

5. Transportation Strategies and Actions: 2013– 2040

Chapter 5 discusses the fundamental strategies that form the framework around which the Metropolitan 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 MTP Framework

5.1.1 Fundamental Strategies

There are five fundamental strategies that form the framework of the MTP. 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 MTP. 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 the Dover/Kent County MPO region.

These strategies concur with the *Strategies for State Policies and Spending* which describes guidelines regarding the general types of investments to be made in different areas of the County as a whole. These strategies support the vision of this MTP update and the MTP supports the strategies. These initiatives guide growth into areas that are prepared for infrastructure investments and are represented in Comprehensive Plans.

Each of the five fundamental strategies is briefly discussed below and then in detail as components of plans and guidance, including associated actions. The actions to meet the strategies that guide the MTP are identified below.

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 should be maintained to operate at the same functional level in 2040 as in the present. A reduction in the network's operating capacity should be prevented. Maintenance must also occur to ensure the safe movement of goods and people. By guiding development, managing access, and taking active steps to preserve the existing transportation system, investments that have already been made can largely be maintained.

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 in growth areas**

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, which in turn prevents adverse social and environmental impacts and allows limited funding resources to be used towards the management of the existing system.

Fundamental Strategy 3: Develop and Expand Other Modes of Transportation

Providing transportation options in addition to 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 MTP, but is a necessary part of producing and maintaining a sustainable transportation system. The emphasis for new roads should continue to be in Level 1 and Level 2 areas on the *State Strategies for Policies and Spending* map. Providing for additional roadway capacity includes complementary facilities for walking, bicycling, and transit.

Fundamental Strategy 5: Focus Transportation Investments

The first four transportation strategies 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. These 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 in the 2008 *Comprehensive Plan*, which encompasses an area where 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 also an area that Kent County identified where infrastructure such as water, sewer, and transportation facilities existed or were planned to serve development. The Growth Zone boundary, the geographic area of the district, was integrated into the *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 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.

Kent County is currently not developing an update to the *Comprehensive Plan*. The State regulations indicate that a Comprehensive Plan must be reviewed every 5 years. The Kent County *Comprehensive Plan* will be reviewed by November 2013, and it is currently valid until 2018. The MPO anticipates that many of the policies introduced in their 2008 plan will be retained in their next *Comprehensive Plan* update.

Transportation Improvement Districts

Most recently, Kent County developed Transportation Improvement Districts (TIDs) as part of the *Comprehensive Plan*. 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. There is a more detailed description of TID's in **Chapter 5.2.5** of the MTP.

5.1.3 Strategies for State Policies and Spending

As discussed in Chapter 1, the *Strategies for State Policies and Spending*, identifies 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.

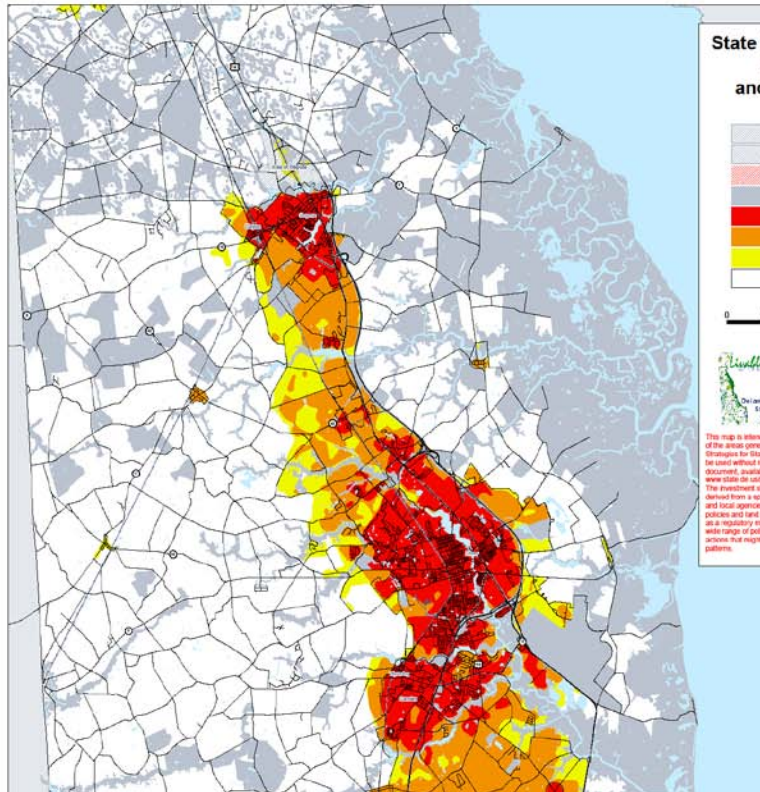
5.1.3.1 Level 1 Investment Area and Transportation Strategies

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: Level 1 Investment 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. 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.

Exhibit 5.1: State Strategies for Policy and Spending



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, water and sewer systems, schools, commercial and industrial buildings, and houses.

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 Hartly and Farmington. Intensely developed areas in and around Dover, Milford, and Smyrna function in a similar manner. These Level 1 Areas drive Delaware’s economic engine.

The state’s goals clearly recognize the value of these 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.

Level 1 Transportation Strategies

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

- Provide the greatest number of transportation options, emphasizing public transportation, walking, and bicycling.
- 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/redevelopment efforts, and encourage community connections.

5.1.3.2 Level 2 Investment Area and Transportation Strategies

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 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.

Level 2 Transportation Strategies

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

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 Level 1 or 2 designations on the state's strategy map. In Kent County they mostly include areas outside 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 wastewater system pumping stations. There are also areas designated as Level 3 in the region where there are environmentally-sensitive features, agricultural preservation lands, 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.

Level 3 Transportation Strategies

The following transportation strategies correspond with the characteristics of a Level 3 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 Level 1 and 2 areas.

5.1.3.4. Level 4 Investment Area and Transportation Strategies

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 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.

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 Level 4 Areas.

Some limited institutional uses may exist in such areas. Delaware's 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 Level 4 Areas also include many unincorporated communities, typically with their own distinctive character and identity. These places reflect the rich rural heritage of the state. Level 4 Areas depend on a transportation system of primarily secondary roads linked to roadways used as regional thoroughfares for commuting and trucking.

Level 4 Transportation Strategies

The following transportation strategies correspond with the characteristics of a Level 4 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.

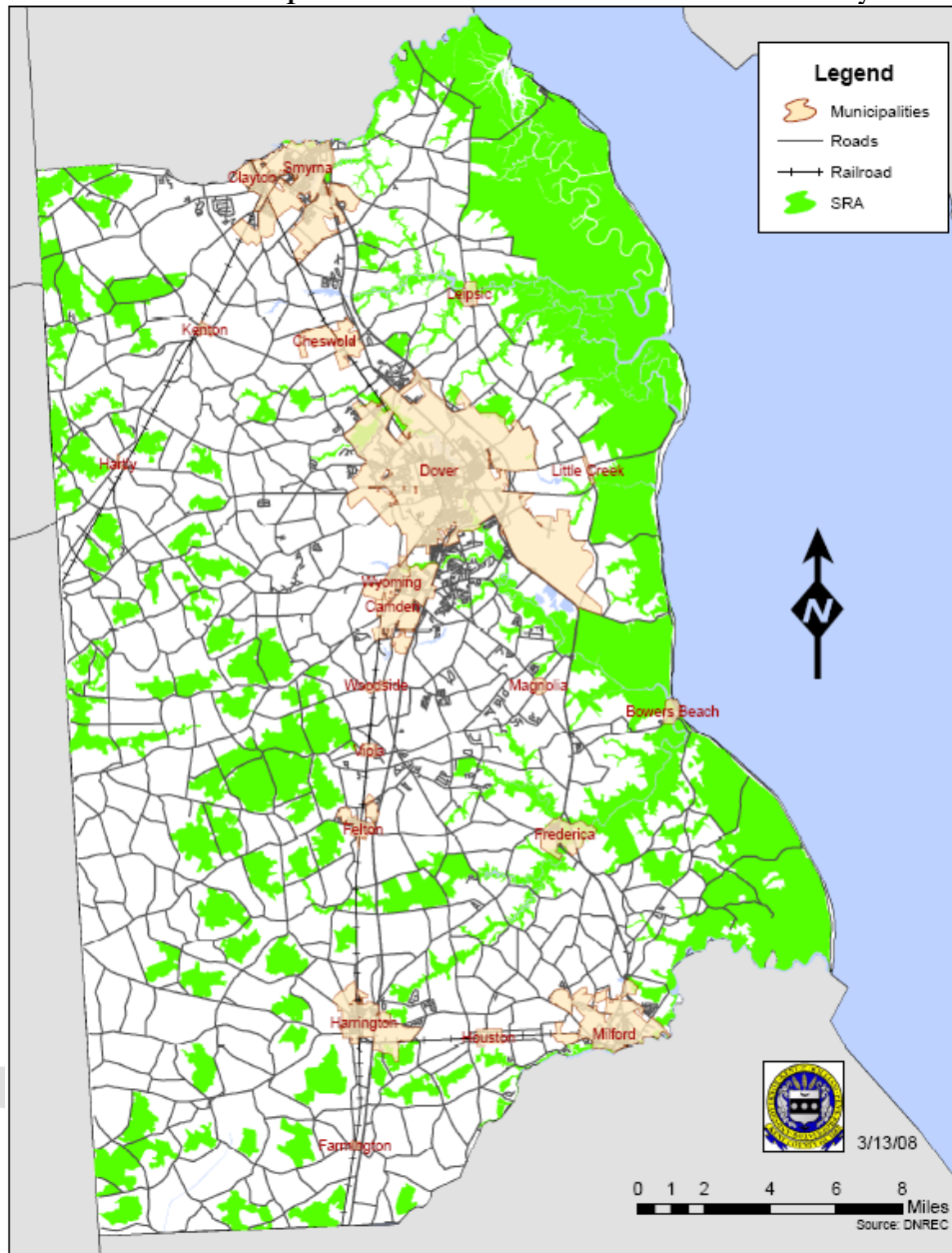
5.1.4 Comparison with other state agency plans

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.

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
- unified public and private stakeholders

support an economy that fosters and maintains a diverse set of industries, providing residents with quality jobs.”¹

The Kent County Action Plan continues with a series of goals, objectives, and recommendations that support these areas. Of most relevance to this MTP 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 (DAFB) and its supporting businesses to protect and support its mission.

These recommendations have been considered with the goals and projects embodied within the MTP 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:

- 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.

¹ Delaware CEDS: Comprehensive Economic Development Strategy for the State of Delaware, Final CEDS Summary, August 2006, page 16.

- 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. Route 1 south of Dover Air Force Base will need additional interchanges to facilitate traffic flow to employers located within the central corridor and relieve traffic on U.S. Route 13.
- The closest commercial air access is 60 minutes from Dover, in 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 Route 1, toward the goal of creating a totally limited-access highway. The second commitment is upgrading the runway at the Delaware Air Park. Environmental studies are currently being conducted at the Air Cargo Ramp (former Civil Air Terminal), towards the goal of providing additional commercial air service facilities in Kent County.

5.1.4.4 Federal Initiatives

MAP 21

On July 6, 2012, President Obama signed into law the Moving Ahead for Progress in the 21st Century Act (MAP-21), the first long-term transportation bill since 2005. MAP-21 provides \$105 billion in funding for surface transportation for FY 2013 and 2014. According to the FHWA, "MAP-21 creates a streamlined and performance-based transportation program that builds upon the highway, bike, pedestrian, and transit programs established in 1991."

The key focus points of the MAP-21 legislation are listed below:

- Strengthen the National Highway System (NHS)
- Establish a performance-based program
- Create jobs and support economic growth
- Support an aggressive safety agenda
- Streamline the Federal highway programs
- Accelerate project delivery and promote innovation

MAP-21 will play a key role in transportation planning, project selection, environmental permitting and documentation, project delivery, and funding over the next two fiscal years. As of October 2012, DelDOT has begun to implement the requirements of the new legislation, in consultation with the MPO and FHWA.

Performance Measures

As indicated by the FHWA, “the cornerstone of MAP-21’s highway program transformation is the transition to a performance and outcome-based program. States will invest resources in projects to achieve individual targets that collectively will make progress toward national goals.”

MAP-21 establishes specific national performance goals for Federal highway programs, as listed below:

- Safety – to achieve a significant reduction in traffic fatalities and serious injuries on all public roads
- Infrastructure condition – to maintain the highway infrastructure asset system in a state of good repair
- Congestion reduction – to achieve a significant reduction in congestion on the NHS
- System reliability – to improve the efficiency of the surface transportation system
- Freight movement and economic vitality – to improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
- Environmental sustainability – to enhance the performance of the transportation system while protecting and enhancing the natural environment
- Reduce project delivery delays – to reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies’ work practices.

The FHWA, in consultation with DelDOT and other stakeholders, will establish performance measures for transportation conditions and performance on the Interstate and National Highway Systems. The State will report to the FHWA on progress in achieving the targets established in the performance measures. If there is inadequate progress towards reaching the targets, the State must detail specific corrective actions, or funding will be dedicated solely to addressing the deficient areas.

Additional details, including a Federal Final Rule, are anticipated to be completed in FY 2014, with implementation of performance-based measures occurring in FY 2015.

DelDOT has recently added the “DelDOT Dashboard” to its web site. This feature provides a list of conditions related to a variety of DelDOT functions, including pavement condition, bridge ratings, customer satisfaction, performance measures, and transportation safety. In addition, the *Statewide Long-Range Transportation Plan* (2010) provides a list of potential performance measures, as noted in **Exhibit 5.3**.

Climate Change

The State of Delaware recognizes that climate change is a component that needs to be considered and addressed in its transportation planning efforts over the next 25 years. According to the FHWA report *Integrating Climate Change into the Transportation Planning Process*, “there is general scientific consensus that the earth is experiencing a long-term warming trend and that human-induced increases in atmospheric greenhouse gases may be the predominant cause.” From a transportation perspective, transportation’s contribution to climate change is through the greenhouse gases emitted from motor vehicles.

The State, led by DNREC, has recently convened a Transportation Focus Group, to determine the potential impacts of sea level rise on Delaware’s transportation network. DNREC has also published a report entitled *Sea Level Rise Vulnerability Assessment*, which documents agency coordination, planning tools, funding mechanisms, and regulatory assistance that may be required to address sea level rise related to climate change.

It is anticipated that the impacts resulting from climate change will play a significant role in transportation planning, project prioritization, and funding allocation in the horizon covered by the MTP. The *Statewide Long Range Transportation Plan* (2010) notes that “the impacts of global climate change with respect to policy, the environmental, and economics and those challenges to the transportation sector” should be studied in greater detail over the next 20 years.

Exhibit 5.3: Potential Performance Measures

Principle/Objective	Potential Performance Measure
System Preservation/Optimization	Miles inventoried and assessed Miles of roadway in need of repair Number of bridges in need of repair
Development	% of projects in Investment Levels 1 and 2 Number of retail jobs within 15 minutes of home Developed land per capita Acres of preserved land
Travel Opportunities and Choices	% of TE funds spent in Levels 1, 2, 3 areas % of trips by non-motorized means % of population within ½ mile of a transit route Average travel time % increase in transit ridership
Cost Effectiveness	Use Bridge Health index to schedule rehab projects % decrease in annual cost of wasted time Subsidy per transit trip % of VMT traveled on “good” rated roads Cost/benefit comparisons of proposed projects
Quality of Life	Traffic Safety Index % decrease in incident response time Access to jobs for target communities Transit time to major job centers Vehicle emissions per capita
Economic Development & Growth	Average number of jobs within 15 minutes of home Levels of congestion/reliability for freight Cost per mile of freight Number of extended breakdowns along freeways
Planning and Coordination	% of CTP implemented each year % of DelDOT Action Plan items completed Number of opportunities for public input Consistency with MPO and County plans

Source: Statewide Long Range Transportation Plan

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 MTP 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.
- **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, Route 1 (south of DAFB), U.S. 13, and U.S. 113 are included in the program.
- **Improve existing 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 MPO region. However, there is no regularly-scheduled passenger service. Preserving rail facilities helps to potentially reinstate 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 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 2010 *Strategic Highway Safety Plan* should continue to be implemented.

5.2.2 Fundamental Strategy 2: Improve Management of Existing System

Summary of Recommended Actions:

- **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, improved transit systems, and in-vehicle information systems. The continued use of ITS is anticipated to grow throughout the next 20 years in Delaware.
- **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, 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. As described under Fundamental Strategy 3, to develop and expand other modes of transportation, the concept of Complete Streets should be considered when existing facilities are improved.
- **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 MPO region has a variety of commercial corridors, including U.S. 13 throughout the length of the County, Route 8 in Dover, Route 10 near Camden, and U.S. 113 in Milford.
- **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. Continued use of Google Transit is a positive benefit for transit users.
- **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. A study of more desirable park-and-ride locations in the County may be required in the near future.

- **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.

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. 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.
 - Execute annual travel surveys to determine travel habits and characteristics.
 - 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 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. 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.
- **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 MTP.
- **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.

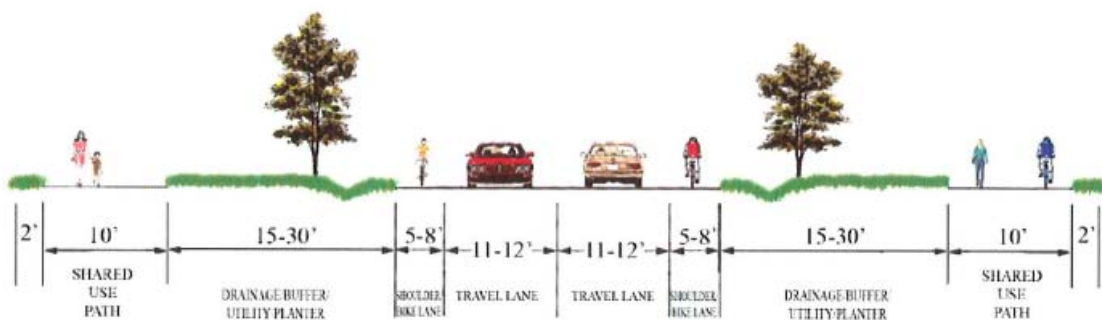
- **Support opportunities to expand aviation facilities** - Based on the Air Cargo Study, the Air Cargo Ramp has the potential to be expanded to accommodate the commercial air cargo that serves Dover AFB. This opportunity could result in non-military commercial air freight in the future. In addition, 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 on Route 42. The Delaware River and Bay Authority (DRBA) has leased and operates the airport for the state. The DRBA and the state have made improvements to the runway and taxiway and installed new hangars.
- **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.

As part of its Complete Streets Policy, DelDOT considers all potential user groups and abilities during the planning, design, and implementation stages of all transportation projects, even maintenance projects. Such groups include motorists, transit-riders, pedestrians, bicyclists, and others as needed (e.g., horse-drawn vehicles).

Exhibit 5.4: Two-lane Suburban Roadway with Shoulder and Shared-Use Path²



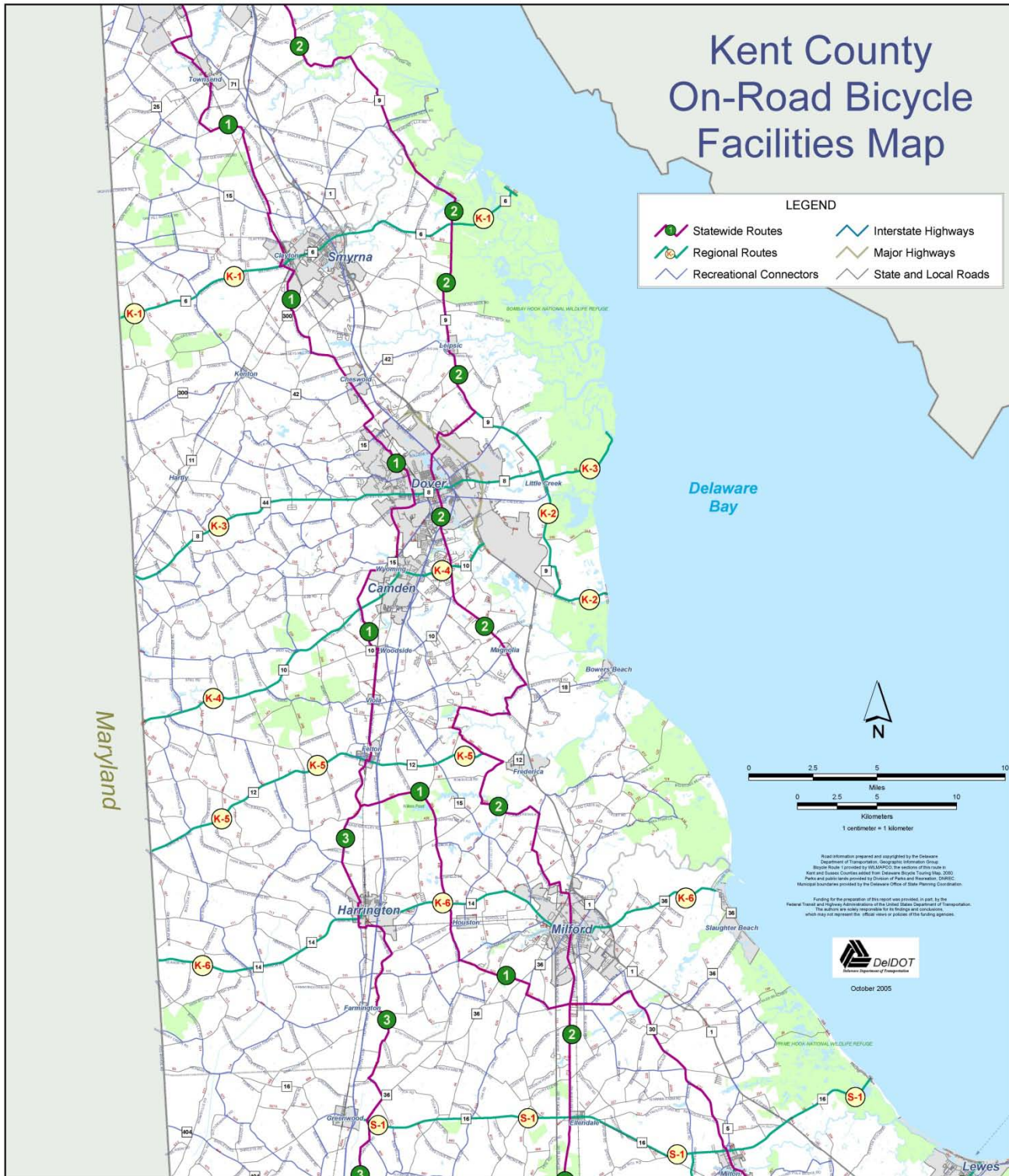
² DelDOT, Department of Planning

Recommended Complete Streets actions:

- Design facilities in concurrence with the U.S. DOT 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. The DelDOT Bicycle Map is shown in **Exhibit 5.5**.
- Implement the projects in the MPO Regional Bicycle Plan
- 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, shared-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, as well as the DelDOT Americans with Disabilities Act (ADA) Implementation Plan.

Exhibit 5.5: Kent County Bicycle Map



Source: DelDOT Planning

5.2.4. Fundamental Strategy 4: Provide Additional System Capacity

Summary of Recommended Actions:

- **Complete committed projects** - **Exhibit 5.6** lists improvements that are programmed for funding and are included in the current 2012-2015 Transportation Improvement Program (TIP). However, only one of these projects – the West Dover Connector - provides more capacity to the network.
- **Planning Studies** - 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. Potential planning studies and transportation projects are included in Appendix E.

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 are for 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.

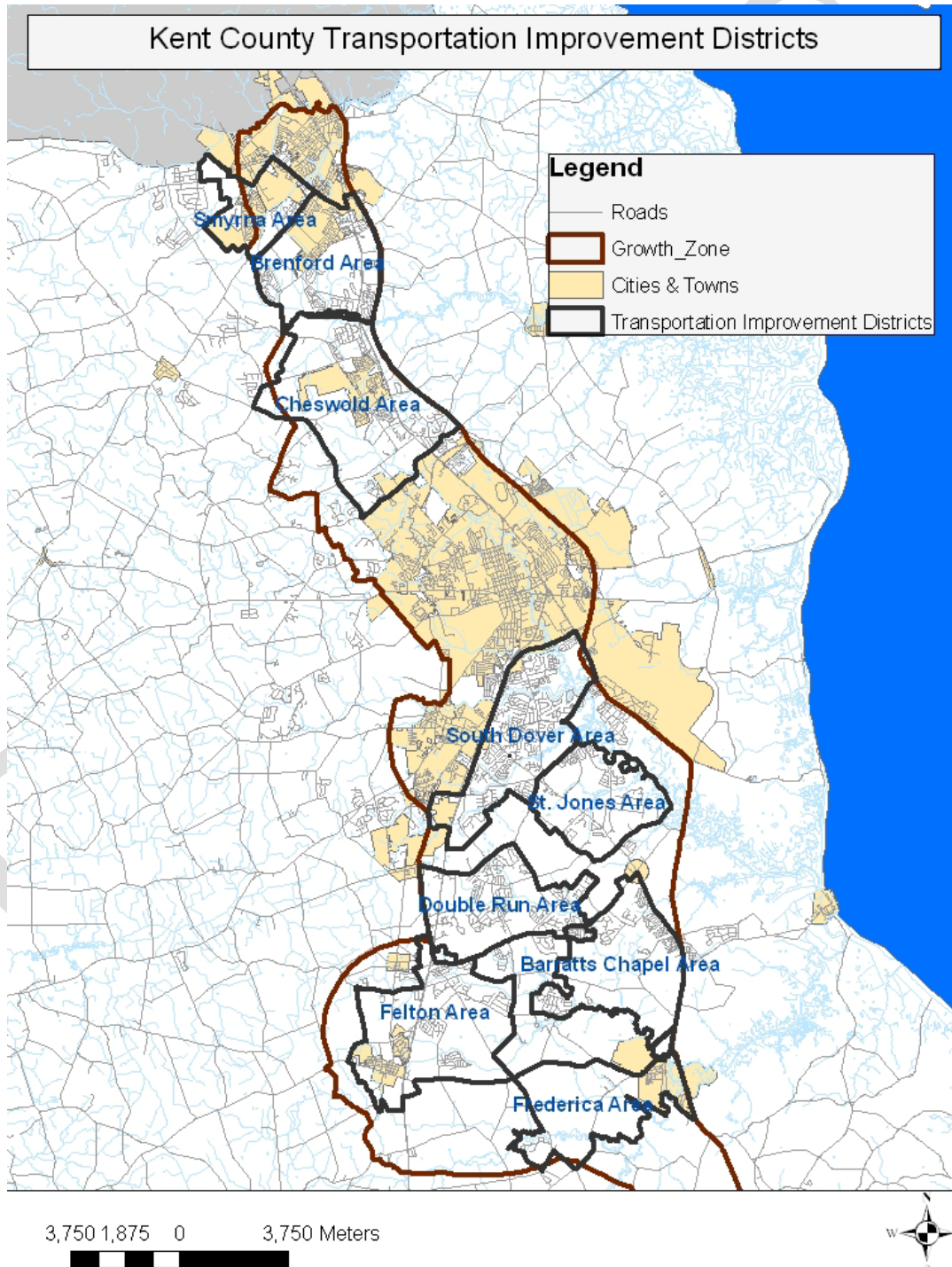
Forming such districts changes the subdivision and land development approval process in these areas in that the transportation infrastructure is identified ahead of the land use application. The existing standard of requiring traffic impact studies for individual developments should be replaced by the 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**. As of October 2012, DelDOT has prepared a revised *Standards and Regulations for Subdivision Streets and Highway Access*, which includes a detailed discussion on the TID concept. Based on the current schedule, three TID's are anticipated for formal adoption by the summer of 2013. One TID will likely be created in each County.

Exhibit 5.6: List of 2012-2015 TIP Projects

Project Name	System	Class
U.S. 13 Pedestrian Improvements, Court Street to Lookerman Street	Roadway	Arterial
Route 10/Route 15 Intersection Improvements	Roadway	Arterial
Lookerman Street/Forest Street Intersection Improvements	Roadway	Local
Highway Safety Improvement Program	Roadway	Arterial
South State Street and Sorghum Mill Road	Roadway	Collector
Route 8/Pearson's Corner Road	Roadway	Arterial
U.S. 13 at Carpenter Bridge Road	Roadway	Arterial
Glenwood Avenue (Smyrna)	Roadway	Collector
SR 1/ Route 30 Grade-Separated Intersection	Roadway	Arterial
SR 1/ Little Heaven Grade-Separated Intersection	Roadway	Arterial
SR 1/ South Frederica Grade-Separated Intersection	Roadway	Arterial
SR 1/Thompsonville Road Grade-Separated Intersection	Roadway	Arterial
SR 1/N.E. Front Street Grade-Separated Intersection	Roadway	Arterial
Carter Road, Sunnyside Road to Wheatley's Pond Road	Roadway	Collector
Barratt's Chapel Road	Roadway	Collector
West Dover Connector	Roadway	Collector
Clarence Street Extension	Roadway	Local
BR 2-016B, North Little Creek Road	Roadway	Bridge
BR 2-033B, Canterbury Road	Roadway	Bridge
BR 2-040A, School Lane (Clayton)	Roadway	Bridge
BR 2-059D, Whiteleysburg Road	Roadway	Bridge
BR 2-100A, Denneys Road	Roadway	Bridge
BR 2-112B, Burrsville Road	Roadway	Bridge
BR 2-114C, Todd's Chapel Road	Roadway	Bridge
BR 2-158A, Chestnut Grove Road	Roadway	Bridge
BR 2-163A, Victory Chapel Road	Roadway	Bridge
BR 2-166B, Shaws Corner Road	Roadway	Bridge
BR 2-195A, West Railroad Avenue (Wyoming)	Roadway	Bridge
BR 2-203A, Todd's Mill Road	Roadway	Bridge
BR 2-204A, Apple Grove School Road	Roadway	Bridge
BR 2-208C, Mahan Corner Road	Roadway	Bridge
BR 2-371A, Barratt's Chapel Road	Roadway	Bridge
BR 2-381A, Fox Chase Road	Roadway	Bridge
BR 2-429A, Jackson Ditch Road	Roadway	Bridge
BR 2-501, Washington Street (Milford)	Roadway	Bridge
Dover Transit Center - Building	Transit	Facilities
Dover Maintenance Building Lift Replacement	Transit	Facilities
Preventive Maintenance - Kent County	Transit	Vehicles
Transit Vehicle Expansion - Kent County	Transit	Vehicles
Transit Vehicle Expansion - Paratransit Buses	Transit	Vehicles
Transit Vehicle Replacement and Refurbishment - Paratransit Buses	Transit	Vehicles
Transit Vehicle Replacement and Refurbishment	Transit	Vehicles
35-foot Low Floor (2 buses), Dover - Seaford	Transit	Vehicles
35-foot Low Floor (2 buses), Dover - Rehoboth	Transit	Vehicles
Dover Facility – Interior Repair	Transit	Facilities

Project Name	System	Class
Support Vehicles - Kent County	Transit	Vehicles

Exhibit 5.7: Transportation Improvement Districts

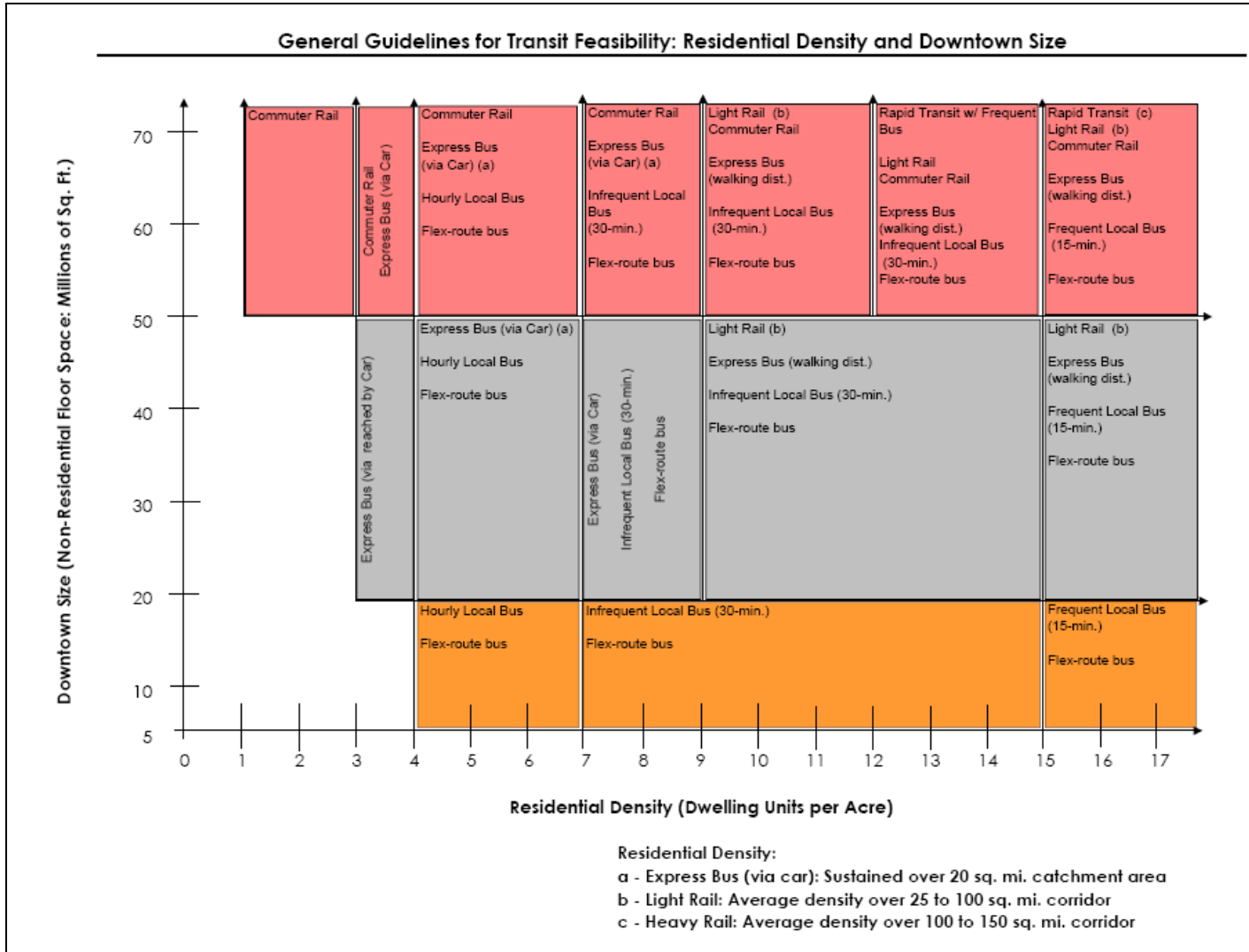


Source: Kent County Comprehensive Plan

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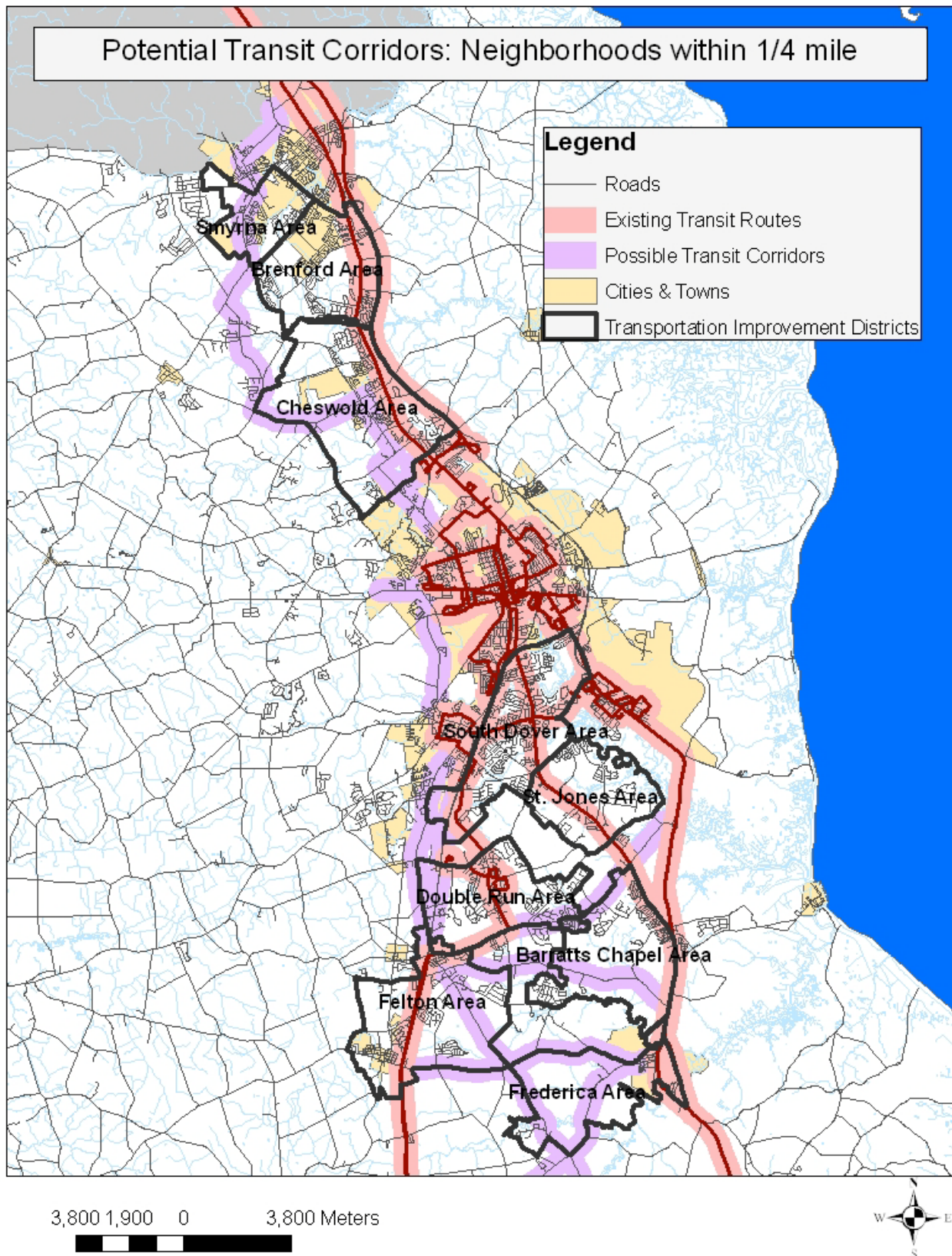
- **Make investments and decisions according to current and planned intensity of land use and presence of infrastructure** - The framework for the strategies and actions is an investment strategy that focuses investments according to the intensity of land use anticipated in a given area and the presence 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 *State Strategies*; 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 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



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5.3 Project Prioritization

Projects being considered for inclusion in the MTP 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: TIP 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