoulders, Bike/Ped
	30.8	Upgrade Front Street corridor from Rehoboth Blvd to SR 1, Milford to include adequate travel lanes, shoulders, curbs, drainage, bicycle and pedestrian improvements and intersection improvements	**2030**	Major Collector	Exempt		Shoulders, Bike/Ped
	30.8	Construct /fill gaps in pedestrian improvements on US 13 in Smyrna	**2030**	Minor Arterial	Exempt		Shoulders, Bike/Ped
	30.7	Upgrade corridor of DE 14 from DE 15 to Church Street and from Washington Street to SR 1 with adequate lane width, shoulders, sidewalks and transit facilities	**2030**	Minor Arterial	Exempt		Shoulders, Bike/Ped
	30.7	Complete upgrade of DE 300 from railroad tracks to US 13 to include sidewalks, bicycle and transit facilities and intersection improvements at Carter Rd/DE 6 area	**2030**	Major Collector	Exempt		Shoulders, Bike/Ped
	30.7	Upgrade Irish Hill Road from SR 1 to US 13 to include adequate travel lanes, shoulders, and bicycle and pedestrian improvements	**2030**	Major Collector	Exempt		Shoulders, Bike/Ped
	30.7	Upgrade College Road from Salisbury to Kenton Road to include turn lanes where needed, shoulders, sidewalks or multi-use path, curbing and closed drainage	**2030**	Minor Arterial	Exempt		Shoulders, Bike/Ped
	29.1	Construct a connector road from White Oak Road to DE 8	**2015**	Major Collector	Non-exempt		Not Regionally Significant
	29.1	Upgrade Sunnyside Road from DE 300 to US 13 in Smyrna to include adequate travel lanes, shoulders, curbs, drainage, and bicycle and pedestrian improvements	**>2030**	Major Collector	Exempt		Shoulders, Bike/Ped

Project Phasing

				Year of Completion	Road Classification	Conformity Status	Regionally Significant?	Rationale
		29.1	Construct/fill gaps in pedestrian facilities on US 113 between Court Street and Lafferty Lane	**>2030**	Minor Arterial	Exempt		Shoulders, Bike/Ped
		28.5	Upgrade N. Main Street in Smyrna to include adequate travel lanes, shoulders, curbs, drainage, and bicycle and pedestrian improvements	**>2030**	Major Collector	Exempt		Shoulders, Bike/Ped
		28.5	Upgrade Joe Goldsborough Road from Duck Creek Road to US 13 to include adequate travel lanes, shoulders and bicycle and pedestrian facilities	**>2030**	Major Collector	Exempt		Shoulders, Bike/Ped
		28.5	Upgrade Paddock Road from US 13 to SR 1 to include adequate travel lanes, shoulders and bicycle and pedestrian facilities	**>2030**	Major Collector	Exempt		Shoulders, Bike/Ped
		27.3	Upgrade Messina Hill Road to improve safety and include adequate travel lanes, shoulders and bicycle and pedestrian facilities	**>2030**	Major Collector	Exempt		Shoulders, Bike/Ped
Capital Projects - Transit			**Transit Projects**					
			Expand fixed-route bus service	**2010**	|	Non-exempt		Regionally Significant
			Expand paratransit service	**2020**	|	Non-exempt		Not Regionally Significant
			Create/operate the Smyrna Shuttle	**2020**	|	Non-exempt		Not Regionally Significant
	New Projects		Delaware Air Park - DRBA - Runway Extension	**2020**	|	Exempt		No New Emissions
			Implement recommendations of Civil Air Terminals Studies	**2020**	|	Exempt		Categorically
			Construct the Dover Transit Center at Water and West Streets	**2020**	|	Exempt		No New Emissions

The network horizon years used in the model were selected in accordance with EPA regulations.

7.2.2 Emissions Factor Model

The second major software used in this air quality analysis was MOBILE6.2, a program developed by the EPA to calculate mobile source emission rates for each one-mile-per-hour increment up to 65 miles per hour. The factors determined the emission rates for various vehicle classifications at different speeds. Factors were needed for each of these increments because speed is a critical element in determining the total amount of emissions.

The overall structure of the MOBILE6.2 program is defined by the EPA. DNREC uses this model to predict the level of emissions. The input file for the modeling process reflects air quality strategies anticipated according to the SIP and its amendments.

7.2.3 Mobile Source Emissions

The estimates of emissions for Kent County are generated jointly by DelDOT and DNREC. The post-processor takes data produced by the QUBE model output and adjusts it for input into the mobile emissions model. This process links the speeds and volumes generated by the travel demand model with emission factors from MOBILE6.2. Once emissions for each segment are calculated, they are summed to identify the countywide totals presented below.

The vehicle miles traveled and emissions data for Kent County were adjusted to be compatible with data contained in the SIP. The adjustments represent factors to account for seasonal traffic variations and to align the travel demand estimates with DelDOT's HPMS traffic level reporting system.

7.3 Mobile Source Emissions Data

Both NOx and VOC emissions were tested in Kent County for 2010, 2020, and 2030 against the MOBILE6.2 eight-hour ozone standard attainment plan budgets. These amounts mirror the budgets set in the latest revision to the Kent County rate of progress plan which the EPA approved on November 20, 2008. **Exhibit 7.2** summarizes this information.

Exhibit 7.2: Emissions Data

Year	VMT	VOC	Budget	Nox	Budget
2008			4.14		9.68
2010	5375696	3.81		7.89	
2020	6487825	3.17		2.34	
2030	6614003	1.95		1.66	

Notes:

1) 2008 Fleet Data (MOBILE6.2 files: KENT10OZ.TB1, KENT20OZ.TB1, KENT30OZ.TB1).
2) D/K MPO Land Use Data - DelDOT TDM TAZ File A30POPemp_N3.DBF
3) DelDOT Transportation Model Network File BASE_NETWORK_15B.NET (D/K MPO Project List 11-25-08)
4) DelDOT/WRA Travel Model CLEAN MODEL 15B 1-26-09

7.4 Conclusions

The Dover/Kent County MPO Regional Transportation Plan meets the conformity criteria established by the EPA and the Federal Highway Administration (FHWA). According to the analysis, the plan contributes required emissions reductions for 2010, 2020 and 2030 in comparison to the 2008 budgets for VOCs and NOx.

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8. Implementation of the Plan

This section discusses how the Dover/Kent County MPO Regional Transportation Plan (RTP) Update will be carried out. The RTP update is built on a foundation of coordination between local, county, and state agencies working with the MPO. The coordination extended to the development of the RTP along with the rewriting of the two major Comprehensive Plans, Kent County (approved 10/7/2008) and the City of Dover (slated for approval 1/2009). This cooperation and coordination must continue as the plan is implemented by the agencies partnering with and members of the MPO.

This plan will be implemented through the Transportation Improvement Program (TIP) and the day-to-day activities of MPO member agencies and the MPO staff. The State Department of Transportation is required to comply with the RTP. The federal agencies that approve the expenditure of federal transportation funds will base their decisions on this document.

8.1 SAFETEA-LU Compliance

To obtain federal funding, long-range planning must be in compliance with the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) reauthorization, signed into law on August 10, 2005. This latest federal surface transportation act authorizes a transportation program for the five-year period of federal fiscal year 2004 through 2009. This act covers all surface transportation programs, such as highways, highway safety, transit, freight, and transportation research.

To meet SAFETEA-LU metropolitan planning requirements, the following must be met:

- A plan must have a 20-year planning perspective and include air quality conformity, fiscal constraint, and public involvement.
- A plan must be updated within four years of the previous plan's completion.
- A plan must contain operational and management strategies to improve the performance of existing transportation facilities and investment and other strategies that provide for multimodal capacity increases based on regional priorities and needs, as well as propose transportation and transit enhancement activities.
- Safety and security are to be considered as separate planning factors, as opposed to being combined in TEA-21 regulations.
- The metropolitan planning process must promote consistency between transportation improvements and state and local plans and patterns.
- A plan must contain a discussion of potential environmental mitigation activities.
- Transit operators must participate in the cooperative development of funding estimates for the financial plan.

The MPO fully considered the above listed SAFETEA-LU requirements in the development of the RTP update. The Dover/Kent County MPO has prepared and will adopt this plan update before the May 7, 2009 anniversary and due date., This plan's long-range planning horizon is through 2030, slightly longer than the required 20 year planning perspective. The MPO developed a public involvement plan to accompany the RTP update, adopted in 2007. Fiscal constraints are applied to the proposed projects listed in this plan. An estimated planning-level budget has been developed and is applied to the actions required for this plan. All project/activity lists are limited to those prioritized projects that add up to the projected amount available. Fundamental strategies of the

plan, and applicable recommended actions, are developed to preserve and enhance the operations and management of the existing transportation system. Separate strategies for safety and security were developed for the RTP update. Also, several state and local plans and patterns have been reviewed and updated with the RTP to ensure that the improvements proposed in this RTP update are consistent with their plans. Air quality is addressed through the Conformity Analysis, Chapter 7 of this plan. A summary of how SAFETEA-LU requirements are met is listed in **Exhibit 8.3**.

In addition to being a SAFETEA-LU requirement, the RTP update makes all efforts to include and be consistent with other state and local agency plans. Several state, county, and local plans are also updated periodically and look to the RTP to guide consistency and conformity of future transportation plans. Long-range transportation plans have been updated or are in the process of being updated in the areas adjacent to the MPO; to the north by the Wilmington Area Planning Council [WILMAPCO] and to the south by Sussex County. The Livable Delaware Agenda is used to coordinate state agency planning and to support growth as appropriate. County comprehensive plans are reviewed by the Livable Delaware Advisory Council. Transportation plans described within county plans must also be consistent with the goals of state planning programs. Since future land use and growth plans go hand in hand with transportation plans, these elements of local comprehensive plans were referred to in the development of this RTP update. Additionally, transit and state bicycle and pedestrian plans were referenced and are included in the recommended actions.

Plans Referenced – Regional

Bowling-Green Warren County Long-Range Transportation Plan 2030
City of Dover Comprehensive Plan Update (2003, Amended 2005)
City of Milford Comprehensive Plan 2003 Update (Amended 2006)
Concept Plan for US 13 and 113 in Dover – Phase I (November 1, 2000)
SR 8 Concept and Operations Study (May 2008)
Delaware Bicycle Facility Master Plan Report (October 2005)
Delaware Economic Development Office (DEDO), Kent County Action Plan
Delaware Statewide Pedestrian Action Plan (July 2007)
Delaware Transit Corporation (DTC) Business Plan (February 2007)
Kent County Comprehensive Plan (draft version, 2007)
Kent County Economic Development Strategy Initiative
South State Street Area and Access Study ((May 2002)
Suburban and Community Street Design Standards Project (June 2000)
Town of Smyrna Comprehensive Plan (2002, Updated 2005)
US 13 Pedestrian Improvements (October 2003)
WILMAPCO Regional Transportation Plan (March 22, 2007)

Peer

2025 Chittenden County Metropolitan Transportation Plan (Vermont)
Lebanon County Long-Range Transportation Plan 2005-2030 (Pennsylvania)
United Jefferson Area Mobility Plan 2025 (Virginia)

The eight planning factors required by SAFETEA-LU are:

- Support Economic Vitality
- Increase Accessibility and Mobility

- Protect the Environment (including promote consistency with planned growth and economic development patterns)
- Enhance Modal Integration
- Promote Efficient System Management
- Preserve the Existing System
- Increase Safety; and Increase Transportation Security.

Access, safety, security, and mobility are included as a theme of this RTP update. The framework of the RTP is based on five fundamental goals that embody the planning factors, as discussed in Chapter 5. These fundamental goals are developed to guide growth for infrastructure investments and planning. **Exhibit 8.1** summarizes the planning factors that must be met along with how they are met through the specific goals. The table also demonstrates how the evaluation criteria are linked to the SAFETEA-LU required factors during the TIP project selection process.

Exhibit 8.1: SAFETEA-LU Federally-Required Planning Factors

		Dover/Kent County MPO TIP Project Scoring	
Federally-Required Planning Factors	**How The 2030 RTP Implements The Factors**	**Description**	**Weight**
Support Economic Vitality	Primarily addressed by the actions as part of Goal 1 – Strengthen the Local Economy.	Extent to which project supports worker and customer access to major commercial sites, freight, major business/industrial sites, and trans-shipment points, and supports economic development.	17
Protect the Environment (including promoting consistency with planned growth and economic development patterns)	Primarily addressed by the actions as part of Goal 2 – Improve quality of life, and Goal 3 – Support desired land use and effective growth management.	Extent to which the project supports policies or is derived from an approved county or municipal comprehensive plan or a special transportation study or bike plan. Extent to which project avoids problems related to drainage, noise, cultural/historic areas, and ecologically-sensitive areas.	16 5
Increase Accessibility and Mobility	Primarily addressed by the actions as part of Goal 2 – Improve quality of life, and Goal 3 – Support desired land use and effective growth management, and Goal 4 – Improve access and mobility while ensuring the safety of all citizens, and Goal 5 – Safely and efficiently transport people and goods.	Extent to which project has disproportionately high and adverse effects on minority and low-income populations or disproportionately benefits populations not protected under Title VI of the Civil Rights Act of 1964. Extent to which project supports shifting people/goods to rail or bus, or supports more efficient operation of rail or bus.	4 6
Enhance Modal Integration	Primarily addressed by the actions as part of Goal 2 – Improve quality of life, and Goal 3 – Support desired land use and effective growth management, and Goal 4 – Improve access and mobility while ensuring the safety of all citizens, and Goal 5 – Safely and efficiently transport people and goods.	Extent to which project incorporates/supports/enhances bicycle/pedestrian access or use as well as transit.	8
Preserve the Existing System	Primarily addressed by the actions as part of Goal 3 – Support desired land use and effective growth management.	Extent to which project supports and implements the goals of the MPO's long-range transportation plan.	8
Increase Safety	Primarily addressed by the actions as part of Goal – Improve access and mobility while ensuring the safety of all citizens, and Goal 5 – Safely and efficiently transport people and goods.	Extent to which project location represents a safety hazard/solution for motorists, pedestrians, bicyclists and/or transit users.	22

Increase Transportation Security	Primarily addressed by the actions as part of Goal 4 – Improve access and mobility while ensuring the safety of all citizens, and Goal 5 – Safely and efficiently transport people and goods.	Extent to which project supports and implements the goals of the MPO's long-range transportation plan.	6
Promote Efficient System Management	Primarily addressed by the actions as part of Goal 5 – Safely and efficiently transport people and goods.	Extent to which a project fills a gap or eliminates functional bottlenecks/pinch points. Project has been identified in the congestion management system. Extent to which a project can be adequately maintained after completion.	6 2

The five areas of emphasis contained in SAFETEA-LU, in addition to the eight federal planning factors described in the previous table., are identified in **Exhibit 8.2** below.

Exhibit 8.2: SAFETEA-LU Federally-Required Emphasis Areas

EMPHASIS AREA	HOW THE 2030 RTP IMPLEMENTS THIS PLANNING EMPHASIS AREA
Consideration of Safety and Security in the Transportation Planning Process	This area is met through Goal 5 – Safely and efficiently transport people and goods.
Linking the Planning and NEPA Process	The Plan has few elements that are of a scale to trigger NEPA review requirements; the West Dover Connector, the DE 8 Concept and Operations Study and the North Dover Study. Each study includes consideration of NEPA requirements and land use best practices in the study definition and evaluation. The process of developing recommendations for these studies includes data collection, analysis, development of alternatives, and the identification of a preferred alternative. It is intended that the analyses and decisions occurring during this project can carry through to the NEPA process, as appropriate.
Consideration of Management and Operations within the Planning Process	The MPO includes a matrix of Goals and related Performance Measures in this Plan as Appendix Z. DelDOT is in the process of developing performance measures to monitor the state of the state-wide system on an annual basis.
Enhancing the Technical Capacity of the Planning Process	The D/KCMPO has enhanced our Technical Capacity in Planning for this Regional Transportation Plan. In development, the MPO enlisted the assistance of a consultant to complete the Plan. Nearing completion of the draft, the MPO hired a certified planner to both complete the Plan and to develop the procedures and metrics to assess our progress toward meeting it's goals.
Coordination of Human Services Transportation	Led by DTC; primarily addressed by the actions described in Chapter X as part of "Goal 4 – Improve access and mobility while ensuring the safety of all citizens". Coordination done through Delaware United We Ride.

8.1.1 Year-of-Expenditure Dollars

When the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) released their Statewide and Metropolitan Planning Rule, it included a new requirement for long-range transportation plans. Under the new rule, financial constraint of the plan must be demonstrated in "Year-of-Expenditure" dollars, or YOE dollars. The rationale for this rule is that long-range estimates of transportation costs have understated the deficit between costs and revenues. Therefore, converting all costs and revenues to YOE dollars would theoretically present a more accurate picture of costs, revenues, and deficits associated with a long-range transportation plan.

The financial data reflects the YOE cost for each project. The total cost for each project has been increased to include inflation for the time period in which the project is to be implemented. All

projects in the first 10 years of the plan were placed into YOE estimates based on anticipated 2014 project costs. Outside of the first 10 years of the RTP, most projects do not have a specific implementation date and are grouped, with some exceptions, into the 2030 time period.

8.1.2 Environmental Mitigation

Identifying key environmental resources at the planning stage plays an essential role in impact avoidance or minimization. This early identification provides better proposal scoping, analysis, and delivery. Municipal and county planning efforts previously referenced have been helpful in identifying the environmental protection considerations and potential impacts of proposed transportation improvements. Similarly, many environmental resources have been identified at the municipal and county levels in their respective comprehensive plans and other planning documents that were prepared in concert with this RTP update. This identification and analysis of regional environmental resources provides an ecosystem-based approach to address the potential environmental impacts of improving the overall transportation system.

General ideas of how mitigation can be carried out through various goals of this plan are referenced in the recommended actions of this plan. Adhering to growth plans to preserve open space and agricultural uses is one way this plan would integrate land use and transportation. Minimizing environmental impacts of transportation improvements is a goal for all recommended actions in this plan. This RTP update and area comprehensive plans identify strategies and goals that conserve resources, including agriculture, open space, farmland, and natural resources.

Specific mitigation strategies would be preliminary at this point of the long-range planning process. A detailed environmental analysis would be conducted for each project, as necessary.

Potential environmental mitigation activities may include:

- Avoiding impacts.
- Minimizing a proposed activity/project size or its involved area.
- Restoring temporary impacts to pre-alteration state.
- Precautionary and/or abatement measures to reduce construction impacts.
- Providing a suitable replacement or substituting environmental resources of equivalent or greater value, on- or off-site that could even result in a net benefit as a last resort.
- Considering revisions to zoning and subdivision ordinances to further protect wetlands, natural areas, flood hazard areas, woodlands, riparian areas, forest and other natural corridors, and watersheds.
- Incorporating measures to protect environmentally-sensitive and biodiverse areas of the Dover/Kent County MPO region.

8.1.3 Visualization

Exhibits have been used throughout this document to illustrate the components of the RTP update. The exhibits convey how the different elements the planning process considered to create a unified plan. Exhibits are also used to show the nature and extent of the existing conditions in the Dover/Kent County MPO area and the relevant plans. The illustrations also identify the locations of the recommended actions and their relation to other projects within the Dover/Kent County MPO. A listing of all exhibits is provided in the beginning of this document.

8.1.4 Summary

Exhibit 8.3 provides a summary of how this RTP update meets the requirements set forth by SAFETEA-LU for long-range transportation planning.

Exhibit 8.3: Relationship of the Regional Transportation Plan Update to SAFETEA-LU

SAFETEA-LU Requirement	How the 2030 RTP Meets Requirement
Plan Cycle – Plans shall be updated every four years in air quality non-attainment and maintenance areas.	This RTP is an update to the previous version completed in May, 2005.
Fiscal Constraint	A determination of estimated funds available during the term of the Plan is discussed in Chapter 7. This Plan is fiscally constrained. Projects to be listed in the TIP, anticipated in March, 2008, will be fiscally-constrained to be implemented.
Transportation System Security – Safety and security are to be addressed as separate factors.	Projects are evaluated separately in terms of how they increase safety and transportation security. New strategy related to security has been incorporated into the plan.
Environmental Mitigation – Plans must include a preliminary discussion of the types of potential environmental mitigation activities, to be developed in consultation with federal, state, and tribal wildlife, land management, and regulatory agencies.	Preliminary and potential avoidance and mitigation strategies are discussed in Chapter 5. Specific environmental mitigation will be carried out with specific projects. as determined through a collaborative process.
Consultations – MPOs must consult "as appropriate" with "state and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation" in developing long-range transportation plans.	Development of this plan was completed through the support of DelDOT and monthly meetings with the Technical Advisory Committee (TAC) and Public Advisory Committee (PAC). The Plan was formulated concurrently with at least two local comprehensive plans.
Consistency of Plan with Planned Growth and Development Plans – Revises the previous planning factor related to environmental factors to add promoting consistency between transportation improvements, and state and local planned growth and economic development patterns.	The Plan was formulated concurrently with at least two local comprehensive plans. Kent County TIDs, State Strategies, and growth plans in comprehensive plans are addressed in Chapter 5.
Operational and Management Strategies – Plans shall include operational and management strategies to improve the performance of the existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods.	This plan has the two fundamental strategies of: "Preserve and Maintain the Existing Transportation System while improving Safety and Security of the Existing Transportation System" and "Improve the Management of the Existing Transportation System." Implementation strategies are included that will meet these objectives.
Public Involvement – MPOs must develop and utilize a "Participation Plan" that provides reasonable opportunity for interested parties to comment on the content of the plan and TIP.	The Public Participation Plan was developed and adopted in November 2007 to promote an affirmative policy to encourage participation.
Visualization Techniques in Plans and TIP Development – As part of the transportation plan and TIP development, MPOs shall employ visualization techniques.	Visualization techniques, charts, tables, and GIS-based maps, are used throughout the document. The MPO created a MS Powerpoint Presentation and offered to present it at local government or community meetings and events. The MPO staff made the presentation for xx groups during the comment period.

Exhibit 8.3: Relationship of the Regional Transportation Plan Update to SAFETEA-LU

SAFETEA-LU Requirement	How the 2030 RTP Meets Requirement
Publication of Plans and TIP – MPOs shall publish or otherwise make available for public review the transportation plans and TIPs "including (to the maximum extent practicable) in electronically-accessible formats and means, such as the World Wide Web".	This plan, both draft and final, will be available on the Dover/Kent county MPO Web site when completed. Printed copies will be available at public libraries and government offices in the County. The public had an opportunity to make comments during preparation and will have a chance to make comments on the RTP update during and after the comment period .
Air Quality Conformity	The Dover/Kent County MPO area is classified as non-attainment for ozone under the Clean Air Act Amendments of 1990 (CAAA). Conformity analysis is discussed in Chapter 7. The RTP meets the requirements for air quality for a Plan in a non-attainment area.

8.2 The Planning Process for Specific Projects

This Regional Transportation Plan Update represents a feasible set of transportation improvements for the region; however, inclusion of a project in the plan does not guarantee that it will happen. Major construction and management projects go through a rigorous MPO prioritization process that includes consideration of project merits as they relate to the requirements of SAFETEA-LU, public review, programming decisions by DelDOT, and prioritization by the Council on Transportation. Finally, review by the Legislature is required before state or federal funding is allocated. All state agencies are required to follow Delaware's *Strategies for State Policies and Spending* when considering locations for capital improvement projects. Once a project is initiated, it must be scoped in order to determine the specific actions that will be taken and the environmental permits that will be required. Next it is designed and right-of-way is acquired. If a project is federally-funded or regionally-significant, it must appear in the MPO's TIP.

For proposed improvements, project planning and environmental studies will be performed to determine the best problem-solving alternatives. Depending on the outcome of data gathered to this point and public input, the best alternative may be to do nothing. If a project is warranted, it will be refined through preliminary and final design phases, and then constructed. Public involvement continues to be a part of each step of the planning process. Community input will be essential to ensure that the county's transportation system meets the needs of its residents.

Smaller scale projects that are undertaken as part of statewide programs are not subject to the same process. For some of these programs, such as bridge repair or pavement management, state and/or federal criteria exist for setting project priorities. For other categories, such as non-motorized transportation, the state has criteria for project selection. Regardless of the priority process used, all projects show a direct relationship with this RTP update.

The MPO depends on coordination with state and local government and the private sector to make this plan update a reality. State, county, and municipal zoning dictates where development will occur in the future. Transportation funding is dictated by legislation at both the state and federal levels. Through the publication of this RTP update, the Dover/Kent County MPO provides tools for decision-makers to make informed choices about projects and policies that advance the improvement of the transportation system. The public is included in making these choices

identified in the RTP. To build a partnership, regular public meetings are held, attendance at community events is encouraged, and the MPO participates in events and meetings hosted by related entities. A newsletter and the MPO's Web site provide current information to the community on the implementation of the RTP.

8.3 Staging the Improvements

All projects that are listed in this plan could not be completed at the same time. Some projects are suggested for the short term while others are listed with the intention for future completion. Funding limitations and the planning process require that transportation improvements be prioritized and staged within constraints of a budget. The projects could be staged in phases for completion. Short-term projects would be completed among the first phases, while medium- and long-term projects would be among subsequent phases. Projects listed in the TIP and projects already underway are the immediate priority. The number and estimated cost of projects identified through this process far exceeds the amount anticipated to be available. These unfunded projects are included in the RTP as an "Aspirations List" Please see Chapter 6 for additional detail on the project list and phasing.

8.4 Updating the Plan

The Dover/Kent County Regional Transportation Plan is an active document. To meet SAFETEA-LU requirements, a long-range plan would have to be updated every four years. However, this document will be reviewed periodically, amended as needed, and updated at a minimum of every three years. The previous plan was completed in 2005. The public involvement process will be used for each plan update. Plan updates could include any or all of the following:

- changing the prioritization of proposed improvements,
- suspending proposed improvements from consideration, and
- adding proposed improvements for consideration.

Appendix A: Travel Forecasting

Travel Forecasting

Travel forecasting is a process that estimates future traffic levels and resulting traffic conditions in order to assess how continuing growth will affect mobility and identify where transportation improvements are needed. DelDOT has developed a travel forecasting model that includes Delaware's three counties and the nine counties of Maryland's Eastern Shore. The modeling process for Kent County (as well as the other counties) is used to estimate current and future (year-2030) traffic volumes and project travel conditions. The computer application CUBE is the framework for this model.

The DelDOT model generates travel forecasts based on estimated population, employment and socio-economic data. Trips are assigned to the roadway network by the model based on estimated travel times, which are iteratively calculated by the model based on roadway characteristics and projected traffic levels. The resulting forecasts may be compared to estimated capacity to evaluate projected travel conditions in terms of volume-to-capacity ratios and level of service (LOS).

The DelDOT model uses a five-step process to estimate traffic conditions. These steps are as follows:

1. Determine the number of trips expected based on forecast population, employment and socio-economic conditions ("Trip Generation"). Trip generation estimates are developed at a zone level for small areas called Traffic Analysis Zones (TAZs). The greater Dover/Kent County MPO planning area is divided into 166 TAZs in the current DelDOT model. There are no "external stations" in the Kent County TAZ structure. There are 2,136 TAZs in DelDOT's model with about 1,000 reserved for future model refinements. Trips are generated for seven trip purposes.

2. Trips are distributed between TAZs ("Trip Distribution") based on the degree of connectivity between the zones (measured as estimated travel times) and the amount of population and employment forecast for each zone. For example, the number of trips forecast between a TAZ with a large population and a nearby TAZ with a large employment base would be far greater than the number of trips forecast to occur between two distant TAZs with small population bases.

3. Trips are allocated to the different travel modes using a "mode choice model" that includes automobiles, express bus routes, line-haul bus routes, and passenger rail routes based on "walk access" and "drive access" to all available transit services as well as relative travel time ratios between auto and non-auto modes (bus and rail), and between toll and non-toll route choices.

4. Traffic is routed to the transportation network ("Trip Assignment") using peak hour capacities and a capacity-constrained equilibrium path choice model. Up to twenty assignments are performed for morning, mid-day, afternoon, and off-peak travel periods and then summed together to estimate 24-hour "daily" traffic volumes for the particular scenario requested.

5. Feedback occurs. The process summarized above is repeated up to four times based on expected travel times given the projected traffic volumes forecasted for each link in the

network. This "feedback" allows the modeling process to account for differences between peak and off-peak traffic conditions in the estimation of where trips will be made to and from in the trip distribution phase.

Figure A-1 illustrates the Traffic Analysis Zone coverage for the Kent County portion of DelDOT's travel demand modeling tool.

The model process also includes a number of post-processing mechanisms to facilitate a variety of transportation planning functions, including estimation of vehicle emissions, a process to visually display where trips are projected to be made to and from, and a process for modeling evacuation scenarios.

Population and Employment Estimates

The DelDOT model relies on population and employment forecasts developed by the Delaware Population Consortium for the State of Delaware and for each of its three counties (including Kent County) as a basis for estimating the number of trips made. The Consortium used data gathered by the US Bureau of the Census and then developed projection estimates for growth in Kent County for the Year 2030 based on national trends, County and municipal land use plans, local trends, and local knowledge provided by planning officials. The Consortium data was first calculated at the County level then disaggregated into County Census Divisions (CCDs). To use the growth-oriented data in transportation planning models (as described above), Kent County planning staff worked with other planning agencies in the county (including the Dover/Kent MPO and DelDOT, among others) to further disaggregate the data among Traffic Analysis Zones (TAZ's) which are the base units of DelDOT's travel demand model. The DelDOT model used for this effort comprised 157 TAZs in Kent County.

Exhibit A.1: Travel Demand Model Coverage

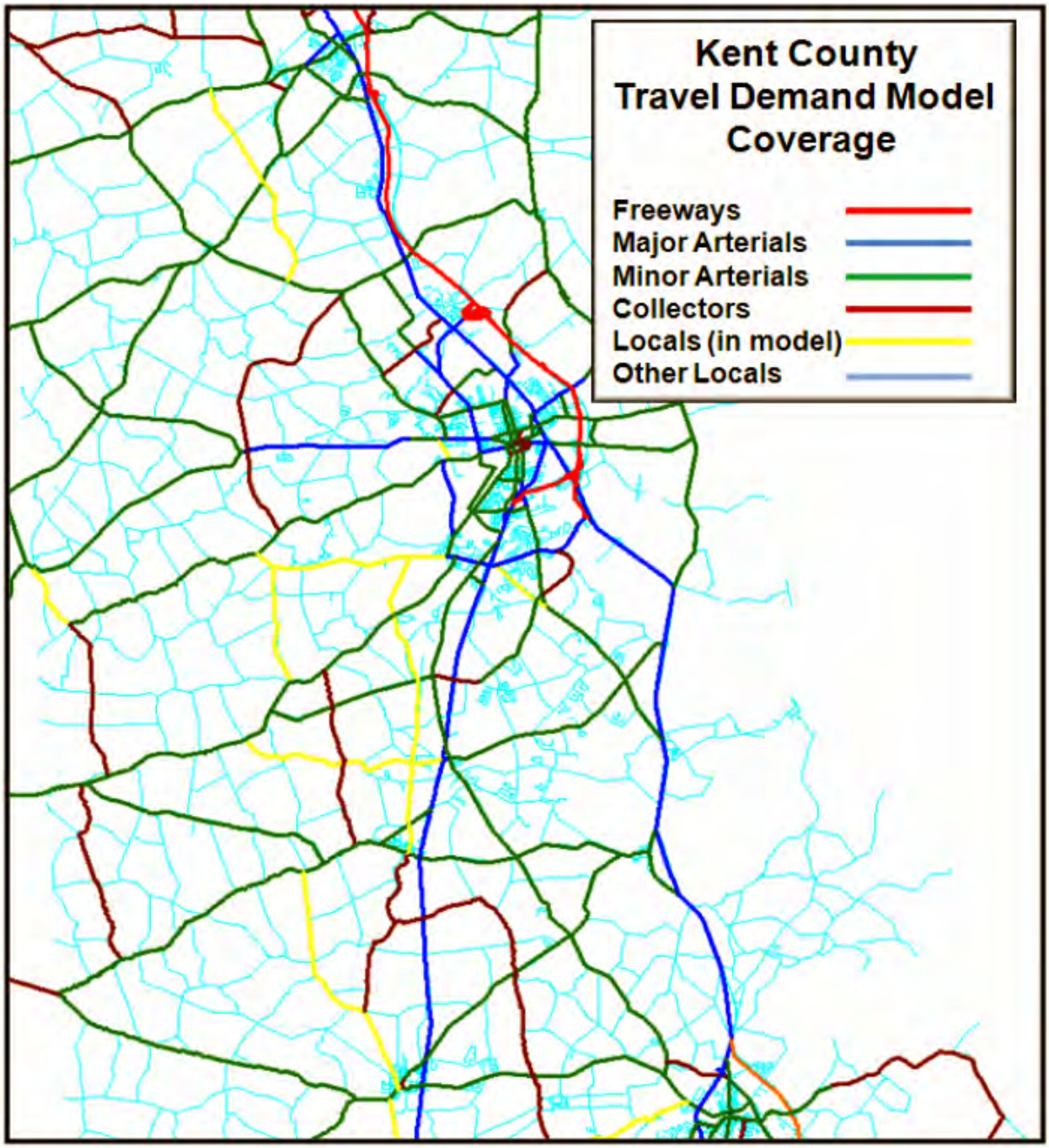

Exhibit A.2: Traffic Analysis Zone Coverage

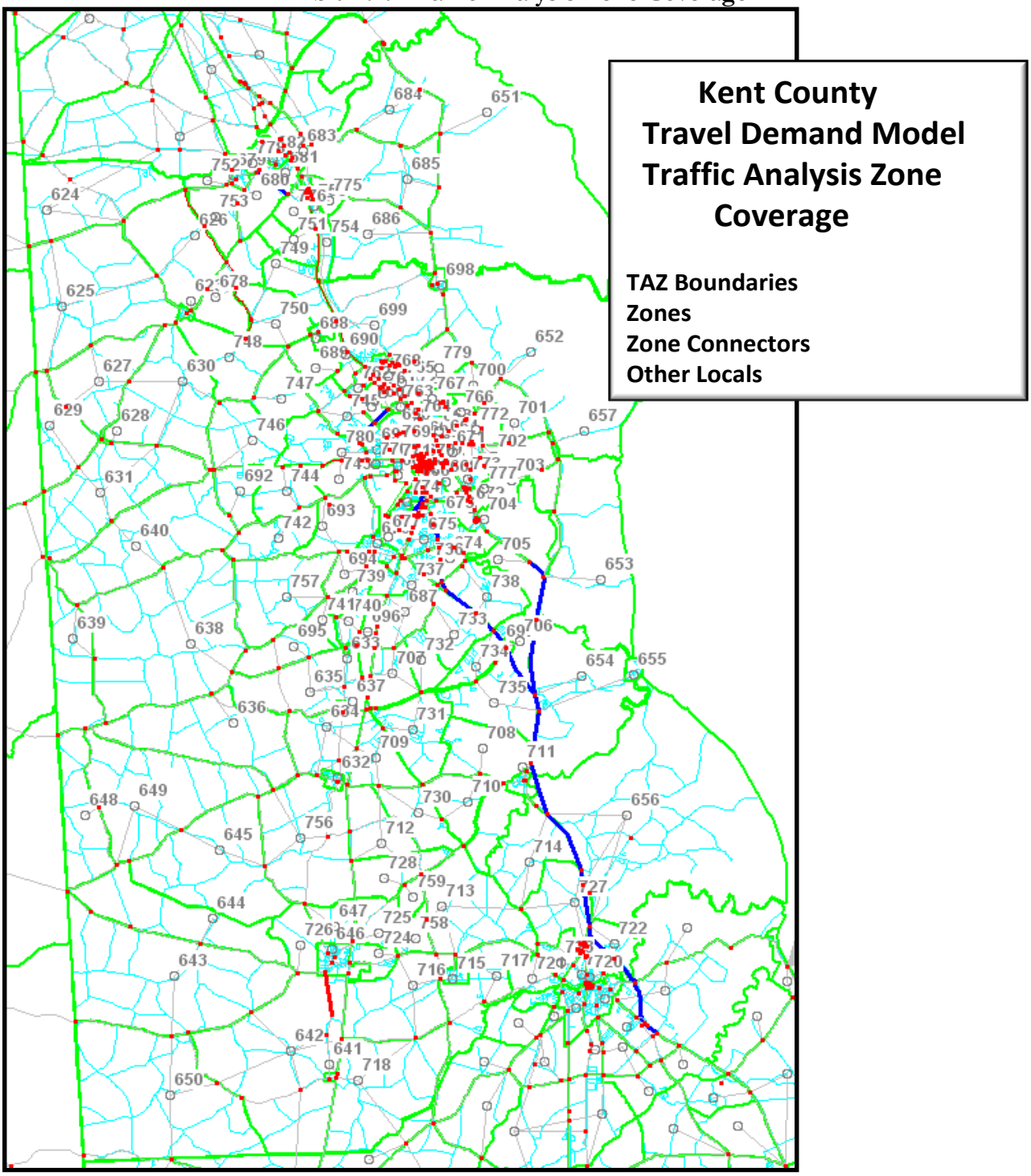

Figure A-2 illustrates the relative size and locations of the 157 traffic analysis zones located in the Kent County portion of DelDOT's travel demand model. The "green lines" present the traffic analysis zone boundaries; each traffic analysis zone has a unique "record number" (shown in red) or identity used to distinguish among the various data points.

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Appendix B: Air Quality Conformity

Introduction

This report demonstrates transportation conformity of the Dover/Kent County Metropolitan Planning Organization (MPO) for the fiscal year (FY) 2010-2013 Transportation Improvement Program (TIP) and the 2030 Regional Transportation Plan (RTP) for the Kent County, Delaware portion of the PA-NJ-MD-DE 8-hour ozone non-attainment area. This document replaces the previous approved conformity demonstration of the TIP and RTP and ensures that the findings meet all current and imminent conformity criteria established by the United States Environmental Protection Agency (USEPA).

Background on 8-Hour Ozone

Ozone is an odorless, colorless, gas and is created by a reaction between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight. While ozone in the stratosphere forms a protective layer, shielding the earth from the sun's harmful rays, ground level ozone is a key contributor to smog. Motor vehicle exhaust, industrial emissions, gasoline vapors, chemical solvents, and natural sources all contribute to NOx and VOC emissions. Since ozone is formed in the presence of heat and sunlight, it is considered a summertime pollutant.
The health effects of ozone vary. Ozone can irritate lung airways and cause inflammation similar to sunburn. Other symptoms include wheezing, coughing, pain when taking a deep breath and breathing difficulties during exercise or outdoor activities. People with respiratory problems, children and the elderly are most vulnerable, but even healthy people that are active outdoors can be affected when ozone levels are high. Even at very low levels, ground-level ozone triggers a variety of health problems including aggravated asthma, reduced lung capacity, and increased susceptibility to respiratory illnesses such as pneumonia and bronchitis. In addition to adverse health effects, ground-level ozone also interferes with the ability of plants to produce and store food, which makes them more susceptible to disease, insects, other pollutants, and harsh weather. Furthermore, ozone damages the leaves of trees and other plants, ruining the appearance of cities, national parks, and recreation areas. In 1997, the USEPA issued the 8-hour ozone National Ambient Air Quality Standards (NAAQS) at a concentration of 0.080 ppm. to better protect public health. Areas that have failed to meet the standards outlined above have been designated as non-attainment areas and, as a result, are subject to the requirements of transportation conformity. Transportation conformity requires non-attainment and maintenance areas to demonstrate that all future transportation projects will not hinder the area from reaching and attaining its air quality improvement goals. In particular, projects may not:

- Cause or contribute to new air quality violations
- Worsen existing violations
- Delay timely attainment of the relevant NAAQS

USEPA originally designated areas as non-attainment for the 8-hour ozone standard on April 15, 2004. Following modifications, the designations became final on June 15, 2005. USEPA designated the PA-NJ-MD-DE area as moderate non-attainment for the 8-hour ozone standard. This classification resulted in an attainment date of six years following the original designations or, June 2010, for the PA-NJ-MD-DE non-attainment area.

Status of the 2030 Regional Transportation Plan (RTP) and FY2009-2012 Transportation

Improvement Program (TIP):

As the Metropolitan Planning Organization (MPO) for Kent County, Delaware, Dover/Kent County MPO is charged with authoring a long-range transportation plan with at least a 20-year planning horizon. The RTP presents recommendations for enhanced transportation efficiency and functionality, including the construction of new facilities, improved connectivity to multiple travel modes, and the enhancement of existing highway, transit, and bicycle/pedestrian facilities. Transportation projects that address challenges faced by the region are identified in this plan and placed on the four-year TIP that corresponds to that project's development timetable. The FY 2010 – 2013 TIP and the 2030 RTP were created by the Dover/Kent County MPO staff and member agencies. The 2030 RTP was adopted by the Dover/Kent County MPO Council on January 28, 2008 and the FY 2010-2013 TIP is scheduled to be adopted on March 4, 2009.

Interagency Consultation Process

As required by the federal transportation conformity rule (40 CFR 93.105) the transportation conformity process includes a significant level of cooperative interaction among federal state and local agencies. Interagency consultation requires coordination with local county representatives, the MPO and representatives from state, city and federal agencies which include but are not limited to:

- City of Dover
- Dover/Kent County MPO
- Delaware Transit Corporation
- Delaware Department of Transportation
- Delaware Department of Natural Resources and Environmental Control
- FHWA
- USEPA
- FTA
- Kent County Department of Planning

Determining Planning Assumptions

8-Hour Ozone Standard

The emissions resulting from regional transportation conformity analysis equal to or less than the USEPA approved, Delaware Department of Natural Resources and the Environment's (DNREC) Motor Vehicle Emission Budgets. USEPA regulations, as outlined in the Final Transportation Conformity Rule, Section 93.118, Criteria and procedures further require that regional conformity emissions analyses be conducted for specific analysis years as follows:

- NAAQS Attainment year
- A near-term year, one to five years in the future

• The last year of the RTP's forecast period
• An intermediate year or years such that analyses years are no more than ten years apart.

All analysis years are determined through the interagency consultation process. 2010 has been selected as the near term year and is also the attainment year. The last year of the plan is 2030. 2020 has been chosen as the intermediate year so that the analysis years are no more than ten years apart, making the analysis years 2010, 2020 and 2030. As discussed above, ozone formation is a direct result of VOC and NOx emissions reacting with each other in the presence of sunlight. The USEPA has ruled that both precursor emissions, VOC and NOx, must be included in a regional analysis for the 8-hour ozone NAAQS to demonstrate regional transportation conformity.

Air Quality Modeling Methodology:

The air quality analysis conducted for the FY 2010-2013 TIP and 2030 RTP used a series of computer-based modeling methods which are briefly described below. These methods are consistent with methods Dover/Kent County MPO and DelDOT have used in conducting air quality analyses required by the Clean Air Act Amendments of 1990, and are similar to those used by other state and regional transportation agencies in preparing air quality analyses. They are also consistent with the modeling procedures Dover/Kent County MPO and DelDOT have used when assisting in the preparation of the State Implementation Plan for air quality (SIP) documents with DNREC.

Emission Factor Estimate

The USEPA required modeling software used in the regional air quality analysis is MOBILE 6.2, a program designed to calculate mobile source emission factors. These factors are generated for each one-mile per hour increment from 3 miles per hour to 65. The factors identify the emission rates for all on road vehicle classifications at the previously prescribed speeds. The input file for the modeling process reflects air quality strategies anticipated according to the SIP and its amendments as submitted by DNREC to the USEPA. (Examples of such strategies include fuel formula requirements and motor vehicle inspection programs).

Mobile Source Emissions Estimates

The estimates of emissions for Kent County are generated by DelDOT using a model post-processor combines the travel model output with output from the mobile model to calculate link based emissions. This process links the estimated roadway speeds and volumes generated by the travel demand model with emission factors derived from MOBILE 6.2. These emission factors are then multiplied by the link-based travel speeds generated in the travel demand modeling process to calculate link based emission estimates. Once emissions for each segment are calculated, they are summed to identify the countywide totals that are presented in this document. Adjustment factors are used to account for seasonal traffic variations and alignment of Delaware based vehicle miles traveled (VMT) estimates with the federal, Highway Performance Management System (HPMS). These data are used to standardize the Delaware specific VMT data as required by the USEPA so that direct comparisons can be made among different years and modeling scenarios.

Conformity Results

The following tables provide the Kent County conformity analysis results. These include tabulations of VMT and emissions by functional classes for the county, and a comparison to the applicable conformity budgets.

APPENDIX B
Part B: Support Documents

TOTAL Volatile Organic Compound Emissions(grams/day)

2010	**Kent County**	**Vehicle Type**								
	Functional Class	LDGV	LDGT12	LDGT34	HDGV	LDDV	LDDT	HDDV	MC	TOTAL
	Interstate-rural	0	0	0	0	0	0	0	0	0
	PA-rural	425498	248233	112930	32943	104	715	35934	26136	882416
	Minor Arterial-rural	203217	117613	53622	15893	50	348	18075	11166	420080
	Major collector-rural	175859	99139	45763	18672	55	409	27350	10052	377232
	minor collector-rural	46650	26299	12140	4953	15	109	7255	2667	100069
	local-rural	147098	82925	38279	15619	46	342	22877	8408	315537
	interstate-urban	0	0	0	0	0	0	0	0	0
	freeway-urban	191202	111774	50811	14919	47	325	16426	13169	398508
	PA-urban	101465	58810	26801	7886	25	172	8840	5588	209649
	Minor Arterial-urban	223702	129078	58895	17930	57	397	21255	12334	463731
	Major collector-urban	68843	38811	17915	7310	22	160	10707	3935	147674
	Local-urban	68657	38717	17866	7290	22	160	10678	3924	147274
	Total	1652192	951398	435021	143415	442	3138	179398	97380	3462172
	Total(in Tons)	1.82	1.05	0.48	0.16	0	0	0.2	0.11	3.81

TOTAL Volatile Organic Compound Emissions(grams/day)

2020	**Kent County**	**Vehicle Type**								
	Functional Class	LDGV	LDGT12	LDGT34	HDGV	LDDV	LDDT	HDDV	MC	TOTAL
	Interstate-rural	0	0	0	0	0	0	0	0	0
	PA-rural	226655	144777	65799	19453	43	335	30403	29196	516918
	Minor Arterial-rural	109845	69454	31610	9598	22	167	15729	12852	249254
	Major collector-rural	92821	57431	26305	10115	22	180	21643	11055	219742
	minor collector-rural	25747	15930	7297	2806	6	50	6003	3067	60952
	local-rural	77110	47710	21853	8403	18	150	17980	9184	182550
	interstate-urban	0	0	0	0	0	0	0	0	0
	freeway-urban	104858	67426	30623	9017	20	156	14139	15331	241305
	PA-urban	54276	34398	15651	4691	11	81	7515	6357	123018
	Minor Arterial-urban	111631	70319	32042	9925	22	174	16829	13080	254005
	Major collector-urban	36360	22497	10304	3962	9	71	8478	4331	86078
	Local-urban	44209	27353	12529	4818	11	86	10308	5265	104659
	Total	883511	557294	254014	82788	184	1449	149029	109719	2038480
	Total(in Tons)	0.97	0.61	0.28	0.09	0	0	0.16	0.12	2.24

TOTAL Volatile Organic Compound Emissions(grams/day)

2030	**Kent County**	**Vehicle Type**								
	Functional Class	LDGV	LDGT12	LDGT34	HDGV	LDDV	LDDT	HDDV	MC	TOTAL
	Interstate-rural	0	0	0	0	0	0	0	0	0
	PA-rural	152695	109964	49766	13329	25	218	24047	24871	375060
	Minor Arterial-rural	100031	71129	32229	8787	17	144	16243	14245	242738
	Major collector-rural	85007	57392	25957	9097	17	157	22193	11765	211746
	minor collector-rural	28780	19431	8788	3080	6	53	7514	3983	71690
	local-rural	68600	46310	20947	7341	14	127	17910	9495	170878
	interstate-urban	0	0	0	0	0	0	0	0	0
	freeway-urban	76279	55056	24926	6662	13	110	12212	13834	188873
	PA-urban	40945	29024	13152	3602	7	59	6695	5785	99237
	Minor Arterial-urban	96781	67852	30740	8729	17	146	17200	13611	235034
	Major collector-urban	32990	22270	10074	3530	7	61	8613	4566	82177
	Local-urban	36790	24833	11234	3937	7	68	9605	5092	91641
	Total	718899	503261	227811	68093	129	1144	142232	107247	1769075
	Total(in Tons)	0.79	0.55	0.25	0.07	0	0	0.16	0.12	1.95

2010	**Kent County**	**Vehicle Type**								
	Functional Class	LDGV	LDGT12	LDGT34	HDGV	LDDV	LDDT	HDDV	MC	TOTAL
	Interstate-rural	0	0	0	0	0	0	0	0	0
	PA-rural	381043	285672	161371	129070	345	2002	1230465	12807	2202599
	Minor Arterial-rural	171627	127483	72414	55864	124	720	442542	5145	875817
	Major Collector-rural	104310	72872	41746	24845	86	500	291206	2279	537783
	minor Collector-rural	27671	19331	11074	6591	23	133	77249	605	142658
	local-rural	87251	60954	34919	20781	72	418	243580	1906	449830
	interstate-urban	0	0	0	0	0	0	0	0	0
	freeway-urban	176727	133022	75022	60182	189	1102	711017	6404	1163459
	PA-urban	86804	64599	36641	28466	64	371	228141	2614	447693
	Minor Arterial-urban	185679	137089	77995	58653	132	764	469627	5444	935258
	Major Collector-urban	40834	28527	16342	9726	34	196	113998	892	210525
	Local-urban	40724	28450	16298	9700	34	195	113689	890	209954
	Total	1302670	957999	543823	403877	1103	6401	3921514	38987	7175576
	Total(in Tons)	1.43	1.05	0.6	0.44	0	0.01	4.31	0.04	7.89

TOTAL Nitrogen Oxide Emissions(grams/day)

2020	**Kent County**	**Vehicle Type**								
	Functional Class	LDGV	LDGT12	LDGT34	HDGV	LDDV	LDDT	HDDV	MC	TOTAL
	Interstate-rural	0	0	0	0	0	0	0	0	0
	PA-rural	155645	134808	77711	31611	72	634	319951	15218	735876
	Minor Arterial-rural	71637	61213	35389	13894	27	239	120352	6263	309049
	Major Collector-rural	43462	33703	18815	5879	18	157	76075	2644	180485
	minor Collector-rural	12056	9349	5219	1631	5	44	21102	733	50063
	local-rural	36106	27999	15630	4884	15	130	63199	2196	149937
	interstate-urban	0	0	0	0	0	0	0	0	0
	freeway-urban	74727	65252	37673	15326	42	368	193995	7946	395218
	PA-urban	35838	30763	17784	7073	14	122	61389	3185	156210
	Minor Arterial-urban	71566	60750	35126	13502	27	235	118256	6141	305647
	Major Collector-urban	17025	13202	7370	2303	7	61	29800	1036	70700
	Local-urban	20700	16052	8961	2800	8	75	36233	1259	85962
	Total	538761	453092	259678	98903	234	2064	1040354	46620	2439147
	Total(in Tons)	0.59	0.5	0.29	0.11	0	0	1.14	0.05	2.68

TOTAL Nitrogen Oxide Emissions(grams/day)

2030	**Kent County**	**Vehicle Type**								
	Functional Class	LDGV	LDGT12	LDGT34	HDGV	LDDV	LDDT	HDDV	MC	TOTAL
	Interstate-rural	0	0	0	0	0	0	0	0	0
	PA-rural	97087	97681	57024	11570	23	443	120327	13894	398045
	Minor Arterial-rural	60618	60258	35239	7006	12	228	61724	7931	233067
	Major Collector-rural	35017	30261	16891	2651	7	129	34926	2923	122813
	minor Collector-rural	11855	10245	5719	898	2	44	11825	990	41580
	local-rural	28259	24421	13631	2139	5	104	28185	2359	99109
	interstate-urban	0	0	0	0	0	0	0	0	0
	freeway-urban	49376	50180	29455	5918	14	262	71365	7568	214200
	PA-urban	24557	24290	14200	2807	5	88	23742	3093	92767
	Minor Arterial-urban	55851	54477	31897	6097	10	193	52037	6802	207377
	Major Collector-urban	13590	11744	6555	1029	3	50	13555	1135	47662
	Local-urban	15155	13097	7310	1147	3	56	15116	1265	53152
	Total	391364	376653	217923	41262	84	1596	432801	47960	1509772
	Total(in Tons)	0.43	0.41	0.24	0.05	0	0	0.48	0.05	1.66

Vehicle Miles of Travel

2010	**Kent County**		
	Functional Class	**Network Model Output**	**HPMS & Seasonal Factor Adjusted**
	interstate-rural	0	0
	freeway-rural	96270	140319
	PA-rural	981676	1532048
	Minor Arterial-rural	484676	706444
	Major collector-rural	295549	412727
	minor collector-rural	75115	109485
	local-rural	236852	345226
	interstate-urban	0	0
	freeway-urban	425746	691446
	PA-urban	243826	355391
	Minor Arterial-urban	589226	759910
	Major collector-urban	127533	161569
	minor collector-urban	0	0
	local-urban	110549	161131

Vehicle Miles of Travel

2020	**Kent County**		
	Functional Class	**Network Model Output**	**HPMS & Seasonal Factor Adjusted**
	interstate-rural	0	0
	freeway-rural	114808	167339
	PA-rural	1192937	1861750
	Minor Arterial-rural	596107	868861
	Major collector-rural	342821	478741
	minor collector-rural	91107	132794
	local-rural	272861	397712
	interstate-urban	0	0
	freeway-urban	534137	867482
	PA-urban	298909	435678
	Minor Arterial-urban	668323	861920
	Major collector-urban	148028	187534
	minor collector-urban	0	0
	local-urban	156436	228015
	Total	4416474	6487825

Vehicle Miles of Travel

2030	**Kent County**		
	Functional Class	**Network Model Output**	**HPMS & Seasonal Factor Adjusted**
	interstate-rural	0	0
	freeway-rural	119645	174390
	PA-rural	1049069	1637224
	Minor Arterial-rural	713855	1040486
	Major collector-rural	379072	529366
	minor collector-rural	122962	179224
	local-rural	293089	427195
	interstate-urban	0	0
	freeway-urban	503019	816943
	PA-urban	289891	422533
	Minor Arterial-urban	738245	952096
	Major collector-urban	162164	205442
	minor collector-urban	0	0
	local-urban	157183	229103
	Total	4528194	6614003

APPENDIX B
Part C – Mobile 6 Input Files

Available Upon Request

Dover/Kent County MPO
Metropolitan Planning Organization

Dover/Kent County Metropolitan Planning Organization

P.O. Box 383, Dover, Delaware 19903
http://www.doverkentmpo.org
(302) 760-2713 FAX: (302) 739-6340

RESOLUTION

ADOPTING THE AIR QUALITY CONFORMITY ANALYSIS FOR THE 2009 UPDATE OF THE REGIONAL TRANSPORTATION PLAN

WHEREAS, Kent County, Delaware has been designated as a moderate non-attainment area under the 8-hour National Ambient Air Quality Standards (NAAQS) for ozone by the United States Environmental Protection Agency (US EPA) with a designated attainment year of 2010, as required by the Clean Air Act as amended (CAAA); and

WHEREAS, the DOVER/KENT COUNTY METROPOLITAN PLANNING ORGANIZATION (D/KC MPO) has been designated the Metropolitan Planning Organization for Kent County, Delaware by the Governor of Delaware; and

WHEREAS, Statewide and Metropolitan Planning Regulations (23 CFR Part 450 and 49 CFR Part 613) require that regional transportation plans and transportation improvement programs be developed and updated by the MPO, approved by the Governor, reviewed by the Federal Transit Administration and the Federal Highway Administration; and

WHEREAS, MPO transportation plans and programs are required to conform to the purposes of the State Implementation Plan (SIP) and the CAAA under the Final Conformity Rule (Final Rule) promulgated by the US EPA in November 1993 and amended in July 2004; and

WHEREAS, the D/KC MPO has completed a conformity analysis of the RTP according to the procedures detailed in the Final Rule under the CAAA in a manner meeting the requirements of all appropriate federal and state regulations pertaining to statewide and metropolitan planning and air quality; and

WHEREAS, the analysis demonstrates that emissions of ozone precursors are less than the established motor vehicle emission budgets in the SIP; and

WHEREAS, the D/KC MPO has provided a reasonable opportunity for all interested parties to participate and have their views considered in the development and adoption of this conformity determination;

NOW, THEREFORE, BE IT RESOLVED that the DOVER/KENT COUNTY METROPOLITAN PLANNING ORGANIZATION determines that the 2009 Update of the 2030 RTP is found to conform to the current Delaware SIP and all NAAQS requirements under the CAAA, as amended, and that the finding is consistent with the Final Rule.

1/28/09
Date:

Bradley S. Eaby, Chairperson
DOVER/KENT COUNTY
METROPOLITAN PLANNING ORGANIZATION

JSW:crs

U.S.Department
of Transportation
Federal Highway Administration

Federal Transit Administration
Region III
1760 Market, Suite 500
Philadelphia, PA 19103
215-656-7100
215-656-7260 (fax)

Federal Highway Administration
Delaware Division
300 S. New Street, Suite 2101
Dover, Delaware 19904
302-734-5323
302-734-3066 (fax)

MAY 0 4 2009

Reply to: HDA-MD
(709)

The Honorable Carleton Carey Sr., Chair
Dover/Kent County MPO
P. O. Box 383
Dover, DE 19903

Dear Mr. Carey:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) have completed our review of the Dover/Kent MPO Regional Transportation Plan Update 2008. Our review has been coordinated with the regional office of the United States Environmental Protection Agency (EPA). The EPA has documented their review of the Region Transportation Plan Update 2008 in a letter to the FHWA's Delmar Division, Delaware Office dated April 22, 2009, (copy enclosed). U.S. EPA's review concluded that your transportation conformity determination met the requirements of the Clean Air Act and the applicable regulations promulgated thereunder at 40 CFR Part 93.

We find that the program of projects contained in the above mentioned Regional Transportation Plan Update 2008 are based upon a transportation planning process that meets the requirements of 23 CFR Part 450 Subpart A, B, and C, 23 USC Sections 134 and 135, and 49 USC Sections 5303-5305. We find that the analysis adopted by the Dover Kent MPO on January 28, 2009, demonstrates conformity of the Regional Transportation Plan Update 2008 and that the conformity determination has been performed in accordance with the Transportation Conformity Rule (40 CFR Part 93). In accordance with the provisions of Section 134, Title 23 USC, this approval does not constitute a final commitment of Federal funds. Federal funding for these projects is finalized when project authorization is requested of FHWA or upon approval of a grant application to FTA. Each FTA application must meet the appropriate project requirements.

Any questions concerning this approval should be directed to Kwame Arhin, FHWA, DelMar Division, 410-779-7158, or Keith Lynch, FTA Region III, 215-656-7056

Any questions concerning this approval should be directed to Kwame Arhin, FHWA, DelMar Division, 410-779-7158, or Keith Lynch, FTA Region III, 215-656-7056

Sincerely yours,

Hassan Raza
Division Administrator
Federal Highway Administration

for Letitia A. Thompson
Regional Administrator, Region III
Federal Transit Administration

Enclosure

cc:

Carolann Wicks, DelDOT
Ralph Reeb, DelDOT
Judith Katz, EPA Region 3
Mark Glaze, DelDOT
Martin Kotsch, EPA Region 3
Juanita Wieczoreck, Dover/Kent MPO
Basharat Siddiqi, FHWA
Keith Lynch, FTA
Kwame Arhin, FHWA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103

APR 2 2 2009

Mr. Nelson Castellanos, Division Administrator
Federal Highway Administrator
DELMAR Division -Maryland
10 S. Howard Street
Suite 2450
Baltimore, Maryland 21201

Dear Mr. Castellanos:

The U.S. Environmental Protection Agency (EPA) has reviewed the 8-hour ozone transportation conformity determinations for the FY 2010-2013 Transportation Improvement Programs and 2030 Regional Transportation Plan for Kent County Delaware submitted to us with your request dated February 3, 2009. EPA reviewed the conformity determinations in accordance with the procedures and criteria of the Transportation Conformity Rule contained in 40 CFR Part 93, Sections 93.106, 93.108, 93.110, 93.111, 93.112, 93.113(b), 93.113(c), 93.118.

Our review of the conformity determinations for Kent County indicates that the determinations meet the requirements of the Clean Air Act and the applicable regulations promulgated thereunder at 40 CFR Part 93. Enclosed, please find EPA's detailed evaluations titled "Technical Support Document for Review of 8-Hour Ozone Conformity Determinations for the Kent County, Delaware FY 2010-2013 Transportation Improvement Program and 2030 Regional Transportation Plan".

If you have any questions, please contact Ms. Carol Febbo, Chief, Energy, Radiation, and Indoor Environment Branch, at 215-814-2076 or Mr. Martin Kotsch, at 215-814-3335.

Sincerely,

Diana Esher

Diana Esher, Acting Director
Air Protection Division

Enclosure

cc: Juanita Wieczoreck (Kent/Dover MPO) w\enclosure
Mark Glace (DelDOT) w\enclosure
Tony Tarone (FTA) w\enclosure
Phil Wheeler (DNREC) w\enclosure

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103

April 14, 2009

SUBJECT: Technical Support Document for Review of 8-Hour Ozone Conformity Determinations for the Kent County, Delaware FY 2010-2013 Transportation Improvement Program and 2030 Regional Transportation Plan

FROM: Martin Kotsch, (3AP23)

TO: Administrative Record of EPA's Review of 8-Hour Ozone Conformity Determinations for the Kent County, Delaware FY 2010-2013 Transportation Improvement Program and 2030 Regional Transportation Plan

THRU: Carol Febbo, Chief
Energy, Radiation and Indoor Environment Branch (3AP23)

The purpose of this document is to review 8-hour ozone transportation conformity determinations for the Kent County, Delaware FY 2010-2013 Transportation Improvement Program (TIP) and 2030 Regional Transportation Plan (Plan) and to determine whether or not the conformity determinations meet the requirements of the Clean Air Act and the applicable regulations promulgated thereunder at 40 C.F.R. Part 93. On February 3, 2009, EPA Region III received the Kent County conformity determinations for the TIP and Plan and a request from the Maryland Division Office of the Federal Highway Administration (FHWA) to review the document. The conformity determinations were prepared by the Dover/Kent County Metropolitan Planning Organization (MPO). The conformity determinations were reviewed in accordance with the procedures and criteria of the Federal Transportation Conformity Rule, 40 CFR Part 93, Sections 93.106, 93.108, 93.110, 93.111, 93.112, 93.113(b), 93.113(c) and 93.118.

The Kent County area is a moderate 8-hour non-attainment area for ozone. For the 8-hour conformity analysis, the 2008 Reasonable Further Progress Plan budgets are applicable for use in the 8-hour conformity analysis.

EVALUATION OF CONFORMITY DETERMINATIONS FOR THE KENT COUNTY, DELAWARE TIP AND PLAN SUBMITTED TO EPA BY FHWA ON FEBRUARY 3, 2009			
GENERAL CRITERIA APPLICABLE TO BOTH PLAN AND TIP			
SECTION of 40 CFR Part 93	**CRITERIA**	**Y/N**	**COMMENTS**
93.110	Are the conformity determinations based upon the latest planning assumptions? (a) Are the conformity determinations, with respect to all other applicable criteria in §§93.111 - 93.119, based upon the most recent planning assumptions in force at the time of the conformity determinations? (b) Are the assumptions derived from the estimates of current and future population, employment, travel, and congestion the most recently developed by the MPO or other designated agency? Are the conformity determinations based upon the latest assumptions about current and future background concentrations?	Y Y Y	(a, b) The conformity determinations are based upon the latest planning assumptions in force and approved by the MPO at the time of the determinations. Year 2008 vehicle registration data were used in the analysis. The analyses utilized socio-economic data based upon the year 2007 Delaware state demographic data and projected to each of the analysis years.
	(c) Are any changes in the transit operating policies (including fares and service levels) and assumed transit ridership since the previous conformity determination discussed?	Y	There have been no changes in any operating policies or assumptions for ridership since the last conformity determination.

	(d) The conformity determinations must include reasonable assumptions about transit service and increases in transit fares and road and bridge tolls over time.	Y	The conformity determinations included reasonable toll, transit service and fare assumptions.
	(e) The conformity determinations must use the latest existing information regarding the effectiveness of the TCMs and other implementation plan measures which have already been implemented.	N/A	There are no TCMs in the SIP. However, the following implementation plan measures were accounted for in the conformity analyses: the Federal Motor Vehicle Control Program (FMVCP), reformulated gas, Reed Vapor Pressure 7.8 psi for all analysis years, Stage II vapor recovery, I&M, On Board Diagnostics and anti-tampering programs.
	(f) Key assumptions will be specified and included in the draft documents and supporting materials used for the interagency and public consultation required by §93.105.	Y	Key assumptions have been included in the documents and supporting materials used for interagency and public consultation. They were included in the materials made available during the public review period.

93.111	Are the conformity determinations based upon the latest emissions model?	Y	The conformity determinations were based upon emission factors developed using MOBILE6.2, the currently-approved EPA mobile emissions model.
93.112	Did the MPO make the conformity determinations according to the consultation procedures of the conformity rule or the state's conformity SIP?	Y	Consultation has occurred among all appropriate agencies. Public participation occurred through out the entire TIP/Plan development process over period of two years. No comments were received on the conformity determination.

SPECIFIC CRITERIA APPLICABLE TO THE PLAN			
SECTION of 40 CFR Part 93	**CRITERIA**	**Y/N**	**COMMENTS**
93.106(a) (1)	Are the horizon years correct?	Y	The years 2010, 2020 and 2030 are appropriate horizon years.
93.106(a) (2)(i)	Does the plan quantify and document the demographic and employment factors influencing transportation demand?	Y	Chapter 4 of the Plan discusses demographic and employment factors.
93.106(a) (2)(ii)	Is the highway and transit system adequately described in terms of the regionally significant additions or modifications to the existing transportation network which is envisioned to be operational in the horizon years?	Y	The highway and transit system is adequately described in terms of regionally significant additions or modifications to the existing transportation network, which the transportation plan envisions to be operational in the horizon years.
93.108	Is the Transportation Plan fiscally constrained?	Y	EPA is deferring to the MPO and FHWA who have found the Plan to be fiscally constrained.
93.113(b)	Are TCMs being implemented in a timely manner?	N/A	There are no TCMs in the SIP.
93.118	For areas with SIP budgets: Is the Transportation Plan, TIP or Project consistent with the motor vehicle emissions budget(s) in the applicable SIP?	Y	For Kent County, projected emissions for 2010, 2020 and 2030 are less than the 2008 RFP SIP emission budgets (in parentheses) as shown below (all emissions in tons per day): Year VOC NOx 2010 3.81 (4.14) 7.89 (9.68) 2020 3.17 (4.14) 2.34 (9.68) 2030 1.95 (4.14) 1.66 (9.68)

SPECIFIC CRITERIA APPLICABLE TO THE TIP			
SECTION of 40 CFR Part 93	**CRITERIA**	**Y/N**	**COMMENTS**
93.108	Is the Transportation Improvement Program fiscally constrained?	Y	EPA is deferring to the MPO and FHWA who have found the TIP to be fiscally constrained
93.113(c)	Are TCM's being implemented in a timely manner?	N/A	There are no TCMs in the SIP.
93.118	For areas with SIP budgets: Is the Transportation Plan, TIP or Project consistent with the motor vehicle emissions budget(s) in the applicable SIP?	Y	For Kent County, projected emissions for 2010, 2020 and 2030 are less than the 2005 Attainment SIP emission budgets (in parentheses) as shown below (all emissions in tons per day): Year VOC NOx 2010 3.81 (4.14) 7.89 (9.68) 2020 3.17 (4.14) 2.23 (9.68) 2030 1.95 (4.14) 1.66 (9.68)

CONCLUSION

Pursuant to FHWA's February 3, 2009 request, we have reviewed the Kent County, Delaware 8-hour ozone conformity determinations for the 2010-2013 TIP and 2030 Plan. We have determined that the TIP and Plan meet the requirements of the Clean Air Act and the applicable regulations promulgated thereunder at 40 C.F.R. Part 93.

Appendix C: Glossary

A glossary of terms commonly used in transportation planning is provided below. Not all of the terms are used in this report; the definitions of these other terms are included as a help to the reader in review of other documents.

Alternative	A collection of transportation improvements for model testing, from which one or more will be chosen as a recommended plan.
Alternative Modes	Transportation other than one person in a motorized private vehicle, such as transit, walking, bicycling & carpooling.
Arterial	A class of street serving a major movement of traffic not served by a freeway.
Attainment	Have pollutant concentrations less than the specified standard.
Auto Ownership	In common modeling parlance, the number of passenger vehicles available to a household for routine daily travel.
Average Daily Trip (ADT)	The average number of vehicles passing a specified point during a 24-hour period.
Baseline	A scenario against which the results of alternative scenarios are measured.
CAAA	Clean Air Act Amendments
Capacity	For highways, the maximum number of vehicles that can pass over a given section of a lane or roadway in one or both directions during a given time period under prevailing environmental, roadway, and traffic conditions.
Capacity Deficiency	A situation where travel demand exceeds the ability of a facility to handle that demand.
Carpool	A group of people who share their automobile transportation to designated destinations on a regular basis.
CBD	Central Business District
CO	Carbon Monoxide

Complete Streets	Designing streets that accommodate a variety of user groups.
Cost Effectiveness	Cost per unit of a measure of effectiveness (e.g. tons of pollutant reduced).
Congestion Management System (CMS)	A requirement of ISTEA that each Transportation Management Area develop a CMS that provides for effective management of new and existing transportation facilities through the use of travel demand reduction and operational management strategies. Unless a part of a CMS, future highway projects which significantly increase capacity for single occupant vehicles may be ineligible for federal funding.
Density	When used in transportation planning, the number of persons or houses per square mile.
Destination	The point at which a trip terminates or the zone in which a trip ends.
Diurnal emissions	Vehicular emissions that occur on a daily cycle, and are not necessarily related to vehicle use (though usage patterns may affect diurnal emissions rates). Currently, diurnal emissions factors are available for evaporative hydrocarbon emissions only.
Expressway	A divided arterial highway for through traffic with full or partial control of access and generally with grade separations at major intersections.
Fixed route transit	Transit services with regular established routes & schedules. Other types of transit might be demand responsive or door-to-door service
Forecasting	In planning, the process of determining the future conditions, magnitudes, and patterns within the urban area such as future population, demographic characteristic and, travel demand
Freeway	A divided arterial designed for the safe non-impeded movement of large volumes of traffic, with full control of access and grade separations at intersections

Functional Classification	The classification of urban roadways by function. Roadways at the top of the hierarchy and other long-distance movement of traffic, roadways at the bottom provided access to land. Traffic volume and spacings typical of each level in the hierarchy.
Goal	The end towards which effort is directed. The desired eventual end of a planning process.
Growth factor	A value used to adjust existing data to produce an estimate for some future year.
HPMS	Highway Performance Monitoring System
High Occupancy Vehicle (HOV)	Applied to a vehicle carrying two or more people. High volume roadways may have lanes designated for HOV use. These may be dedicated for use by carpools, vanpools, and buses.
HSIP	Highway Safety Improvement Program
Intelligent Transportation Systems (ITS)	Transportation systems that involve integrated applications of advanced surveillance, communications, computer, display, and control process technologies on the roadway network, in the vehicle, and modes. Examples include electronic toll collection, and automated vehicle location.
Incorporated	Areas that fall under city/town as well as county jurisdictions.
Intermodal	Between or including more than one means or mode of transportation.
Internoc	A post processing linkage program which multiplies the estimated volume on each segment of the roadway network corresponding to each segments average speed.
Land Use	The way specific portions of land or the structures on them are used (e.g., commercial, residential, industrial, etc.).
Level of Service	The quality of service provided by a facility under a given set of operating conditions.

Local Street	A street or road primarily for access to residence, business or other abutting property.
Long-Range Plan	Generally referring to a transportation plan covering a time span of 10 or more years. ISTEA requires metropolitan planning organizations, in consultation with the State, prepare a plan spanning 20 years by October 1, 1993.
Macroscopic Model	A model that describes traffic flow in the aggregate.
Measures of Effectiveness	MOEs are used to determine the degree to which a particular goal or objective has been attained. MOEs are used as a basis or standard of comparison (measure), of an action which "produce a decisive, desired result" (effectiveness).
Microscopic Model	A model that describes traffic flow in terms of individual vehicles.
Metropolitan Planning Organizations (MPO)	The organizational entity designated by law with lead responsibility for developing transportation plans and programs for urbanized areas of 50,000 or more in population.
Mobile Source	A moving source of emissions, including but not limited to motor vehicles.
Mode	A means of transportation, such as car, bicycle, bus, or train.
Mode Choice	A process by which an individual selects a transportation mode for use on a trip or trip chain, given the trip's purpose, origin, and destination; characteristics of the individual; and characteristics of travel by the realistically-available modes.
National Ambient Air Quality Standards (NAAQS)	Standards established by the Environmental Protection Agency that determine the maximum allowable amount of air pollutants.
Non-Attainment Areas	An area that does not achieve one or more federal national ambient air quality standards.
NOx	Nitrogen oxides along with volatile organic compounds (VOCs) the two compounds are precursors of ozone formation.

Objectives	Operational statements of goals, measurable and attainable.
Origin-Destination Survey	A survey of the number, purpose, and mode of trips from various zones of destination.
Ozone	The O3 form of oxygen, a regulated pollutant and a key component of smog.
PSI	Present Serviceability Index
Paratransit	Typically, on-demand transit service that does not follow a fixed route or schedule. Riders may have to meet eligibility requirements in order to use the service.
Park and Ride	A procedure that permits a patron to drive a private automobile to a transit station, park in the area provided for that purpose, and ride the transit system to his or her destination.
Peak Hour (Peak Period)	That hour (period) during which the maximum amount of travel occurs. Generally, there is a morning peak and an afternoon peak.
POV	Privately owned vehicle
Ridesharing	A transportation service which includes carpooling, vanpooling, buspooling and transit.
Right-of-Way	A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users is legislation that followed TEA-21. It was passed by Congress in 2005 attempting to address the Nation's changing transportation needs by investing funds in highways, highway safety, and public transportation.
State Resource Areas (SRA)	SRAs are the most important natural open space lands valued for their natural, cultural, and geological significance as determined by the Delaware Department of Natural Resources and Environmental Control (DNREC).

Strategic Planning	A style of planning that assesses opportunities/strengths and constraints/weaknesses and identifies options for capitalizing on the opportunities and overcoming or minimizing the constraints.
TIP	Transportation Improvement Program
TCM	Traffic Control Mitigation
Transit-oriented development (TOD)	A transit-oriented development (TOD) is a mixed-use residential or commercial area designed to maximize access to public transport, and often incorporates features to encourage transit ridership.
Transit-ready development (TRD)	Transit ready development is development that accommodates future potential transit alignments.
Transferable Development Right (TDR)	Transferable Development Right is a development right that may be transferred from a "Sending Site" to lands that are designated as suitable for development ("Receiver Site").
Transportation Control Measure (TCM)	An action to adjust traffic patterns or curtail vehicle use intended to reduce air polluting emissions, (e.g., ridesharing, alternative work hours, trip reduction ordinances).
Transportation Demand Management (TDM)	An action designed to regulate the use of a transportation mode or facility as a means of travel, primarily intended to reduce congestion, (e.g., transit enhancements, road pricing, parking strategies).
Transportation Equity Act for the 21st Century (TEA21)	Legislation passed by Congress restructuring funding for highway and transit programs, authorizing funds for a period of six years.
Transportation System Management (TSM)	Actions implemented at relatively low cost which improve a transportation system and allow more efficient use of existing transportation facilities (e.g. intersection improvements, lane striping, synchronized signalization, etc.)
Travel Demand Forecasting	Predicting the impacts that various policies and programs will have on travel demand in the area.

Trip generation	The determination of the number of trips that have their origin or destination in a specified location or area.
Vehicle Availability	The number of passenger vehicles available to a household for routine daily travel.
Vehicle Occupancy	The number of people in a car, truck, bus, etc.
Vehicle Miles Traveled (VMT)	A standard area-wide measure of travel activity, most often calculated by multiplying average trip length by the total number of trips.
VOCs	Volatile Organic Compound
Volume-to-Capacity Ratio	Used in figuring the level of service of a roadway. The number of vehicles versus the capacity of the road.
Zone	Geographically, the smallest analysis area for transportation analysis.

Adapted from Base Comprehensive Transportation Planning Bulletin Appendix E, United States Air Force, May 1984.

Appendix D: Population and Household Estimates by TAZ

Appendix D: Population and Household Projections
by Traffic Analysis Zone 2005 and 2030

TAZ Number	Housing Units 2005	Housing Units 2030	Population 2005	Population 2030
K001	92	92	262	252
K002	545	685	1555	1876
K003	479	639	1367	1750
K004	128	288	365	788
K005	318	451	862	1172
K006	27	27	68	66
K007	88	200	223	489
K008	654	849	1753	2190
K009	729	998	1848	2438
K010	261	262	692	667
K011	76	77	210	203
K012	550	635	1472	1630
K013	210	264	581	701
K014	376	492	1041	1309
K015	67	67	185	179
K016	685	842	1896	2237
K017	234	285	630	735
K018	557	765	1412	1870
K019	35	35	92	90
K020	347	695	915	1761
K021	298	465	786	1177
K022	107	246	282	624
K023	185	196	488	495
K024	1193	1211	3149	3068
K025	92	148	243	376
K026	137	166	361	419
K027	289	332	762	838
K029	349	598	921	1515
K054	90	91	230	225
K055	91	91	231	221
K056	233	339	591	829
K057	341	560	826	1303
K058	166	169	402	394
K059	756	943	1828	2195
K060	73	73	185	177
K074	643	668	1741	1742
K075	876	901	2782	2764
K076	585	593	1557	1523
K077	399	416	1029	1034
K078	123	126	312	309
K079	781	784	1980	1916
K080	848	853	2154	2088
K081	15	612	38	1495
K082	366	369	1071	1045
K083	484	493	1230	1206
K084	290	298	753	745
K085	114	115	289	282
K086	133	133	337	326
K087	727	912	1909	2293
K088	618	630	1567	1539
K089	457	523	1158	1276
K090	184	229	466	559
K091	1057	1133	2677	2767
K092	791	807	2005	1972

Appendix D: Population and Household Projections
by Traffic Analysis Zone 2005 and 2030

TAZ Number	Housing Units 2005	Housing Units 2030	Population 2005	Population 2030
K093	1051	1058	2702	2624
K094	229	870	627	2214
K095	344	344	878	851
K096	277	1030	707	2546
K097	546	546	1668	1626
K098	833	833	2125	2061
K099	669	669	1707	1655
K100	180	191	459	473
K101	133	133	339	329
K102	125	141	319	349
K103	291	507	806	1346
K104	138	137	350	336
K105	121	393	307	960
K106	456	545	1156	1332
K107	1335	1385	3499	3502
K108	230	270	583	659
K109	88	157	223	384
K110	152	158	385	387
K111	124	141	343	375
K112	173	192	479	511
K113	93	94	257	249
K114	85	85	215	207
K115	629	921	1594	2249
K116	104	126	264	309
K117	24	27	61	66
K118	23	24	58	58
K119	28	28	71	68
K120	27	27	449	447
K121	1106	1154	2801	2820
K122	93	117	257	310
K123	642	836	1777	2221
K124	215	717	569	1834
K125	408	637	1091	1626
K126	170	2488	412	5790
K127	291	293	705	683
K128	144	147	384	375
K129	510	763	1309	1880
K130	85	164	206	383
K131	168	170	443	430
K132	522	673	1380	1704
K133	304	538	782	1343
K134	336	650	886	1648
K139	905	958	2251	2292
K142	401	428	971	996
K207	180	250	436	581
K208	225	294	545	685
K209	236	269	571	625
K210	220	387	580	980
K211	132	163	348	412
K212	70	149	185	379
K213	301	812	729	1889
K214	118	124	311	312
K215	0	0	0	0
K216	76	187	200	472

Appendix D: Population and Household Projections
by Traffic Analysis Zone 2005 and 2030

TAZ Number	Housing Units 2005	Housing Units 2030	Population 2005	Population 2030
K217	786	1058	2167	2799
K218	384	623	1063	1656
K219	402	620	1113	1648
K220	432	467	1196	1242
K221	1002	1583	2774	4207
K222	768	908	1947	2217
K223	734	1099	1861	2684
K224	688	1134	1905	3013
K225	218	243	553	593
K226	128	140	354	372
K227	37	84	102	222
K228	329	443	834	1082
K229	379	604	961	1476
K230	157	215	398	525
K231	946	1135	2399	2776
K232	316	430	801	1050
K233	311	595	788	1454
K234	269	427	766	1168
K235	394	869	1004	2148
K236	151	692	384	1707
K237	227	1442	621	3608
K238	2	190	5	470
K239	248	451	633	1116
K240	208	960	531	2373
K241	76	101	194	250
K242	434	496	1144	1255
K243	295	342	817	910
K244	85	163	224	412
K245	26	26	69	67
K246	74	92	294	330
K247	146	145	370	355
K248	134	133	340	326
K249	15	22	1617	1632
K250	381	389	966	951
K251	31	31	79	75
K252	458	456	1161	1113
K253	111	117	281	287
K254	430	439	1090	1072
K255	107	106	271	260
K256	274	277	695	676
K257	659	694	1670	1695
K258	215	289	545	705
K259	179	178	454	435
K260	955	961	2418	2349
K261	20	20	51	49
K262	479	890	1236	2216
K263	151	155	383	379
K264	696	780	1776	1930
K265	42	55	106	134
K266	1592	1671	4033	4082

Appendix E

Part A: Funded Projects

List of Recommended Projects

			Year Completed By	Year Of Expenditure $ Amount	Road Classification
		Estimated Available Statewide Programs Funding		***$1,059,587***	
Statewide Projects					
Statewide Programs		Transit (Expanded Bus Service and Rail Service)	**2030**	*$289,979*	
		Civil Air Terminal	**2030**	*$45,886*	
		Bicycle lending or sharing programs	**2010**	*$500*	
		Bridges	**2030**	*$12,501*	
		Corridor Preservation	**2030**	*$43,359*	
		Environmental Improvements	**2030**	*$12,782*	
		Equipment	**2030**	*$24,920*	
		Intersection Improvements	**2030**	*$12,247*	
		Materials and Minor Contracts	**2030**	*$65,260*	
		Operations	**2030**	*$86,234*	
		Paving Program	**2030**	*$210,149*	
		Rail Crossings	**2030**	*$1,369*	
		Highway Safety Improvement Program/Plan	**2030**	*$8,799*	
		Signage and Pavement Markings	**2030**	*$9,389*	
		Technology	**2030**	*$2,870*	
		Traffic Calming	**2030**	*$2,319*	
		Transit Facilities	**2030**	*$773*	
		Transportation Enhancements	**2030**	*$50,622*	
		Transportation Facilities	**2030**	*$28,568*	
		Transportation Management	**2030**	*$8,756*	
		Engineering & Contingencies	**2030**	*$3,062*	
		EZ Pass	**2030**	*$4,358*	
		Aeronautics	**2030**	*$1,770*	
		Estimated Total Cost		***$926,474***	
		Estimated Available Highway Project Funding		***$566,895***	
Highway Projects					
Committed Projects		South Governors Ave Reconstruction Webbs Lane to Water Street	**2011**	**$12,850**	
	27.1	Complete the SR 1 Little Heaven Grade Separated Intersection	**2015**	**$59,123**	Arterials
	26.4	Complete the SR 1 and SR 9 Grade Separated Intersection at DAFB	**2010**	**$13,826**	Arterials
	23.2	Complete the SR 1 / Thompsonville Road Grade Separated Intersection (K 19)	**2014**	**$25,222**	Arterials
	23.2	Complete the SR 1 South Frederica Grade Separated Intersection (Cedar Neck Road K 120)	**2015**	**$25,000**	Arterials
	23.2	Complete the SR 1, North Frederica Grade Separated Intersection	**2012**	**$13,074**	Arterials
	29.0	Upgrade Barratts Chapel Road from SR 1 to Kersey Rd to include adequately wide travel lanes and shoulders and include bicycle, pedestrian and transit facilities as appropriate	**2020**	**$20,810**	Major Collector

				Year Completed By	Year Of Expenditure $ Amount	Road Classification
Capital Projects - Highways	Committed Projects	29.0	Improve Carter Road from Sunnyside Road to Wheatley's Pond Road (DE 300) to include adequately wide travel lanes and shoulders and pedestrian and bicycle facilities	**2020**	**$8,800**	Major Collector
		28.3	Upgrade Duck Creek Parkway from Bassett Street to Main Street in north Smyrna to include adequate travel lanes, shoulders, curbs, drainage, and bicycle and pedestrian improvements	**2020**	**$9,052**	Major Collector
		28.3	Construct the West Dover Connector	**2020**	**$42,665**	Minor Arterial
		25.1	Realign Wyoming Mill Road with the Village of Westover entrance and signalize	**2012**	**$1,500**	Major Collector
		28.3	Construct the Clarence Street Extension	**2020**	**$1,400**	Local
		29.0	Complete gateway improvements on Forest St, including a roundabout at the intersection of Loockerman Street and Forest Street	**2016**	**$5,327**	Minor Arterial
		27.2	Construct a grade separated intersection at SR 1 and NE Front St. in Milford	**2020**	**$30,000**	
	Recommended New Projects	37.0	**DE 8**: Construct recommendations from the DE 8 Concept and Operations Study	**2030**	**$37,986**	Minor Arterial
		37.0	- D8: Intersection Improvements: Left turn phasing at 4 intersections	**2030**		Minor Arterial
		37.0	- D8: Intersection Improvements: Access to the new High School site (Carey Farm), Calvary Church site	**2030**		Minor Arterial
		37.0	- D8: Intersection Improvements: Mifflin Road right turn and realignment of Brandywine Apts entrance	**2030**		Minor Arterial
		37.0	- D8: N/S Connector Road: Chestnut Hill Road to Rt 8	**2030**		Major Collector
		37.0	- D8: N/S Connector Road: Rt 8 to Hazletville Rd	**2030**		Major Collector
		37.0	- D8: N/S Connector Road: Connection above road to Artis Drive	**2030**		Major Collector
		37.0	- D8: Install Bicycle and pedestrian improvements including bike lanes, designated, controlled crossings with ped signals and an alternative shared use path	**2030**		Minor Arterial
		37.0	- D8: Connector Road behind Greentree Shopping Center between Independence Blvd and Kenton Road	**2030**		Local
		37.0	- D8: Realign intersection of Artis Drive with DE 8	**2030**		Local
		37.0	- D8: Interconnections to enhance Rt 8 Corridor Capacity Independence south of Rt 8 to Mifflin Road, Dove View to Modern Maturity, Heatherfields/Fox Hall West & Cranberry Run,	**2030**		Exempt
		37.0	- D8: Connector Road south of Gateway West to Commerce Way	**2030**		Local
		37.0	**NDS**: Implement the recommendations of the Concept Plan for US 13 and 113 in Dover	**2030**	**$39,391**	Minor Arterial
		37.0	- NDS: Construct a collector road between the Scarborough Rd. and US 13 to the East of Dover Mall and Dover Downs, to Leipsic Road (NDS is North Dover Study)	**2030**		Major Collector

			Year Completed By	Year Of Expenditure $ Amount	Road Classification
Capital Projects - Highways	Recommended New Projects	37.0	- NDS: Construct a collector between above and US 13 adjacent to Best Buy	**2030**		Major Collector
		37.0	- NDS: Realign Exit 104 toll plaza and access roads to accommodate above	**2030**		Other Freeway
		37.0	- NDS: Realign Leipsic Road and connect to US 13 at Jefferic Blvd. and to the Barry Van Lines site	**2030**		Major Collector
		37.0	- NDS: Construct Crawford Carroll Rd extension from behind Lowes to College Rd east of DSU	**2030**		Major Collector
		37.0	- NDS: Construct a local road between above and US 13 across from a realigned Dover Mall North entrance	**2030**		Major Collector
		34.7	Upgrade Kenton Road from DE 8 to Chestnut Grove Road in Dover with shoulders, sidewalks, bike and transit facilities and closed drainage	**2030**	**$20,858**	Minor Arterial
		33.2	Intersection Improvements to South State Street at SR 10 (Lebanon Road)	**2020**	**$593**	Minor Arterial
		33.2	Intersection Improvements to South State Street: Sorghum Mill Rd. to SR 10 (Lebanon Road)	**2020**	**$237**	Minor Arterial
		33.2	South State St. Intersection Improvements various intersections (8 total) between US 13 and SR 1	**2020**	**$1,521**	Minor Arterial
		32.4	Upgrade West Street from New Burton Road (Queen Street) to North Street in Dover to include adequate travel lanes, shoulders, curbs, drainage, and bicycle and pedestrian improvements	**2020**	**$1,431**	Major Collector
		32.4	Construct pedestrian improvements on US 13 from Duck Creek to the north Smyrna SR 1 interchange	**2030**	**$8,793**	Major Collector
		30.8	Upgrade Front Street corridor from Rehoboth Blvd to SR 1, Milford to include adequate travel lanes, shoulders, curbs, drainage, bicycle and pedestrian improvements and intersection improvements	**2030**	**$3,588**	Major Collector
		30.8	Construct /fill gaps in pedestrian improvements on US 13 in Smyrna	**2030**	**$14,185**	Minor Arterial
		30.7	Upgrade corridor of DE 14 from DE 15 to Church Street and from Washington Street to SR 1 with adequate lane width, shoulders, sidewalks and transit facilities	**2030**	**$28,396**	Minor Arterial
		30.7	Complete upgrade of DE 300 from railroad tracks to US 13 to include sidewalks, bicycle and transit facilities and intersection improvements at Carter Rd/DE 6 area	**2030**	**$20,739**	Major Collector
		30.7	Upgrade Irish Hill Road from SR 1 to US 13 to include adequate travel lanes, shoulders, and bicycle and pedestrian improvements	**2030**	**$86,025**	Major Collector
		30.7	Upgrade College Road from Salisbury to Kenton Road to include turn lanes where needed, shoulders, sidewalks or multi-use path, curbing and closed drainage	**2030**	**$4,289**	Minor Arterial
		29.1	Construct a connector road from White Oak Road to DE 8	**2015**	**$1,092**	Major Collector
			Estimated Total Cost		***$5,826,580***	

			Year Completed By	Year Of Expenditure $ Amount	Road Classification
Transit Projects		***Estimated Available Transit Project Funding***		***$49,530***	
	Transit Projects				
	New Projects	Expand fixed-route bus service	**2010**	*$2,987*	|
		Expand paratransit service	**2020**	*$2,434*	|
		Create/operate the Smyrna Shuttle	**2020**	*$2,156*	|
		Delaware Air Park - DRBA - Runway Extension	**2020**	*$1,249*	|
		Implement recommendations of Civil Air Terminals Studies	**2020**	*$128*	|
		Construct the Dover Transit Center at Water and West Streets	**2020**	*$11,699*	|
		Estimated Total Cost		***$20,653***	
Studies and Other Planning		***Estimated Available Planning Study Funding***		***$16,061***	
	Planning Studies				
	Studies	34.8 Develop a commercial corridor/modified corridor preservation concept for US 13 in Camden	**2010**	*$135*	|
		34.8 Develop commercial corridor concepts for US 113 in Milford, and DE 10 from US 113 to US 13	**2010**	*$301*	|
		33.1 Study the need to upgrade DE 14 west of DE 15	**2010**	*$81*	|
		32.5 Develop a Main Street concept plan for DE 42 in Cheswold	**2020**	*$59*	|
		30.8 Reassess feasibility study of implementing passenger rail service between Dover and Wilmington	**2020**	*$148*	|
		29.1 Study the need to upgrade DE 15 west of Wyoming in future annexation areas	**2020**	*$98*	|
		29.1 Study US 13 Alt. south of South Street in Camden to determine how to improve safety and traffic flow	**2020**	*$33*	|
		28.5 Study the need to bring Denneys Road in Dover to urban standards	**2020**	*$65*	|
		26.8 Study the need to upgrade Church Hill Road north of Milford between DE 14 and Road 119	**2020**	*$65*	|
		25 Monitor conditions on DE 8 between Forest Street and US 13 to determine the need for additional corridor and intersection improvements	**2020**	*$392*	|
		25 Study the transportation system south of Smyrna to determine required future transportation improvements	**2020**	*$196*	|
		25 Study where/how to make a new connection(s) between SR-1 and DE-12 outside of Frederica	**2020**	*$361*	|
		25 Develop an access management program to preserve capacity on key roadways serving regional travel needs such as DE 15, DE 12, DE 14	**2020**	*$541*	|
		24.5 Conduct walkable community workshops in the region's municipalities as a means to creating local bicycle and pedestrian plans and accomplishing ADA compliance	**2020**	*$115*	|
		23.3 Study ways to reduce congestion on SR 1 north of Dover	**2020**	*$80*	|

			Year Completed By	Year Of Expenditure $ Amount	Road Classification
Studies	22.8	Study access to employment and commercial areas of Milford	**2020**	*$199*	|
	22.7	Expand the Corridor Capacity Preservation Program to include DE 10	**2020**	*$159*	|
	21.1	Conduct site studies to determine the best locations for intermodal freight transfer facilities	**2020**	*$80*	|
	19.4	Study how pinchpoints on DE 15 west of Smyrna and Clayton can be improved to constitute a westerly bypass of those towns	**2020**	*$318*	|
	16.7	Study creating a truck route outside of/around the Milford historic district	**2020**	*$278*	|
		Estimated Total Cost		***$3,704***	

Part B: Unfunded Projects
Aspirations List

Aspirations List of Projects

Highway Projects

Capital Projects - Highways

Excluded New Projects (Aspiration List)

		Year Completed By	Year Of Expenditure $ Amount	Road Classification
29.1	Upgrade Sunnyside Road from DE 300 to US 13 in Smyrna to include adequate travel lanes, shoulders, curbs, drainage, and bicycle and pedestrian improvements	**>2030**	**$30,845**	Major Collector
29.1	Construct/fill gaps in pedestrian facilities on US 113 between Court Street and Lafferty Lane	**>2030**	**$5,774**	Minor Arterial
28.5	Upgrade N. Main Street in Smyrna to include adequate travel lanes, shoulders, curbs, drainage, and bicycle and pedestrian improvements	**>2030**	**$7,150**	Major Collector
28.5	Upgrade Joe Goldsborough Road from Duck Creek Road to US 13 to include adequate travel lanes, shoulders and bicycle and pedestrian facilities	**>2030**	**$2,240**	Major Collector
28.5	Upgrade Paddock Road from US 13 to SR 1 to include adequate travel lanes, shoulders and bicycle and pedestrian facilities	**>2030**	**$5,096**	Major Collector
27.3	Upgrade Messina Hill Road to improve safety and include adequate travel lanes, shoulders and bicycle and pedestrian facilities	**>2030**	**$4,480**	Major Collector
26.8	Upgrade Peachtree Run Road (from Voshells Mill Star Hill Road to Irish Hill Road) to include adequate travel lanes, shoulders, and bicycle and pedestrian improvements	**>2030**	**$12,300**	Major Collector
26.8	Upgrade New Burton Road from Westview Terrace to Wyoming town limit with turn lanes, where needed, adequate shoulders and bicycle and pedestrian facilities	**>2030**	**$11,200**	Major Collector
26.7	Construct/ fill gaps in pedestrian facilities on US 13 from Smyrna-Leipsic Road (K 12) to Duck Creek Road.	**>2030**	**$4,362**	Minor Arterial
26.4	South State Street Center left turn lane: SR 10 to SR 1	**>2030**	**$55,000**	Minor Arterial
26.3	Upgrade SR 36 west of US 113 to include pedestrian, bicycle and transit facilities and adequate travel lane and shoulder widths (in Milford)	**>2030**	**$28,000**	Major Collector
26.2	Upgrade the McKee Road/ Saulsbury Road/Morton Road corridor from Denneys Road to Lynnbury Woods Road with adequate lane width, shoulders, sidewalks and bicycle and transit facilities	**>2030**	**$10,200**	Major Collector
26.2	Upgrade DE 15 between DE 14 and US 13 and from DE 10A to DE 10 to include adequate lane width, shoulders, multi-use path and transit facilities.	**>2030**	**$39,300**	Minor Arterial
25.7	Upgrade DE 42 from Kenton to US 13 with adequate travel lanes and shoulders and bicycle and pedestrian facilities	**>2030**	**$21,056**	Major Collector
25.7	Upgrade corridor of Lynnbury Woods Road to include adequate travel lanes, shoulders, curbs, drainage, and bicycle and pedestrian improvements	**>2030**	**$5,600**	Minor Collector
25.1	Upgrade sections of Brenford Road not included in developer improvements to include adequate travel lanes, shoulders and bicycle and pedestrian facilities	**>2030**	**$200**	Minor Arterial

				Year Completed By	Year Of Expenditure $ Amount	Road Classification
Capital Projects - Highways	Excluded New Projects	25.1	Upgrade Walnut Shade Road from US 13 to S. State St. to include adequate travel lanes, shoulders, and bicycle and pedestrian improvements	**>2030**	**$8,000**	Major Collector
		25.0	Widen US 13 from Scarborough Road to South Smyrna SR 1 Interchange	**>2030**	**$112,000**	Minor Arterial
		24.6	Upgrade DE 15 west of Clayton and Smyrna (Vandyke Greenspring Road to DE 6) to include adequate travel lanes and shoulders and bicycle, pedestrian and transit facilities	**>2030**	**$6,900**	Major Collector
		24.5	Construct Bike and Pedestrian Improvements on Duck Creek Road from Main St to US 13 and from DE 6 to VanDyke Spring Road	**>2030**	**$550**	Major Collector
		254.5	Upgrade Carpenter Bridge Road from Frederica to DE 15 to include adequate lane width, shoulders, multi-use path and transit amenities	**>2030**	**$18,816**	Minor Arterial
		24.5	Upgrade DE 12 from SR 1 to US 13 with adequate lane width, shoulders, multi-use path and transit facilities	**>2030**	**$30,016**	Minor Arterial
		24.5	Construct/fill gaps in bicycle and pedestrian facilities on Hazlettville Road within the Dover city limits.	**>2030**	**$2,240**	Minor Arterial
		24.5	Construct a Bike route on S. State Street from Webbs Lane to SR 10	**>2030**	**$1,200**	Minor Arterial
		24.0	Construct/fill gaps in bicycle and pedestrian improvements on DE 10 between Bay Road (US 113) and DE 15 west of Wyoming	**>2030**	**$5,600**	Minor Arterial
		21.0	Construct grade-separated intersection at SR 1 and Barratts Chapel Road	**>2030**	**$30,000**	Principal Arterials
		20.6	Construct pedestrian improvements on Washington Street bridge in Milford	**>2030**	**$224**	Major Collector
		17.1	Upgrade Brick Store Landing Road from Paddock Road to SR 1 in Smyrna	**>2030**	**$3,696**	Major Collector
		17.0	Improve the intersection of Airport and Bowman Roads in Milford	**>2030**	**$900**	Major Collector
		14.9	Upgrade DE 6 between the Maryland state line and DE 300 with adequate travel lanes and shoulders.	**>2030**	**$7,900**	Local
Transit	Transit		**Transit Projects**			
			Implement Bus Rapid Transit/BRT recommendations through Kent County by creating a dedicated lane and intelligent signalling on existing ROW	**>2030**	*$0*	|
			Expand Rail service to Dover	**>2030**	*$0*	
			Planning Studies			
			Studies not specifically listed in the RTP	**>2030**	*$0*	|

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Appendix F: Summary of Public Outreach and Comments

Public Outreach

Public outreach for the Dover/Kent County Metropolitan Planning Organization's 2035 Long-Range Transportation Plan began in early 2008 when MPO staff partnered with Kent County government to present transportation data at public workshops for the county's comprehensive plan update. The information included travel modeling results and population/employment estimates.

MPO staff additionally spoke with workshop attendees about new concepts being developed for the RTP such as Complete Streets and Transit-Ready development. Since these workshops focused on the Comprehensive Plan, the MPO gathered no comments. Due to the contentious nature of other issues in the county's draft comprehensive plan, neither county nor MPO staff received any sustentative comments about the transportation system during the workshops.

MPO staff later in 2008 initiated media coverage and public presentations regarding the RTP to encourage people to lend their input to the plan.

In December 2008, MPO staff mailed letters to Kent County-area mayors to offer PowerPoint presentations describing the RTP, sent postcards to residents and businesses to invite them to a January 15, 2009 public workshop and created and released a television advertisement through Comcast cable on a number of channels. The television ad was narrated in English, with Spanish subtitles, as central Delaware has a sizeable Hispanic population. All information about the plan directed the public to the MPO's Web site, www.doverkentmpo.org.

Drafts of the RTP were placed on the MPO's Web site, hard copies of the plan went to Kent County area public and university libraries and media releases about the ad, workshop and availability of the RTP for public review went to local newspapers and radio networks such as the *The News Journal*, *Delaware State News*, *Dover Post*, *Clear Channel* and *DelawareTalkRadio.net*.

Examples of the mayors' letter and workshop invitation follow:

Dover/Kent County Metropolitan Planning Organization
P.O. Box 383, Dover, Delaware 19903 **(302) 760-2713 FAX: (302) 739-6340**
http://www.doverkentmpo.org

December 5, 2008

Hon. Harold H. Lane
Mayor of Woodside
POB 211
Woodside, DE 19980

Dear Mayor Lane:

Complete Streets, sustainable communities and transit-ready development.

Alone, these terms sound far removed from the average person. But in fact, they are concepts based upon historic development patterns that could shape the Dover and Kent County area toward easier mobility.

These progressive planning concepts are in the latest draft of the Dover/Kent County Metropolitan Planning Organization's Regional Transportation plan.

Thus far, the Dover/Kent County MPO has conducted an analysis of future transportation needs and compiled a list of projects.

Now, we're ready to take our plan on the road to share with municipalities and community organizations. We would be happy to make a presentation for you sometime in the first few weeks of January. The plan would take about 20 to 30 minutes to present.

The Regional Transportation Plan defines how the region's transportation system will develop over the next 20 years. This type of plan, which is updated every four years, is required by the U.S. Department of Transportation as a prerequisite for federal funding. It must be developed through a process that includes input from the public and private sectors and coordination with local and state plans.

Transit-ready development is a concept to develop communities that are more easily served by public transit. Sustainable communities is a concept that supports the sustainability of good quality of life for the area. Complete Streets, a new term, describes streets that are designed with all potential users in mind -- bicyclists, pedestrians, the disabled and transit.

If you are interested in a presentation, please contact us by telephone at (302) 760-2713 or e-mail at juanita.wieczoreck@state.de.us.

Sincerely,

Juanita S. Wieczoreck
Executive Director JSW:kls

Examples from the television commercial and the media release are also displayed:

Hello, folks. Would welcome any coverage you could give us on this. If you have any questions, give me a call at the office.

Thanks!

Wishing very happy holidays to everyone.

Kate Layton
Public Liaison
Dover/Kent County MPO
(302) 760-2712

Dover/Kent County Metropolitan Planning Organization
P.O. Box 383, Dover, Delaware 19903
(302) 760-2713 FAX: (302) 739-6340
http://www.doverkentmpo.org

MPO to air commercial on Comcast
30-second spot encourages participation in the agency's Regional Transportation Plan

DOVER – Comcast cable television customers may see a new ad on some of their favorite channels over the next few weeks.
From the end of December through January, the Dover/Kent County Metropolitan Planning Organization will challenge residents via a 30-second advertisement to tell the agency what they think about local transportation services.

The MPO developed the ad over the past few months, using colorful photos of various places around Dover and Kent County and cheerful music.
Narrated in English with Spanish subtitles, the commercial's message says:

"Growth brings congestion and a need for better transportation services.
The Dover/Kent County Metropolitan Planning Organization is updating its 20-year Regional Transportation Plan.
Funds are limited. We'll have to make tough choices.
Your comments are vital.
Be an agent of change. Lend your voice to the RTP.
Call (302) 760-2713 or visit doverkentmpo.org.
The Dover/Kent County MPO: Planning transportation for you, for me, for everyone."

A Regional Transportation Plan defines how an area's transportation system will develop over the next 20 years. Updated every four years, the RTP is required by the U.S. Department of Transportation as a prerequisite for federal funding.

This plan must be developed through a process that includes input from the public and private sectors and coordination with state and local comprehensive plans.
"We see this as an opportunity to get the word out that we are working on the plan and we want to know what people think about it," MPO Executive Director Juanita Wieczoreck said about the TV spot.

The ad is set to air Dec. 29, playing on CNN, Comedy Central, Bravo, Discovery, ESPN 2, Food Network, FX, History Channel, CNN Headline News and The Weather Channel.

Those who wish to read the RTP can go to www.doverkentmpo.org and find a link to the document on the main page. To comment on the plan, readers may e-mail MPO executive director Juanita Wieczoreck at juanita.wieczoreck@state.de.us, MPO planner Jim Galvin at jim.galvin@state.de.us or call the office at (302) 760-2713.

MPO staff presented the plan to the MPO Council and committees throughout 2008 and early 2009. Prior to each of these meetings, media releases and public notices with agendas were sent to electronic and print media outlets. Meetings were open to the public and advertised as such. Media releases and public notices are shown:

TO: Media outlets

FROM: Kate Layton, public liaison, Dover/Kent County MPO

DATE: 10/24/08

RE: Nov. 5 MPO Council meeting

The council of the Dover/Kent County Metropolitan Planning Organization will meet at 3 p.m. Nov. 5 in the MPO conference room, on the second floor of the Blue Hen Corporate Center, Dover.
Scott Muir of Norfolk Southern Railroad is scheduled to present an overview of the company's operations, infrastructure and needs.
MPO Executive Director Juanita Wieczoreck will present a draft of the MPO's Regional Transportation Plan Update, which includes a list of proposed transportation projects in Kent County.

An agenda for the meeting is enclosed.

KHL

Dover/Kent County Metropolitan Planning Organization
P.O. Box 383, Dover, Delaware 19903 (302) 760-2713 FAX: (302) 739-6340
http://www.doverkentmpo.org

TO: **Media Outlets**

FROM: **Kate Layton, Public Liaison, Dover/Kent County MPO**

DATE: **Nov. 26, 2008**

RE: **Next MPO, Technical Advisory Committee meeting**

Complete Streets, sustainable communities and transit-oriented development.
Alone, these terms sound far removed from the average person. But in fact, they are concepts Based on historic development patterns that could shape the Dover and Kent County area toward easier mobility.

These concepts are in the latest draft of the Dover/Kent County Metropolitan Planning Organization's Regional Transportatino plan. MPO staff will go over the RTP at the Dec. 10 Technical Advisory Committee meeting.

The Regional Transportation Plan, updated every four years, defines how the region's transportation system will develop over the next 20 years. The plan must be developed through process that includes input from the public and private sectors, be coordinated with local and state long-range transportation plans.

Transit-oriented development is a concept to develop communities that are more easily served y public transit. Sustainable development is a concept that supports the sustainability of good quality of life for the area. Complete Streets, a new term, describes streets that are designed with all potential users in mind -- bicyclists, pedestrians, the disabled and motor vehicles.
The latest RTP includes all these progressive planning ideas.

Also at the meeting, staff from the City of Dover will go over the latest draft of the city's comprehensive plan.

You are welcome to join us if you can!

What: Dover/Kent County Metropolitan Planning Organization's Technical Advisory Committee meeting.
When: 10 a.m. to noon, Dec. 10, 2008
Where: Blue Hen Corporate Center, Dover.
Suite 5 g.a. on the main floor of the corporate center.

Dover/Kent County Metropolitan Planning Organization

.O. Box 383, Dover, Delaware 19903 (302) 760-2713 FAX: (302) 739-6340
http://www.doverkentmpo.org

TO: **Media**

FROM: **Kate Layton, Public Liaison, Dover/Kent County MPO**

DATE: **Dec. 2, 2008**

RE: **Upcoming Public Advisory Committee meeting**

The Dover/Kent County Metropolitan Planning Organization's next Public Advisory Committee meeting will be held at 7 p.m. on Tuesday, Dec. 16 in one of the meeting rooms of the new Eden Hill Medical Center in Dover.

A presentation on DelDOT's South Governor's Avenue project is on the agenda, as well as a general description to the PAC of DelDOT's public outreach process. MPO staff also is scheduled to present a draft of the MPO's Regional Transportation Plan and a presentation of a public outreach plan.

Please publish notice of the attached agenda and plan to attend the meeting if you are able.

Eden Hill Medical Center is located at 200 Banning St., Dover, off West North Street near downtown.

Thanks!

Kate Layton
Public Liaison
Dover/Kent County MPO
(302) 760-2712

Dover/Kent County Metropolitan Planning Organization
P.O. Box 383, Dover, Delaware 19903
(302) 760-2713 FAX: (302) 739-6340
http://www.doverkentmpo.org

MPO hopes to take Regional Transportation Plan on the road

DOVER -- Complete Streets, sustainable communities and transit-ready development are progressive planning concepts that could shape the Dover and Kent County area toward easier mobility.

These concepts are in the latest draft of the Dover/Kent County Metropolitan Planning Organization's Regional Transportation plan.

The MPO has conducted an analysis of future transportation needs and compiled a list of projects. Now, the group is ready to take the list on the road to share with municipalities and community organizations.

"It's essential that we share our Regional Transportation Plan with the communities that it will serve," said MPO Executive Director Juanita Wieczoreck. "We want to be sure that we have identified the region's transportation needs and the priority projects to be funded with the limited resources available."

Staff hopes to present a draft of its Regional Transportation Plan to Kent County towns and cities within the first few weeks of January.

The Regional Transportation Plan defines how the region's transportation system will develop over the next 20 years. This type of plan, which is updated every four years, is required by the U.S. Department of Transportation as a prerequisite for federal funding. It must be developed through a process that includes input from the public and private sectors and coordination with local and state plans.

Transit-ready development is a concept to develop communities that are more easily served by public transit.

The Sustainable Communities concept supports the continuation of good quality of life.

Complete Streets, a new term, describes streets that are designed with all potential users -- bicyclists, pedestrians, the disabled and transit -- in mind.

Any municipality or community organization that is interested in a presentation may contact the Dover/Kent County MPO at (302) 760-2713 or by e-mail at juanita.wieczoreck@state.de.us.

Kate Layton
Public Liaison
Dover/Kent County MPO
(302) 760-2712

Dover/Kent County Metropolitan Planning Organization
P.O. Box 383, Dover, Delaware
(302) 760-2713 FAX: (302) 739-6340
http://www.doverkentmpo.org

Media Release

TO: Media Outlets

FROM: Kate Layton, public liaison, Dover/Kent County Metropolitan Planning Organization

DATE: 12/31/08

RE: Upcoming meetings

Special meetings, workshops ahead in January

DOVER -- The Dover/Kent County Metropolitan Planning Organization's Technical Advisory Committee (TAC) will hold a special meeting from 10 a.m. to noon on Wednesday, Jan. 14 in Suite 5 g.a. on the main floor of the Blue Hen Corporate Center. (The full meeting agenda is attached)
At this meeting, TAC members are scheduled to review and approve the MPO's draft Regional Transportation Plan. If the TAC approves the draft, the document next goes to the MPO Council, the MPO's policy-making body. At the same time, the draft is subject to public view.

A Regional Transportation Plan defines how the region's transportation system will develop over the next 20 years. This type of plan, which is updated every four years, is required by the U.S. Department of Transportation as a prerequisite for federal funding. It must be developed through a process that includes input from the public and private sectors and coordination with local and state plans.

The MPO will bring the draft plan to the public the day after the TAC meeting on Jan. 15. From 4 to 7 p.m., the MPO will hold a public workshop to present the draft plan. The workshop will be held in the public assembly room of the Dover Police Department.

All meetings of the Dover/Kent County Metropolitan Planning Organization are open to the public, which is encouraged to attend. The Regional Transportation Plan can be viewed on the MPO's website: http//www.doverkentmpo.org.

KHL

Dover/Kent County Metropolitan Planning Organization
P.O. Box 383, Dover, Delaware 19903
(302) 760-2713 FAX: (302) 739-6340
http://www.doverkentmpo.org

TO: Media Outlets

FROM: Kate Layton, public liaison, Dover/Kent County MPO

DATE: Jan. 13, 2009

RE: Special MPO Council Meeting

Dover/Kent County Metropolitan Planning Organization
Council to hold speical meeting

DOVER -- The Dover/Kent County Metropolitan Planning Organization's Council will hold a special meeting at 3 p.m. on Wednesday, Jan. 28 to vote on the MPO's recent draft of the Regional Transportation Plan.

The Regional Transportation Plan defines how the region's transportation system will develop over the next 20 years. This type of plan, which is updated every four years, is required by the U.S. Department of Transportation as a prerequisite for federal funding. It must be developed through a process that includes input from the public and private sectors and coordination with local and state plans.

The meeting will be held at the MPO conference room, Suite 210, on the second floor of the Blue Hen Corp. Ctr.,Dover.

Members of the public are invited to attend. The full agenda is attached.

MPO information is available on the Web at www.doverkentmpo.org

specialagendafy09.
doc (62 KB)

-30-

Hi, everyone, this is a reminder of our public workshop today from 4-7 p.m. regarding our Regional Transportation plan.

Dover/Kent County Metropolitan Planning Organization

P.O. Box 383, Dover, Delaware 19903

(302) 760-2713 FAX: (302) 739-6340

http://www.doverkentmpo.org

MPO to hold Regional Transportation Plan workshop

DOVER -- Complete Streets, sustainable communities and transit-ready development are progressive planning concepts that could shape the Dover and Kent County area toward easier mobility.

These concepts are in the latest draft of the Dover/Kent County Metropolitan Planning Organization's Regional Transportation plan.

The MPO will share information in the plan during a **public workshop from 4-7 p.m. today (Jan. 15) in the public assembly room of Dover Police Department.** The workshop will be held in an open house format.

The Regional Transportation Plan defines how the region's transportation system will develop over the next 20 years. This type of plan, which is updated every four years, is required by the U.S. Department of Transportation as a prerequisite for federal funding. It must be developed through a process that includes input from the public and private sectors and coordination with local and state plans.

Kate Layton

Public Liaison

Dover/Kent County MPO

(302) 760-2712

Offers for presentations yielded requests for presentations from Kent County, the City of Dover and the Kent County Association of Realtors. MPO staff made presentations to the Dover City Council Safety Advisory and Transportation Committee on December 1, 2008; Kent County Regional Planning Commission on January 14, 2009; Kent County Association of Realtors on January 15, 2009 and Kent County Levy Court on January 20, 2009.

At the January 15 public workshop, hard copies of an abbreviated version of the staff's PowerPoint presentation were made available to the public. Hardcopies of the plan also were available at the workshop. The event had few attendees and few comments.
Media outreach yielded a number of news articles and two radio interviews describing the plan and the invitation for public input. Radio interviews were with Phil Feliciangeli on January 8, 2009 which played on a number of Delaware *Clear Channel* stations. The second interview was with John Flaherty of *DelawareTalkRadio.com*, an Internet-based radio station. Other local radio stations also mentioned the RTP hearings in morning newscasts. Newspaper articles follow:

12/23/2008 The Dowr

State Capital

Transportation plan ready for viewing

DOVER — The Dover/Kent County Metropolitan Planning Organization has conducted an analysis of future transportation needs and compiled a list of projects. Now, the group is ready to take the list on the road to share with municipalities and community organizations.

The Regional Transportation Plan defines how the region's transportation system will develop over the next 20 years. This type of plan, which is updated every four years, is required by the U.S. Department of Transportation as a prerequisite for federal funding.

Any municipality or community organization that is interested in a presentation may contact the Dover/Kent County MPO at 760-2713 or by e-mail at juanita.wieczoreck@state.de.us.

Delaware State News, Tuesday, December 30, 2008

The Dowr

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The Dover Post, Wednesday, January 7, 2009 Page 3A

Regional transportation plan up for review

The Dover/Kent County Metropolitan Planning Organization's Technical Advisory Committee will hold a special meeting from 10 a.m. to noon Wednesday, Jan. 14, in Suite 5 on the main floor of the Blue Hen Corporate Center.

TAC members will review the MPO's draft Regional Transportation Plan. If the TAC approves it, the document will go to the MPO Council, the MPO's policy-making body.

A Regional Transportation Plan defines how the region's transportation system will develop over the next 20 years. The MPO will hold a public workshop from 4 to 7 p.m. Thursday, Jan. 15, in the public assembly room at the Dover Police Department.

The plan can be viewed on the MPO's website, www.doverkentmpo.org.

Delaware State News, Monday, January 26, 2009

MPO to vote on transportation plan

DOVER — The Dover/Kent County Metropolitan Planning Organization's Council will hold a special meeting at 3 p.m. on Wednesday to vote on the MPO's recent draft of the Regional Transportation Plan. The meeting will be held at the MPO conference room, Suite 210, on the second floor of the Blue Hen Corporate Center, Dover.

MPO information is available on the Web at www.doverkentmpo.org

To share news about the State Capital, call 674-3600 or e-mail newsroom@newszap.com.

Page 20B The Dover Post, Wednesday, January 21, 2009

Dover/Kent County MPO meet Jan. 28

The Dover/Kent County Metropolitan Planning Organization's Council will hold a special meeting at 3 p.m. Wednesday, Jan. 28, to vote on the MPO's recent draft of the Regional Transportation Plan.

The plan defines how the region's transportation system will develop over the next 20 years. Updated every four years, the plan is required by the U.S. Department of Transportation in order to receive federal funding.

The meeting will be held at the MPO conference room, Suite 210, on the second floor of the Blue Hen Corporate Center, Dover, and members of the public are invited to attend.

Additional information is available at www.doverkentmpo.org.

December 31, 2008
Section: Local
Edition: Final
Page: B2

Kent County transportation plan ready for review

JAMES MERRIWEATHER
Staff

By JAMES MERRIWEATHER

The News Journal

DOVER -- The Dover/Kent County Metropolitan Planning Organization has completed the draft of a four-year update of its Regional Transportation Plan and is looking to share the information with municipalities and community organizations.

The transportation plan -- which features 123 transportation projects worth hundreds of millions of dollars -- is intended to guide the development of Kent County's transportation system for a 20-year period. By federal edict, the plan must be updated every four years for the county to get federal subsidies for its transportation projects.

"It's essential that we share our Regional Transportation Plan with the communities that it will serve," MPO Executive Director Juanita Wieczoreck said. "We want to be sure that we have identified the region's transportation needs and the priority projects to be funded with the limited resources available."

Already, the MPO has scheduled presentations to the Kent County Regional Planning Commission for 7 p.m. Jan. 14 and Kent County Levy Court at 7 p.m. Jan. 20. The organization will sponsor its own community meeting from 4 to 7 p.m. Jan. 15 at Dover police headquarters.

Any local government or community organization that wants to host a presentation can call the MPO at 760-2713 or pass along an e-mail request by way of juanita.wieczoreck@ state.de.us. A copy of the draft plan and a list of priority projects are available at the MPO's Web site at www.doverkentmpo.org.

Next month, the organization will launch a TV campaign intended to let residents know they can pass along their ideas about local transportation services. A series of 30-second spots will air during January on CNN, CNN Headline News, Comedy Central, Bravo, Discovery, ESPN2, the Food Network, FX, the History Channel and The Weather Channel.

"We don't want residents to just attend community meetings," said Kate Layton, the MPO spokeswoman. "We also want them to go the Web site, read the plan and send us their comments. We want to know what they think."

Excluding 23 projects to be implemented on a statewide basis, MPO officials have assigned priority ratings to each of 100 Kent County projects based on criteria such as local economic benefits, environmental protection and safety.

No. 1 on the list is $38 million worth of improvements to Del. 8 between Dover's Loockerman Street and Artis Drive. Among other improvements, the elements include left-turn phasing at four intersections, intersection improvements at Mifflin Road and the selected site for a new Dover High School and four connector roads.

Another top priority is a $39.4 million plan for improvements recommended by a study of north Dover -- including a collector road beginning at Scarborough Road and U.S. 13 and running behind Dover Mall and Dover Downs southward to Leipsic Road.

Among 123 projects listed as priorities, only 13 are slated for completion before 2020.

For purposes of the transportation plan, no priorities were assigned to the list of general, statewide transportation needs. The big ticket of $290 million is for the cost of expanded bus service and new rail service that would be implemented by 2030.

As he collected comments recently from constituents on how the state might weather the current financial crisis, Gov.-elect Jack Markell questioned whether the state would ever be able to afford train service -- given the ever-expanding backlog of more urgent transportation needs. A questioner had suggested that rail service connecting Wilmington and Dover would provide an economic boost while improving the quality of life for the state's residents.

"We have expenses that grow with inflation and revenues that don't," Markell observed in his response. "That's just a fact of DelDOT's life."

Contact James Merriweather at 678-4273 or jmerriweather@delawareonline.com.

GET INVOLVED:

The Dover/Kent County Metropolitan Planning Organization will hold a community meeting to present the Regional Transportation Plan update from 4 to 7 p.m. Jan. 15 at Dover police headquarters.

Any local government or community organization that wants to host a presentation can call the MPO at 760-2713 or e-mail juanita.wieczoreck@state.de.us.

A copy of the draft plan and a list of priority projects are available at the MPO's Web site, www.doverkentmpo.org.

delawareonline

January 2, 2009

Dover/Kent planners make sure the public knows what's coming

Even if you find long-range government planning as boring as watching grass grow, the folks behind the Dover/Kent County Metropolitan Planning Organization have set a shining example of how to make sure the public is involved in its plans.

The MPO recently completed a draft of a four-year update to the Regional Transportation Plan that includes some 123 projects that could build out by 2030. The projects combined are worth hundreds of million of dollars and obviously will affect tens of thousands of local residents.

To get the word out about the projects – some of which might never be built – the MPO has developed a wide range of media and other outlets to dispense information and take feedback from the public. It's a model to ensure public input that virtually any government-sanctioned organization would do well to emulate.

Said Juanita Wieczoreck, executive director of MPO: "It's essential that we share our Regional Transportation Plan with the communities that it will serve. We want to be sure that we have identified the region's transportation needs and the priority projects to be funded with the limited resources."

Formally required presentations are already scheduled with the Kent County Regional Planning Commission on Jan. 14 and Kent County Levy Court on Jan. 20.

But what really shows MPO's commitment to full public disclosure is its use of other and somewhat unconventional outlets.

Any local organization can host a presentation by simply calling MPO. As many project drafts as needed will be supplied.

The group also plans to start a TV campaign with a series of 30-second spots this month. They will appear on CNN, Comedy Central, Bravo, ESPN2 and The Weather Channel, among others.

High on the priority list are projects including
$38 million in renovations to Del. 8 between Loockerman Street and Artis Drive in Dover and recommendations for improvements in the North Dover area beginning at Scarborough Road. It would include a new road to run behind Dover Mall and Dover Downs to Leipsic Road.

There are few government responsibilities that get more public attention than roads and transportation. That MPO is giving the public such open notification of its plans is what a good democracy is all about.

delawareonline

Del. scans 'shovel-ready' road plans

Federal stimulus funding may get some rolling

BY JAMES MERRIWEATHER • THE NEWS JOURNAL • JANUARY 8, 2009

DOVER – With millions of dollars in federal stimulus money at stake, the rush is on to identify Delaware road projects that could be made construction-ready within 180 days.

Transportation Secretary Carolann Wicks said Wednesday that such projects would have to be among the 30 percent of Delaware's identified road needs that qualify for federal funding – a limitation aggravated by the fact that Delaware moves projects to "shovel-ready" status only after funding is salted away.

Since the stimulus program would be aimed at jolting the economy with an infusion of new money for infrastructure, projects that already are funded are not likely to qualify, she said. Most projects that require negotiating for rights-of-way also can be ruled out, Wicks added, given the six-month window of opportunity expected to come with the stimulus package.

"The challenge for us is we don't have projects just sitting around," she told the governing body of the Dover/Kent County Metropolitan Planning Organization.

Her remarks came in response to a question from Camden Mayor Robert A. Mooney, who asked if the **Department of** Transportation harbored any "guesstimate of shovel-ready projects that might be ready to be started tomorrow" for purposes of the stimulus program.

Wicks is president of the National Association of State Transportation Officials, which is party to an effort to shape a federal stimulus package of about $775 billion worth of public works projects. A day earlier, Wicks, the state's transportation czar since 2006, accepted an invitation from Gov.-elect Jack Markell to stay on as DelDOT secretary.

Delaware is at a disadvantage because it picks up 90 percent of the state's transportation load, including the cost of city streets, county roads and bus service that are picked up by local governments in most other states. Other states that pay only for bridges and "high-end" projects that qualify for federal money may be able to just pass along projects to the stimulus program from the top of their federal wish lists.

Wicks was invited to the Wednesday meeting to share a Transportation Trust Fund balance sheet that grows bleaker with each passing month.

In June, the Delaware Economic and Financial Advisory Council, the state's official revenue-forecasting arm, projected that trust-fund revenues would total $468.8 million during the year that began July 1. By December, the estimate had dropped by $24.6 million -- or 5.2 percent -- to $444.2 million.

The big hit was a 15.7 percent decrease in motor vehicle document fees, reflecting the nationwide downturn in auto sales. Short of a car-buying frenzy, Wicks said, she's hard-pressed to identify new revenue sources to head off the need to push back even more road projects.

"There isn't any new money out there," she said. "It's just a question of how we keep working through it."

Richard Ornauer of Dover, a member of the MPO Council, called for an oft-recommended avenue to reserving more money for road projects.He would transfer DelDOT's operating expenses from the trust fund -- financed largely with tolls, motor fuel taxes and motor vehicle document and registration fees -- to the state's general revenue budget.

"Something has to give," Wicks responded, adding that she could see the pros and cons of both Ornauer's position and maintaining the status quo.

Transportation plan up for public comment

By Doug Denison, Staff Writer
Dover Post
Tue Jan 13, 2009, 02:24 PM EST

Dover, Del. -

In the coming weeks, Kent County residents will have the opportunity to comment on the latest plan to manage traffic and transit in the region.

The Dover/Kent Metropolitan Planning Organization is in the process of drafting its 30-year Regional Transportation Plan, which prioritizes road projects and analyzes changing needs and transportation trends in the area.

Presentations are scheduled at upcoming Kent County Regional Planning Commission and Levy Court meetings on Jan. 14 and 20, respectively.

Juanita Wieczoreck, executive director of the Dover/Kent MPO, said she welcomes public input on the plan, which serves as an important catalogue for transportation projects.

If a project isn't in the plan, it can't receive funding from the Delaware Department of Transportation and move forward, Wieczoreck said.

The Dover/Kent MPO is one of three such organizations in the state, and was founded in 1992.

"The main thing we do is establish priorities in terms of what we need for the region, and then work with DelDOT and the local governments to get those needs met," Wieczoreck said at a meeting of the Dover/Kent MPO Council Jan. 7.

Those priorities, she said, take shape according to a set of underlying principles that guide the formulation of the plan.

The MPO first considers maintaining and upgrading the current infrastructure, then expanding to include other forms of transit like bikes, pedestrians and buses, and finally expanding the highway system.

Wieczoreck said highway expansion is last of the list for a reason.

"Studies have shown building new highway capacity is the really the least sustainable kind of transportation improvement you can make," she said. "Because you fill that one up, you need another one, then you fill that one up and need another one, that's why it's always the last choice."

The MPO applies these planning principles to its list of projects to come up with a ranking that prioritizes transportation projects, which can come from DelDOT research, municipal and legislator recommendations,

even concerned citizens.

"Projects that are considered for inclusion in the RTP are prioritized using a numeric scoring system to reflect qualitative ratings based on transportation system data," Kate Layton, spokeswoman for the Dover/Kent MPO said in an email. "Scoring criteria is based on the goals of the RTP: to strengthen the local economy; improve the quality of life; support desired land use and effective growth management; improve access and mobility while ensuring the safety of all citizens; and safely and efficiently transport people and goods."

Currently, top priority projects include improvements to the Route 13/Route 8 and South State Street/Lebanon Road intersections in Dover and the intersection of Route 13 and Walnut Shade Road in Woodside. But even though these projects earned high scores, their timelines stretch as far out as 2030.

The Dover/Kent MPO Council, a governing body made up of representatives from municipal governments, the community and DelDOT, has final say on the prioritized list, but it rarely rejects projects, Wieczoreck wrote in an email.

"We have not rejected any projects in this plan due to lack of Council support," she wrote. "In past years, large expansion projects, such as widening [Route] 8 to four lanes from Dover to the Maryland state line have not been included because they did not have enough support."

The main reason projects do not make it into the plan is finances, she added.

And according to DelDOT Secretary Carolann Wicks, state money for transportation projects is tight and getting tighter.

Wicks told the Dover/Kent MPO Council Jan. 7 that DelDOT revenue projections for fiscal year 2009 are down by more than $24 million, mostly because of a sharp drop in the take from tolls and vehicle registration fees.

This could put many of the plan's projects with high priorities and long timelines in jeopardy.

"If funding decreases to the level predicted by DelDOT ... then very few of the projects in the plan beyond the first four years will be able to actually be implemented," Wieczoreck wrote in an email.

Email Doug Denison at doug.denison@doverpost.com

Levy Court questions criteria used to determine road improvements

By Melissa Steele, Staff Writer
Dover Post
Thu Jan 22, 2009, 10:25 AM EST

Dover, Del. -

A presentation by the Dover/Kent Metropolitan Planning Organization on its latest transportation plan segued into a discussion of how road projects should be prioritized at the Jan. 20 Levy Court meeting.

The MPO is a group that works with the Department of Transportation and local governments to prioritize road improvements. Projects are ineligible for federal money unless they are listed in the plan.

One of the listed projects is a new connector running from behind Delaware State University to Delaware Technical & Community College and branching off to cross Route 13 at the Dover Mall. A service road running between the mall and Dover Downs Hotel & Casino and then following Route 1 could relieve some of the congestion along Route 13, said Juanita Wieczoreck, executive director of the Dover/Kent MPO.

"The more alternate routes you have, the more you pull people off the major routes," she said.

During the presentation, the discussion turned to what factors are considered before a road is tagged for improvement. Wieczoreck said the MPO plan uses DelDOT road usage statistics based on the number of cars traveling along a roadway to determine whether a road is in need of improvement.

But both Commissioners Eric L. Buckson and Allan F. Angel had problems with that process of assessing road improvements because it does not take into consideration road safety.

In particular, both commissioners have expressed unease for several months over the intersection of Autumn Moon and Millchop lanes near Magnolia. The intersection was the source of concern during the approval of a nearby development in August and since then has been the scene of at least two recent accidents — the latest taking the life of a 17-year-old girl.

Despite that, the road is not considered for improvements because it has not reached the level of service that would require it, according to DelDOT standards, Buckson said.

"My goal is to lessen [the reliance on] level of service in unincorporated areas," he said.

Though not part of the Dover/Kent MPO purview, Wieczoreck said it is an issue other areas are considering.

"Many states are struggling with what the alternative should be," she said. "How do you truly define what indicator should be used for roadways."

County Administrator Michael Petit de Mange said he does not expect DelDOT to change the way it goes about road improvements but safety should be considered.

"Level of service will continue to have a role but it's a quantitative not a qualitative analysis," he said. "There are safety issues that level of service doesn't address."

County road improvement criteria questioned

By Melissa Steele, Staff Writer
Dover Post
Tue Jan 27, 2009, 01:43 PM EST

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Email Melissa Steele at melissa.steele@doverpost.com

Regional Transportation Plan passes amid concerns for bike travel

By Doug Denison, Staff Writer
Dover Post
Fri Jan 30, 2009, 12:49 PM EST

Dover, Del. -

The Dover Kent Metropolitan Planning Organization approved its updated Regional Transportation Plan Jan. 28, but not without considering some public criticism of the plan, especially its treatment of bike routes throughout the area.

The plan is a long-term planning document that catalogs and prioritizes road and transit projects, calculates their costs and projects the environmental impact transportation will have on the region in the future.

In a summary of comments received during a month-long public review period, MPO staff outlined citizen concerns related to bike paths, traffic signals and passenger rail service.

The most substantial of the comments, however, indicated displeasure with how the updated plan characterized the availability and usefulness of established bicycle-friendly travel routes in the county.

"The MPO should make mention of problematic areas for bicycle use and emphasize that small, hazardous gaps along bike routes make the entire route unacceptable for bicyclists, specifically in cases of U.S. 13 and Bay Road, which have heavy traffic and no bike paths," read one entry in the comments summary.

Area cyclists have complained about the lack of continuity in dedicated bike lanes along major roads, especially at busy intersections.

MPO Executive Director Juanita Wieczoreck responded to the criticism at a meeting of the MPO Council Jan. 28. The council, which voted to approve the plan, is made up of representatives from local governments, the Delaware Department of Transportation and the community.

"We agree that Routes 13 and 113 do pose significant barriers for people riding from one side to another," Wieczoreck said. "We're getting more bike paths, but that volume of traffic is daunting."

Another citizen comment asked the MPO to complete a regional bike plan by January 2010, and to "insist that bike and pedestrian projects be funded separately from auto projects and built every year."

Wieczoreck said she's not opposed to including stronger language on the importance of well-planned and continuous bike routes, but cautioned against adding rules that would make it more difficult to complete road projects.

MPO council member and DelDOT Planning Director Ralph Reeb said at the meeting that updating the MPO's bike plan by the end of 2010 is a reasonable idea.

"We do welcome the interest," he said. "We do have a bicycle plan, but I think it's time to refresh it."

Camden Mayor Robert Mooney agreed with public comments that cited unsafe conditions for bikers at major intersections, especially in right-hand turn lanes. He asked Reeb if DelDOT has any means to erect physical barriers that would prevent vehicles from crossing into bike lanes and protect cyclists from cars making right-hand turns.

Reeb said that DelDOT has developed no plans for barriers, and that a combination of painted lines and "Share the Road" signs are the primary means for reminding drivers to watch out for cyclists.

Another comment urged the MPO to add plans for passenger rail service that would serve Kent County, but Wieczoreck said such an addition would not be feasible.

"Passenger rail service can't be included in the plan because there's no funding for it," she told the council at the meeting.

Federal regulations governing regional transportation plans require final drafts to include realistic funding provisions that cover their lists of projects. If no such funding is expected to be available for a project from state or local sources, it can't be listed in the plan.

Conversely, transportation projects only can be initiated if they are listed in the plan.

Now that the MPO has approved the plan, it will be submitted to the Federal Highway Administration and the Environmental Protection Agency for a final review.

After those agencies lend their seals of approval, Reeb said the plan and the MPO's list of transportation improvement projects can be amended should additional federal stimulus funds for infrastructure become available.

Brad Eaby, member of the MPO council and Kent County Levy Court commissioner, said that by March the council will have an updated list of projects that can be expedited if funding materializes.

Transportation Plan passes despite cyclists' concerns

By Doug Denison, Staff Writer
Dover Post
Tue Feb 03, 2009, 03:01 PM EST

Dover, Del. -

The Dover Kent Metropolitan Planning Organization approved its updated Regional Transportation Plan Jan. 28, but not without considering some public criticism of the plan, especially its treatment of bike routes throughout the area.

The plan is a long-term planning document that catalogs and prioritizes road and transit projects, calculates their costs and projects the environmental impact transportation will have on the region in the future.

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Brad Eaby, member of the MPO council and Kent County Levy Court commissioner, said that by March the council will have an updated list of projects that can be expedited if funding materializes.

Email Doug Denison at doug.denison@doverpost.com

As a result of the public outreach, the MPO received several comments via e-mail, telephone and in-person conversations. Comments and responses are summarized in the following table:

• Include roundabout in the list of calming devices in the city of Dover on item 3.4.3 on pages 30-31.	• A roundabout is not considered the type of traffic calming device that facilitates pedestrian access since it moves the pedestrian farther from the intersection and is designed to keep traffic moving, reducing gaps during which a pedestrian can cross the street
• Although private, list the Bayhealth Medical Centers heliports with those listed in 3.6 on pages 3-36-37.	• The MPO Council determined that the Plan should only list public heliports.
• Spell out TAZ the first time on 4.17.2 on pages 4-19-20.	• The MPO will double check all acronyms and abbreviations to ensure that they are defined the first time that they are used.
• On 5-11, the MPO advocates more interchanges on SR 1, and on 5.2.2, it presses for reduction of intersections for Corridor Preservation. Looks like a conflict to me.	• The MPO's advocacy of additional "interchanges" on SR 1 refers only to those intersections that the Corridor Capacity Preservation Program has identified needing to be reconstructed as grade-separated intersections.
• When will the improved traffic control signals on 5-13 work properly? Signals on Division Street offer left turn priority at each intersection even if no driver wishes to turn left. Unnecessary delay.	• The Department of Transportation was contacted regarding this problem and said that the signals had been adjusted to prevent activation of the left turn signal if when there are no vehicles present that want to turn left.
• Repeat need for passenger rail service on 5.2.3 page 5-16.	• Passenger rail service is supported by the MPO Council and committees, however adequate funding is not anticipated to be available for this improvement by 2030. Consequently, it is not included in the Plan recommendations.

• Shouldn't the MPO advocate removal of DelDOT operational costs from the Trust Fund on 6.1.2 on page 6.6? It would free up millions of dollars for transportation projects.	• The MPO Council determined that recommendations regarding how the State administers the Trust fund are not appropriate for inclusion in the RTP.
• MPO should look into securing a direct bus route between Harrington and Milford. Currently, riders must take bus from Harrington to Dover and then transfer to a Milford bus. Trip lasts two hours instead of fraction of time could spend on direct route.	• During FY 2010, the MPO plans to assist DART First State with a ridership survey that will determine where additional transit service may be feasible within the MPO region.
Bicycle paths: • MPO should emphasize limitations and hazards to bike travel and insist that specific actions be taken to relieve them, specifically regarding lack of bike paths at bridge crossings and limited east-west travel options in Dover due to railroad crossings and heavy traffic. • The MPO should make mention of problematic areas for bicycle use and emphasize that small, hazardous gaps along bike routes make the entire route unacceptable for bicyclists, specifically in casers of U.S. 13 and Bay Road which have heavy traffic and no bike paths. • MPO should point out that DelDOT's established bike corridors are completely unrealistic when passing through the cities and are therefore useless, specifically in reference to Del. 8 and State Street, streets that are narrow and have heavy traffic or on-street parking and will never have bike lanes. MPO also should ask DelDOT why it publishes maps of designated	• The MPO has made a commitment to completing a regional bicycle plan during FY 2010. In addition, the MPO will be working with the Department of Transportation to review bicycle and pedestrian facility policies with regard to ensuring accommodation of all modes within constrained rights-of-way. In addition, the MPO reviewed the language of the bicycle section of the plan and ensured that the language is clear with regard to the sufficiency of the existing system.

bike routes that do not help cyclists looking for safe routes to their destinations. • Asked for a regional bike plan to be completed by January 2010 with annual prioritization updates and for the MPO to insist that bike and pedestrian projects be funded separately from auto projects and built every year. • Generally said the language of the MPO plan gives false impression of sufficient bicycle transportation facilities.	
Milford Bypass project: Four people wrote via e-mail to the MPO regarding a proposed overpass at Del. 1 and Thompsonville Road near Milford. All the comments adamantly supported the overpass, citing traffic, especially from visitors to and from the beach, as well as increased risk of crashes at the highway intersection.	