DVRPC Congestion Management Process

Limiting Traffic Congestion and Achieving Regional Goals

October 2010

CMP CONGESTION MANAGEMENT PROCESS

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

The Delaware Valley Regional Planning Commission is dedicated to uniting the region's elected officials, planning professionals, and the public with a common vision of making a great region even greater. Shaping the way we live, work, and play, DVRPC builds consensus on improving transportation, promoting smart growth, protecting the environment, and enhancing the economy. We serve a diverse region of nine counties: Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey. DVRPC is the federally designated Metropolitan Planning Organization for the Greater Philadelphia Region — leading the way to a better future.

The symbol in our logo is adapted from the official DVRPC seal and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

DVRPC is funded by a variety of funding sources including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), the Pennsylvania and New Jersey departments of transportation, as well as by DVRPC's state and local member governments. The authors, however, are solely responsible for the findings and conclusions herein, which may not represent the official views or policies of the funding agencies.

DVRPC fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. DVRPC's website (www.dvrpc.org) may be translated into multiple languages. Publications and other public documents can be made available in alternative languages and formats, if requested. For more information, please call (215) 238-2871.

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CHAPTER 1

Introduction

Welcome to the process of reducing congestion and advancing toward achieving regional goals in the Delaware Valley. The Congestion Management Process (CMP) is a systematic process for managing congestion, which recommends specific multimodal strategies for all locations. Through technical analysis, stakeholder participation, and enhanced coordination, the CMP helps minimize congestion and improve the mobility of people and goods.

The CMP does the following, with guidance from federal transportation regulations:

- It identifies congested corridors with strategies to minimize congestion.
- It helps identify where multimodal investments are needed for the whole region to prosper.
- It improves connections between transportation, land use, economic development, and environmental planning.
- It is a rational consideration in selecting projects to include for funding in the Transportation Improvement Program (TIP).
- It provides useful data and analysis for people working on transportation projects.
- It makes investments as effective and long-lasting as possible.
- It encourages a wide range of stakeholders to participate and collaborate, especially through the CMP Advisory Committee.

A major update of congestion management planning in the region was completed in 2006. This report updates that work. Highlights of this cycle of the CMP include:

- A revised set of criteria for analysis was prepared with input from the CMP Advisory Committee.
- Regional congested corridors, subcorridors, and appropriate multimodal strategies for each subcorridor were updated based on analysis and input from the Advisory Committee.
- Steps for advancing capacity-adding projects outside of corridors, which have a higher burden of proof of value, as compared to capacity-adding projects within congested areas, were updated. Procedures provide specific details on how to meet this higher burden of proof, as the Advisory Committee had requested.
- Relationships with a wide range of stakeholders were strengthened, especially in the context of working with project managers on supplemental strategies for projects that add road capacity.

In keeping with an ongoing process, each chapter of this report is designed with an introduction followed by the discrete sections. Feel free to pull items out[1] for use or download them from the DVRPC website at www.dvrpc.org/CongestionManagement. Expect updates, and please communicate ideas to DVRPC CMP staff that would help your governmental body or organization minimize regional congestion.

[1] The CMP report is distributed to members of the CMP Advisory Committee and select others as a binder with the report clipped inside. This allows for sections to be removed and viewed separately. For those who do not receive the report in binder form, the report may be printed in its entirety, or as individual sections. See the Publications section of the DVRPC website (www.dvrpc.org) to download the report.

DVRPC's Perspective on Transportation Planning

Philosophy

DVRPC plans for the orderly growth and development of the bistate region. Transportation planning supports the region's land use, environmental, and economic development policies. In this context, DVRPC is committed to the regionwide promotion and implementation of a safe, convenient, and seamless passenger and freight multimodal transportation system supportive of road, rail, bus, bicyclist, and pedestrian networks of mobility. This level of coordination requires collaboration with a wide range of stakeholders and strong technical analysis, guided by smart transportation and land use policies.

Principles

1. Transportation investments will support the land use goals and policies of the DVRPC Long-Range Plan.

2. The priorities for transportation projects and programs are as follows:
   a. Maintain, optimize, and modernize the existing transportation system and rights-of-way. This includes optimizing the services delivered by the system, such as options for and convenience of transfers among modes.
   b. Manage demand for transportation by fostering land use patterns and other strategies that reduce the need for and length of trips.
   c. Increase capacity of the existing multimodal transportation system, limiting the addition of through-travel lanes.
   d. Add new capacity where necessary, limiting the addition of new roads.

3. The transportation planning process will be comprehensive, cooperative, continuing, compatible, and coordinated ("3C+2," for short). The first three are the basis of the federally required "3C" process. This process will be:
   a. Comprehensive – All modes and their implications will be considered and evaluated. All transportation solutions will consider more than one mode to get the most from investments.
   b. Cooperative – We will work together productively, seeking consensus and enhancing participation across the whole region.
   c. Continuing – New endeavors need to incorporate maintenance, consider prior efforts, and fit with adopted ongoing system planning efforts.
   d. Coordinated – This complex region requires a focus on fitting pieces and projects together across agencies, organizations, and boundaries.
   e. Compatible – Every effort should be made to ensure that land uses and infrastructure (transportation, water/sewer, and technologies) work efficiently together.

4. Investment benefits and costs will be strategically distributed across the region, with careful consideration of environmental and social impacts. Investments will be affordable and consider appropriate economic development factors.

5. The region will be innovative at incorporating policy approaches, Intelligent Transportation Systems (ITS) applications, and emerging technologies. DVRPC will be bold in supporting projects that continue to transform the region into a better place to live, visit, and work.

Note: These approaches are in keeping with relevant regulations and memoranda of understanding between DVRPC and the following agencies: NJ Transit, PennDOT, NJDOT, SEPTA, and PATCO.

DVRPC's Perspective on Transportation Planning: Congestion Management Process

Philosophy

The CMP advances the goals of the DVRPC Long-Range Plan ("the Plan") and strengthens the connection between the Plan and the TIP. The CMP is a systematic process that performs analyses of the regional transportation network, identifies congested corridors and multimodal strategies to mitigate the congestion, and evaluates the effectiveness of implemented strategies. Where more single-occupancy vehicle (SOV) road capacity is appropriate, the CMP includes potential supplemental strategies to reduce travel demand, improve operations, and get the most long-term value from the investment. The CMP also identifies emerging/regionally significant corridors, where proactive steps are especially important to prevent congestion, and inexpensive strategies that are appropriate everywhere.

Principles

1. The CMP is regionwide. It uses the following approach:
   a. Identify congested corridors and segment them into subcorridors within which, at a regional planning scale, similar sets of strategies are appropriate. Next, develop sets of Very Appropriate and Secondary strategies for each subcorridor. This effort uses analysis of the performance of the regional transportation system, land use data, recommendations from corridor studies, and input from the CMP Advisory Committee.
   b. Identify corridors of regional significance that are not currently congested, but seem likely to become so in the future. Then recommend proactive and inexpensive strategies applicable everywhere to help prevent these corridors from becoming congested.
   c. Define procedures for federally funded major capacity-adding road projects not in corridors, or in corridors where major SOV capacity is not listed as a CMP strategy. Such projects may be appropriate, but start with a higher burden of proof, given the limits on funding.

2. The CMP will provide information on transportation system performance and identify strategies to minimize congestion and enhance the mobility of people and goods. The strategies will include (but will not be limited to):
   a. Improvements to the management and operation of the transportation system, including the implementation of Intelligent Transportation Systems (ITS).
   b. Transportation demand management (TDM), including growth management.
   c. Smart transportation policies that promote alternate modes of transportation to automobile travel and assist in the development of more livable communities.
   d. Addition of road and transit capacity.
   e. Improvements to transit, pedestrian, and bicyclist facilities.
   f. The CMP will list specific strategies for each subcorridor based on analysis, recommendations from studies, and stakeholder review.

3. Building new road capacity may be appropriate when other strategies do not reasonably reduce congestion, but it must be developed in a thoughtful way. These projects must include multimodal supplemental strategies to get the most long-term value from the investment. This begins with the strategies listed in the CMP for the subcorridor, which are then refined through meetings with stakeholders and in preliminary engineering. They must be funded at the same time as the main project. Their implementation will be monitored by DVRPC staff.

4. Regulations require projects that add SOV capacity to be consistent with the CMP to be eligible for federal funding. Otherwise, further analysis is required and the results will be the basis of DVPRC Board discussion to either amend the CMP or find other funding for the project. Final engineering for major SOV capacity-adding projects will not be funded in the TIP without a table of supplemental strategies that has been approved by the DVRPC Board. The Plan will determine which congested highway facilities and corridors of regional travel will receive major additional SOV capacity. This determination must balance CMP findings with transportation priorities, land use/smart growth policies, and financial constraints.
   a. If adding SOV capacity is not listed as a strategy for that subcorridor, the proposed project faces a higher burden of proof and must undergo quantitative analysis including the listed strategies and comparison of the results for the region as well as for the project area. For more information, see CMP Procedures (DVRPC Publication #TM09029).
   b. Capacity-adding projects outside of corridors must demonstrate consistency with the Plan, follow CMP procedures, and compare well in terms of benefit/cost analysis with projects located in corridors.

5. The CMP will be updated on a regular basis.

Applicable Regulations

Following are the federal SAFETEA-LU regulations that guided the update of the CMP. Bolding is added by DVRPC to increase clarity for application in this region.

STATEWIDE TRANSPORTATION PLANNING; METROPOLITAN TRANSPORTATION PLANNING FINAL RULE ON CONGESTION MANAGEMENT PROCESS February 14, 2007	23 CFR Parts 450 and 500

PART 450 – PLANNING ASSISTANCE AND STANDARDS

Subpart C – Metropolitan Transportation Planning and Programming

Sec. 450.320 Congestion management process in transportation management areas. (p. 7274)
(a) The transportation planning process in a TMA shall address congestion management through a process that provides for **safe and effective integrated management and operation of the multimodal transportation system**, based on a cooperatively developed and implemented metropolitan-wide strategy, of new and existing transportation facilities eligible for funding under title 23 U.S.C. and title 49 U.S.C. Chapter 53 through the use of travel demand reduction and operational management strategies.
(b) The development of a congestion management process should result in **multimodal system performance measures and strategies** that can be reflected in the metropolitan transportation plan and the TIP. The level of system performance deemed acceptable by State and local transportation officials may vary by type of transportation facility, geographic location (metropolitan area or subarea), and/or time of day. In addition, consideration should be given to strategies **that manage demand, reduce single occupant vehicle (SOV) travel, and improve transportation system management and operations**. Where the addition of general purpose lanes is determined to be an appropriate congestion management strategy, explicit consideration is to be given to the incorporation of appropriate features into the SOV project to facilitate future demand management strategies and operational improvements that will maintain the functional integrity and safety of those lanes.
(c) The congestion management process shall be developed, established, and implemented as part of the metropolitan transportation planning process that includes coordination with

transportation system management and operations activities. The congestion management process shall include:

(1) **Methods to monitor and evaluate the performance** of the multimodal transportation system, **identify the causes of recurring and nonrecurring congestion**, identify and **evaluate alternative strategies**, **provide information supporting the implementation of actions**, and **evaluate the effectiveness of implemented actions**;

(2) **Definition of congestion management objectives and appropriate performance measures to assess** the extent of congestion and support the evaluation of the effectiveness of congestion reduction and mobility enhancement strategies for the movement of people and goods. Since levels of acceptable system performance may vary among local communities, performance measures should be tailored to the specific needs of the area and established cooperatively by the State(s), affected MPO(s), and local officials in consultation with the operators of major modes of transportation in the coverage area;

(3) Establishment of a coordinated program for **data collection and system performance monitoring** to define the extent and duration of congestion, to contribute in determining the causes of congestion, and evaluate the efficiency and effectiveness of implemented actions. To the extent possible, this data collection program should be coordinated with existing data sources (including archived operational/ITS data) and coordinated with operations managers in the metropolitan area;

(4) **Identification and evaluation of the anticipated performance and expected benefits of appropriate congestion management strategies** that will contribute to the more effective use and improved safety of existing and future transportation systems based on the established performance measures. The following categories of strategies, or combinations of strategies, are some examples of what should be appropriately considered for each area: (i) Demand management measures, including growth management and congestion pricing; (ii) Traffic operational improvements; (iii) Public transportation improvements; (iv) ITS technologies as related to the regional ITS architecture; and (v) Where necessary, additional system capacity;

(5) **Identification of an implementation schedule, implementation responsibilities, and possible funding sources for each strategy** (or combination of strategies) proposed for implementation; and

(6) Implementation of a process for periodic **assessment of the effectiveness of implemented strategies**, in terms of the area's established performance measures. The results of this evaluation shall be provided to decision-makers and the public to provide guidance on selection of effective strategies for future implementation.

(d) In a TMA designated as a nonattainment area for ozone or carbon monoxide pursuant to the Clean Air Act, **federal funds may not be programmed for any project that will result in a significant increase in the carrying capacity for SOVs** (i.e., a new general purpose highway on a new location or adding general purpose lanes, with the exception of safety improvements or the elimination of bottlenecks), **unless the project is addressed through a congestion management process** meeting the requirements of this section.

(e) In TMAs designated as nonattainment areas for ozone or carbon monoxide, the congestion management process shall provide **an appropriate analysis** of reasonable (including multimodal) travel demand reduction and operational management strategies for the corridor in which a project that will result in a significant increase in capacity for SOVs (as described in paragraph (d) of this section) is proposed to be advanced with federal funds. If the analysis demonstrates that travel demand reduction and operational management strategies cannot fully satisfy the need for additional capacity in the corridor and additional SOV capacity is warranted, **then the congestion management process shall identify all reasonable strategies to manage the SOV facility safely and effectively (or to facilitate its management in the future)**. Other travel demand reduction and operational management strategies appropriate for the corridor, but not appropriate for incorporation into the SOV facility itself, shall also be identified through the congestion management process. **All identified reasonable travel**

demand reduction and operational management strategies shall be incorporated into the SOV project or committed to by the State and MPO for implementation.
(f) State laws, rules, or regulations pertaining to congestion management systems or programs may constitute the congestion management process, if the FHWA and the FTA find that the State laws, rules, or regulations are consistent with, and fulfill the intent of, the purposes of 23 U.S.C. 134 and 49 U.S.C. 5303.

PART 500 – MANAGEMENT AND MONITORING SYSTEMS

Subpart A – Management Systems

Sec. 500.109 CMS (p. 7274)
(a) For purposes of this part, congestion means the level at which transportation system performance is unacceptable due to excessive travel times and delays. Congestion management means the application of strategies to improve system performance and reliability by reducing the adverse impacts of congestion on the movement of people and goods in a region. A congestion management system or process is a systematic and regionally accepted approach for managing congestion that provides accurate, up-to-date information on transportation system operations and performance and assesses alternative strategies for congestion management that meet State and local needs.
(b) The development of a congestion management system or process should result in performance measures and strategies that can be integrated into transportation plans and programs. The level of system performance deemed acceptable by State and local officials may vary by type of transportation facility, geographic location (metropolitan area or subarea and/or nonmetropolitan area), and/or time of day. **In both metropolitan and nonmetropolitan areas, consideration needs to be given to strategies that manage demand, reduce single occupant vehicle (SOV) travel, and improve transportation system management and operations**. Where the addition of general purpose lanes is determined to be an appropriate congestion management strategy, explicit consideration is to be given to the incorporation of appropriate features into the SOV project to facilitate future demand management strategies and operational improvements that will maintain the functional integrity of those lanes.

Source:
Federal Register/Vol. 72, No. 30/Wednesday, February 14, 2007/Rules and Regulations
http://edocket.access.gpo.gov/2007/pdf/07-493.pdf, as of 5/31/07

CHAPTER 2

Cooperation and Coordination

The CMP Advisory Committee

The update of the CMP was vastly enriched by the ongoing participation of members of the CMP Advisory Committee. The committee met approximately five times to reach consensus on the 2009 update. It will continue meeting to address ongoing matters, and more frequently during focused update periods. The participating agencies and organizations are listed below.

Table 1: CMP Advisory Committee

CMP Advisory Committee Members	
Counties	■ New Jersey: Burlington, Camden, Gloucester, Mercer ■ Pennsylvania: Bucks, Chester, Delaware, Montgomery, Philadelphia
DOTs	■ NJDOT ■ PennDOT
Transit Authorities	■ Southeastern Pennsylvania Transportation Authority (SEPTA) ■ New Jersey Transit (NJ Transit) ■ Port Authority Transit Corporation (PATCO) ■ Delaware Transit Corporation
Federal Partners	■ FHWA, New Jersey and Pennsylvania regions ■ FTA Region III
Transportation Management Associations (TMAs)	■ All eight TMAs in the Delaware Valley region
Other DVRPC Committees	■ Regional Citizens Committee ■ Goods Movement Task Force
Other MPOs	■ New Jersey: North Jersey Transportation Planning Authority (NJTPA) and South Jersey Transportation Planning Organization (SJTPO) ■ Pennsylvania: Lehigh Valley Planning Commission, Lancaster County Transportation Coordinating Committee, Southwestern Pennsylvania Commission, Tri-County Regional Planning Commission ■ Delaware/Maryland: Wilmington Area Planning Council (WILMAPCO)
Other participants (as invited or who asked to join)	■ Delaware River Port Authority ■ New Jersey Turnpike Authority ■ Traffic.com ■ Others

Source: DVRPC, 2010

Coordination within DVRPC

The update of the CMP involved interdisciplinary input of an internal DVRPC work group. This group included staff from the Planning and Technical Services Divisions. On the Planning side, this included the offices of Long-Range Planning, Corridor Planning, Transportation Studies, Freight Planning, Operations Planning, and Transit, Bicycle, and Pedestrian Planning. On the Technical Services side this included the offices of Capital Progams, Project Implementation, and Modeling and Analysis. A related effort was ongoing participation in Planning at the Edge, a DVRPC project to encourage coordination among MPOs adjacent to the DVRPC region.

These meetings have resulted in greater coordination within DVRPC, which is expected to increase effectiveness. Some areas of enhanced coordination include:

- **TIP** – The process by which projects are considered for addition to the TIP incorporates the CMP and the Plan in selecting and prioritizing projects for funding.
- **Long-Range Plan** – The Plan guided the CMP, and the CMP was used as one of several criteria for evaluating projects to consider in the update of the Plan. The CMP also provided technical analysis back into the update of the recently adopted Plan. This cycle will continue with future updates.
- **Corridor Studies/Planning Work Program Tasks** – In a large, complex region like the Delaware Valley, the CMP tends to guide corridor studies and other follow-up tasks that result in projects. In a smaller region, the CMP can more readily jump to specific projects. DVRPC will fund a corridor study that considers the CMP in each state each year and then pursue getting the resulting projects funded and completed. In addition, the CMP provides information for various other planning efforts, and those results feed back into the CMP.

Public Participation

The CMP was updated in an open and participatory process. Clear information for the CMP is maintained on the DVRPC website. Representatives from the Regional Citizens Committee are included in the Advisory Committee. Outreach meetings are held annually at NJDOT and PennDOT, as well as at other locations upon request. A newsletter was prepared and distributed to approximately 2,000 organizations and individuals to introduce the general concepts of the CMP. In addition to the general CMP newsletter, two newsletters are prepared for corridors each year. Usually these are prepared for the kick-off meetings of corridor or area studies to familiarize a wide range of participants about the transportation strategies they may wish to consider. Staff prepared an article on CMP published as the cover story in Pennsylvania Borough News in June 2010.

Environmental Justice

The CMP and its related projects must not result in direct or disparate negative impacts on low-income and minority groups. This is not only important to the Delaware Valley region, it is also a requirement for tasks funded with federal dollars. Therefore, the potential impacts of the CMP are considered in relation to DVRPC's environmental justice (EJ) evaluation method, established in a 2001 report, "...and Justice for All: DVRPC's Strategy for Fair Treatment and Meaningful Involvement of All People" (Publication 01022). Initially used to evaluate the Transportation Improvement Prgram, DVRPC's EJ "degrees of disadvantage" (DOD) methodology has been included in many projects, programs, and studies.

Broadly speaking, DVRPC's EJ methodology identifies groups that may be negatively impacted and identifies where there are high proportions of these groups. This allows a people- and place-based approach to consider the impact of the regional transportation system, and DVRPC's

programs, policies, and investments. DVRPC currently assesses where there are high proportions of the following population groups:

1. Non-Hispanic minorities;
2. Hispanic persons;
3. Persons with physical disabilities;
4. Persons with limited English proficiency;
5. Female heads of household with child;
6. Carless households;
7. Households in poverty; and
8. Elderly persons.

Using US Census data for the year 2000, these groups were identified and located at the census tract level. Data is gathered at the regional level, combining populations from each of the nine counties, for either individuals or households, depending on the indicator. From there, the total number of persons in each demographic group is divided by the appropriate universe (either population or households) for the nine-county region, arriving at a regional average for that population group. Any census tract that meets or exceeds the regional average level, or threshold, is considered an EJ-sensitive tract with a DOD for that group.

The majority of the maps created for DVRPC's EJ analysis are based on the number of DODs that each tract has (i.e., a census tract that meets or exceeds the regional average for Hispanics and carless households is considered to have two DODs). Tracts with five or more DODs were considered to have significance for the CMP. Additionally, any tract having a specific demographic group with a concentration twice the regional average has significance for the CMP. Approximately 27 percent of the DVRPC population lives in tracts where five or more DODs are an issue.

The EJ evaluation method also includes a set of "quality-of-life" factors. These mapped factors demonstrate the existence of various assets across the region and their proximity to census tracts with DODs. The quality-of-life factors consist of:

1. Transit routes with quarter-mile buffers;
2. Major arterial highways;
3. Job access and reverse commute routes;
4. Employment centers;
5. Hospitals;
6. Day care centers; and
7. Areas within a 60-minute transit travel time commute to Philadelphia.

The DVRPC EJ analysis was used in several ways in the CMP. These included:

- Review of corridors – The locations with high (five or more) DODs were used both as a proxy for contiguous neighborhoods, and also for areas to further review for full coverage by a corridor. For example, if a congested corridor covered most of a tract with many DODs, it was further checked to determine whether the boundary should extended to cover that whole tract.
- Criteria Analysis – As part of the objective to invest where transit is needed and reward development that makes transit more feasible, the transit score analysis was used, as described in, "Creating a Regional Transit Score Protocol" (Publication 07005). The inputs for that analysis have some relationship with the degrees of disadvantage, in that people in these disadvantaged groups are more likely than the average population to have zero cars or one car per several-person household.
- Strategy Input – In coordination with DVRPC EJ staff, transportation strategies were identified that are appropriate for each disadvantaged group. Analysis was done to establish in what tracts there were disadvantaged populations at densities two or more times the regional

average. Appropriate strategies were incorporated in the starting set for subcorridors containing these tracts. This work was reviewed by the CMP Advisory Committee.

- Evaluation – After the congested corridors were close to final, they were mapped with the high EJ tracts. This map is included as Figure 1. The purpose was to be sure that the CMP is encouraging appropriate investment in all of these locations with especially high levels of need for transportation

Strategies to Improve Transportation for EJ Populations

This section of the CMP Report considers groups of transportation strategies with relationship to EJ populations that may be helped by them. These groups of strategies or the specific ones listed may be considered for individual subcorridors where analysis indicates they may help traditionally underserved populations to have good transportation options. This is in keeping with long-range plan goals and also may reduce congestion by encouraging use of modes other than driving alone. In some cases, it may reduce reliance on cars that are at more risk of breaking down and causing congstion than average, and it reduces pressure for people to drive when they may be at greater risk of being in a congestion-causing crash, such as for some senior drivers or people under pressure to work multiple jobs. The disadvantaged groups that may benefit are listed with each group of strategies. The strategies are meant to be a starting point, and they are in no particular order. Due to the various combinations of DODs that may be present in a subcorridor, it is expected that each corridor study or project will detail recommendations that are pertinent to its own unique combination of disadvantaged groups. These strategies are from the "Range of Strategies to Reduce Congestion." See that section of the CMP Report for more relevant strategies (Chapter 3, p. 23).

Enhance Outreach for EJ

These strategies include conducting outreach in locations and at times that allow the greatest opportunities to reach groups that have been marginalized in the past, but whose inclusion is critical in order to ensure a sound and effective study of a congestion issue or project. Strategies may also include providing information in the different languages spoken by the various population groups in a community, particularly those that are affected by a proposed study or project. Approximately two percent of all people who live in the DVRPC region do not speak English or have limited proficiency with it, and that percent is many times higher in some communities. The disadvantaged groups to which these strategies may apply include Non-Hispanic Minority, Hispanic, Poverty, Limited English Proficiency, or Female Head of Household with Child.

- Environmental Justice Outreach for Decision-Making – Focused outreach may include meetings in different locations, times, or formats than are often used in the process of preparing recommendations or making decisions, and offering translated materials or translators as needed for people to participate.
- Multilingual and Nontraditional Communication – Provide basic information in the languages used in communities with significant populations that speak English as a second language and otherwise communicate transportation options in locally appropriate ways.

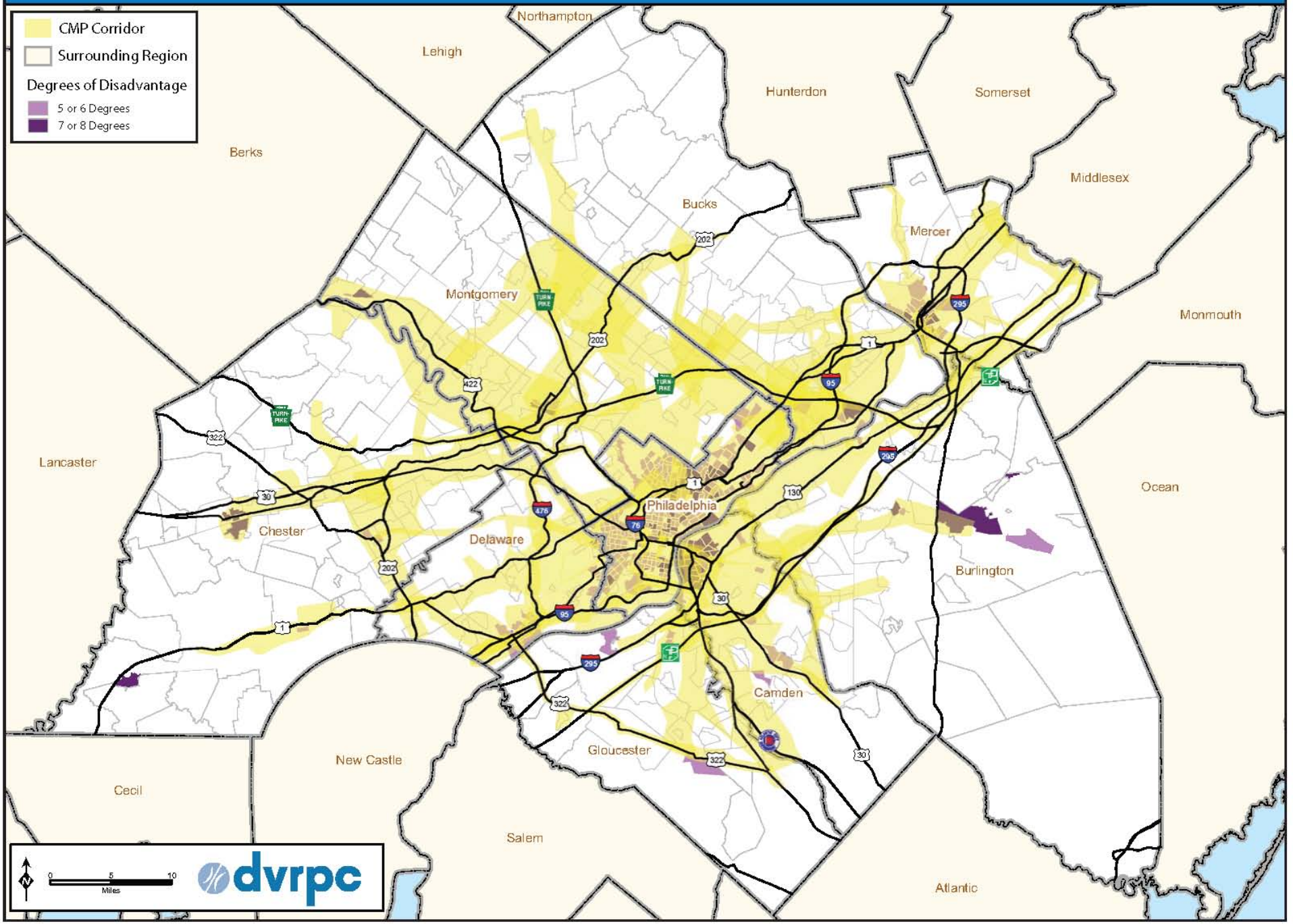
Improve Existing Transit Services

This set of strategies deals with ways to make existing transit services more convenient and useful. It includes expanding the hours and frequency of operation for regular, fixed-route bus and rail services, as well as other types of transit. Extended service hours and frequency for nights and weekends benefit workers in the service sector or nontraditional hour employment and those with limited driving ability due to disability or age. This benefits not only the EJ disadvantaged groups, but also the public in general. The disadvantaged groups to which these strategies may apply include Carless, Elderly, Disabled, and Poverty.

- More Frequent Transit or More Hours of Service – This involves providing additional service on an existing transit route. It can increase peak service, daily service, or provide earlier or later service.

CMP Corridors and Tracts with High Degrees of Disadvantaged Populations

Figure 1



- Extensions or Changes in Bus Routes – This includes review of where bus service is provided, seeking ways to provide better or more efficient service using existing resources. For bus or other services, it may include minor extensions in existing routes to provide service to a broader area.

Create New Transit Services

These strategies focus on providing new transit services. The more extensive and convenient transit is for people, the more it will be used, especially by those whose access to private vehicles is limited or whose driving ability may be limited due to disability or age. Special consideration should be given to enhancing connections to and between existing transit services. This benefits not only the EJ disadvantaged groups, but also the public in general. The disadvantaged groups to which these strategies may apply include Carless, Elderly, Disabled, or Poverty.

- New Bus Route – New regular bus service in an area not served by existing routes.
- Local Fixed-Rail Service (new, extensions, or added stations) – This can be provided in many different ways, including trolley, subway, elevated rail, or other approaches. It may mean enhancements of existing services or new services.

Make Bicycling and Walking More Feasible as Transportation Modes

People unable to obtain a driver's license because of immigration status or English language skill levels may favor bicycling or walking as transportation. Elderly people who ride bicycles or parents with young children often feel safer on off-road bicycle facilities than on shared traffic facilities. Improving the ease and safety of using bicycles or walking for transportation is a low-cost transportation alternative for EJ disadvantaged groups and the public in general. Many Smart Transportation or policy approaches make it more feasible to walk or bicycle to get places; just a few are listed below. The disadvantaged groups to which these strategies may apply include Carless, Poverty, Limited English Proficiency, or Elderly.

- Improvements for Bicycling – Improve safety and convenience for bicyclists, especially for people using bicycles for transportation. Examples include provision of bike lanes, bike paths, and bicycle storage facilities to promote bicycles as an alternative to automobiles.
- Improvements for Walking – Improve safety and convenience for pedestrians of all types (such as able-bodied or handicapped, young or old people), but especially for people who need to walk to get places. These improvements should be selected to fit the level of development and population.

Reduce Commuting Costs

These strategies include promoting and implementing solutions to congestion that are affordable or provide a lower-cost alternative to populations that may have limited income. Some of these solutions relate to transit, such as TransitChek; other solutions may deal with Ride-Matching and ridesharing initiatives. The disadvantaged groups to which these strategies may apply include Poverty, Carless, Elderly, Female Head of Household with Child, or Disabled.

- Carpool/Vanpool Programs – Carpooling is sharing a ride with one or more other people for at least most of a trip on a regular basis. Vanpooling is sharing a ride with a larger group of riders who are usually going to the same destination. These programs save time and money and are beneficial for the environment.
- Emergency Ride Home – Serves as a safety net for employees who car/vanpool or use transit service by providing a reliable backup ride if they have to work unusual hours or if an emergency arises.

Communicate Eligibility

Marketing who can use special transit services that may mistakenly be considered to serve a smaller segment of the population than is really eligible promotes a wider range of transit options. It may also help to reduce vehicular use if the other choices attract people who may otherwise drive alone in their cars. This results in a benefit for both disadvantaged and nondisadvantaged groups. In addition, by creating a larger base of ridership, services that may have been in

jeopardy of termination may be allowed to continue and generate greater revenue. The potential disadvantaged groups to which these strategies may apply include Disabled, Elderly, Female Head of Household with Child, Non-Hispanic Minority, Hispanic, or Limited English Proficiency.

- Marketing/Outreach for Transit and TDM Services – This covers outreach, education, planning, and other ways of encouraging use of transit services and Transportation Demand Management (TDM) programs.
- Ride-Matching – Any of a range of ways to help match people willing to coordinate their trip-making. This is most often done with regard to work commutes. There are both public services available and services provided by specific employers. DVRPC has a program called Share-A-Ride. It is a free service that matches commuters with transit services, carpools, vanpools, and walking/bicycling opportunities in the five-county southeastern Pennsylvania region. Transportation Management Associations (TMAs) also provide related programs.

Enhance Nontraditional Transit and Human Service Transportation

These strategies address the forms of transportation that may be relied upon by certain demographic groups. These types of transit may include fixed-route service, but also include modified fixed-route and demand-responsive transportation. This includes providing service to communities that do not have the density to support regular transit service, through small buses or other methods. This allows connections to employment, shopping, and personal services that may otherwise be unattainable or difficult to reach for those without, or with limited, personal vehicle access. The disadvantaged groups to which these strategies may apply include Non-Hispanic Minority, Hispanic, Limited English Proficiency, Carless, Poverty, Elderly, Disabled, or Female Head of Household with Child.

- Flexible Routing/Route Deviation Service – This is an approach that increases passenger convenience for fixed-route bus riders by building in ability for buses to deviate within a defined distance, such as a quarter-mile, from a fixed route.
- Shuttle Service to Stations – Shuttle services may be added to make existing services more accessible or to efficiently expand their reach in less-dense areas. Smaller vehicles can provide loops or demand-responsive services to train stations, bus stops, or other multimodal transportation transfer centers.

Encourage Full Use of Job Access Reverse Commute Route (JARC) and New Freedoms Initiative Programs

These strategies include promoting and continuing financial support for JARC and New Freedoms initiatives. The JARC program strives to eliminate transportation barriers that make it difficult for welfare recipients and other transit-dependent individuals to enter the workforce. This includes individuals who live in an inner-city or low-income community in the suburbs, but need to commute to outlying suburbs for employment. As congestion is also occasionally a problem for reverse commutes, this helps to reduce individual automobiles on the road in both city-to-suburb and suburb-to-city traffic directions. The New Freedoms program strives to eliminate transportation barriers that make it difficult for persons with disabilities to enter the workforce. It provides funding for projects aimed at increasing the use primarily of transit and transit facilities for disabled individuals. The disadvantaged groups to which these strategies may apply include Poverty, Carless, Female Head of Household with Child, Elderly, or Disabled.

- Accessibility and Environmental Justice – These are policies and reviews of existing approaches that focus on the ability of all segments of the population to get where they need to go and ensuring that transportation investments (and impacts) are spread in a fair manner throughout the region. This includes policy-level support for JARC programs.
- Transportation Services for Specific Populations – This is the provision of services that address specific needs or specific populations. This includes employer-supported shuttles for their employees. It also includes services oriented toward senior citizens, handicapped people, and JARC target populations.

Improve Transportation Safety and Security

As the promotion of increased transit usage usually plays an integral part in reducing automobile congestion, it is important that those who use public transit are provided with a safe and secure experience. Women and the elderly are particularly likely to have safety concerns when traveling late at night or alone. Better lighted stops, security cameras, and emergency phones are a few examples of extra safety measures that may be provided. Providing accurate, real-time information on the arrival of buses will also be helpful so that riders will be able to time their walks to the bus stops to minimize the time they will need to wait for the bus. The disadvantaged groups to which these strategies may apply include Female Head of Household with Child, Elderly, or Carless.

- Enhanced Transit Amenities and Safety – This is the broad range of ways to make it more comfortable, safe, and convenient to use transit. It includes, but is not limited to, onboard features and improvements at transit stops. Improvements at transit stops may include lighting, bus pull-off areas, shelters for passengers, and making it safer for passengers walking to and from stops. Safety may be addressed for the people travelling and also for the vehicles and bicycles left at stations.
- Making Transfers Easier for Passengers – Focused improvements to make it more possible and convenient to fully use all available modes of transportation for their best purposes. Examples might include minor changes in schedules to better mesh bus and train schedules, or improved information and amenities at intermodal centers.

Encourage Services That Make it Easier to Function With Fewer or No Personal Vehicles

This strategy involves encouraging services that make it possible to meet basic needs with limited or no access to a personal vehicle. An example is businesses that provide free delivery of goods from stores, especially within a local range, to encourage transit and nonmotorized access for shopping trips. This benefits not only the EJ disadvantaged groups, but also the public in general. The disadvantaged groups to which these strategies may apply include Carless, Elderly, Disabled, Poverty, or Female Head of Household with Child.

- Local Delivery Service – Encouraging businesses to deliver locally can reduce single-occupancy vehicle trips by making it more feasible to take transit, walk, or bicycle to a store. It also makes it more feasible for households to manage with one less or no vehicles at all.
- Car Shares/Bike Shares – This is an organized program that facilitates sharing automobiles among multiple users without each incurring the fixed coast of owning a car. A charge is associated with each trip. Examples include the PhillyCarShare and Zip Car programs. This concept is expanding to bike-sharing programs with a similar concept.

CHAPTER 3

Evaluation

The CMP was designed to be thorough but manageable, to fully meet applicable regulations, to be relatively easy to update, and to be useful for a variety of users. While there is always more that can be done (and already a list of refinements for next time), the DVRPC CMP is an exciting advance in its field and has been recognized by FHWA repeatedly as an example of a best practice. Following is an overview of the methodology.

An area that received extra attention in the 2009 update was the criteria. The 2006 CMP criteria were modified and refined based on available data and input from the CMP Advisory Committee. In general, selecting criteria involves consideration of what conceptually is most helpful to measure, as well as what reliable data is readily available in all locations for the region. An inherent related consideration is what data will be updated on a regular basis. Extensive policy discussion, sharing of local experience, and verification of data went into the criteria used for the 2009 CMP analysis. The culmination of these efforts is presented in the pages that follow as Regional Analysis. Their use is covered in Updating Corridors. More detail is provided in Appendix A.

The CMP analysis relies on the capabilities of Geographic Information System (GIS) software, which allows analysis that would not have been possible in the past and establishes the capacity for relatively easy and efficient updates in the future.

The evaluation and analysis was completed with the understanding that it is not by itself a complete answer; rather, it assists in better-informed decisions. The analysis was shaped by and extensively discussed by the CMP Advisory Committee. The results of the analysis underlie the conclusions that are the focus of this report.

The methodology adopted at the start of the update outlined a way to develop draft strategies by subcorridor. Very briefly, analysis provided a starting point to update corridors. These corridors were divided into subcorridors, where, at a regional planning scale, similar sets of strategies are applicable. A series of steps was used to prepare a set of strategies unique to each subcorridor.

A secondary goal was to provide toolbox or educational items for use beyond the CMP. A piece that has proven especially relevant for other studies is the Range of Strategies to Reduce Congestion. This has 100 strategies with a brief definition of each one.

Goals and Objectives

A basic tenet of the DVRPC philosophy for the CMP is that it advances the goals of the long-range plan. As the CMP also needs to remain doable and focused, the goals of the long-range plan were summarized into four brief statements. Objectives provide detail to the goal and aid in consideration of the feasible analysis.

Table 2: CMP Goals and Objectives from the Long-Range Plan

Goal	Objective
Roads - Increase mobility and accessibility	Maintain and optimize **major roads**
	Reduce growth in **current congestion**
	Mitigate **future congestion**
	Shape and prepare for **growth**
Transit - Make transit more competitive with driving alone	Support use of **transit where it already exists**
	In **key transit corridors**, reduce congestion experienced by the many people on buses and trolleys
	Invest where **transit is needed** and reward development that makes transit more feasible
Reliability - Increase system reliability for drivers and transit users; increase safety* *DVRPC remains interested in additional and/or better measures of reliability, and works closely with operations planning sources.	Improve safety in **high crash rate areas** (which also reduces nonrecurring delay)
	Study and intelligently address where traffic counts are increasing the most (**minimize new bottlenecks** of recurring delay)*
Land use - Support the land use goals of the region	**Protect rural conservation lands** and the green space network
	To manage transportation demand, **foster land use patterns that reduce the length of trips** and increase the number of reasonable modes

Source: DVRPC, 2010

Regional Analysis

Criteria to evaluate the regional transportation system were developed in an iterative process. A basic question is how to measure the performance of the transportation system in a way that is manageable and repeatable as the system moves toward achieving regional goals. This update started with the extensive work done for the 2006 CMP. A technical paper was prepared assessing whether data used previously had been kept current and whether useful new sources had emerged. Generally, data is only used that is available for the whole region, that will be updated regularly, and that is available for free. Another consideration is looking ahead at the ability of the resulting analysis to suggest strategies and specific projects as a means of implementing the region's goals.

An issue investigated in detail in the data memorandum was whether sources of operations data had matured and spread enough geographically for use in this regional planning effort. The conclusion after investigating the issue was that the operations data was not quite ready for use

in the 2009 CMP, but that it will be ready soon. The paper helped with necessary background coordination to make this possibility a reality, hopefully for the next update.

A table that lists each goal, its objectives, and the criteria to measure the objectives and advance from objectives and criteria to strategies was used throughout the development of the CMP. It is included as Appendix A.

CMP Analysis Criteria

A natural and required step in updating the CMP is analysis of the performance of the regional transportation system. The goals and objectives flow into specific criteria used for this analysis in an iterative process with evaluating available data sources. The CMP analysis criteria were revised with significant input by the CMP Advisory Committee. The following table is a general description of the criteria that were analyzed in the 2009 update. They help answer the question, "Where should we invest in appropriate multimodal strategies to achieve regional goals?" For the actual criteria, see Appendix A.

Table 3: CMP Objectives and Criteria

Objective	Criteria
Maintain and optimize **major roads**	**National Highway System** (NHS) and intermodal facilities
Reduce growth in **current congestion**	Roads with **current peak-hour congestion** measured by high volume-to-capacity (V/C) ratios
Mitigate **future congestion**	Roads with **high V/C ratios in the future** peak-period travel model
Shape and prepare for **growth**	Locations where comparison of the current and future travel model simulations suggest **high growth** in peak-period V/C ratios
Support use of **transit where it already exists**	**Existing transit service** (bus, trolley, or train)
In **key transit corridors**, reduce congestion experienced by the many people on buses and trolleys	Roads that carry a **number of transit riders similar to the capacity of a lane of cars**, adding ridership from the different bus routes using the road
Invest where **transit is needed** and reward development that makes transit more feasible	Areas where **transit might succeed in 2035** based on demographic forecasts regardless of whether they have transit service now
Improve safety in **high crash rate areas** (which also reduces nonrecurring delay)	Major roads where **high crash rates** lead to unexpected congestion
Study and intelligently address where traffic counts are increasing the most (**minimize new bottlenecks** of recurring delay)	**Emerging bottlenecks** based on growth in traffic counts over the last 10 years and existing capacity limitations
Protect rural conservation lands and the green space network	**Current or future development areas** identified in the long-range plan
To manage transportation demand, **foster land use patterns that reduce the length of trips** and increase the number of reasonable modes	Areas with **two or more times the regional average for employment or residential density**

Source: DVRPC, 2010

There is a certain amount of natural change in criteria from one update to the next as best practices or data sources evolve. Beyond that, there were three larger changes between the 2006 and 2009 criteria. These changes were:

- Growing suburban counties expressed concern that there was not sufficient recognition of areas that are growing quickly, and a mix of growth management and starting to think about resulting transportation demand would be good planning in those subcorridors. As a result, a new objective was added ("shape and prepare for growth") with an agreed-upon criteria.
- Transit agencies extensively discussed how to address congestion relating to that mode. In both CMP cycles, it was agreed that congestion on transit vehicles is mainly addressed by transit authorities, but that there are other related elements addressed by a range of entities. In the 2006 CMP, this focused on being able to park at intermodal centers/stations, as that is a real limitation on ability to use the rail and bus systems in some locations. A combination of factors resulted in a different approach for 2009. The focus instead was on key transit corridors. Many roads are used by multiple transit routes. Where multiple heavily used routes all traverse the same road segment, there are locations where transit is carrying as many people as a lane of cars. This analysis is coordinated with Very Small Starts planning done by DVRPC.
- Reliability, bottlenecks, and using operations data were extensively explored. The best feasible approach at the time was to analyze where there had been rapid growth in traffic counts over the past 10 years in locations where there was already some congestion. This analysis can only be done where there were at least two counts in the same location. It is anticipated that more operations data will be available for the next update, and that the way this goal is measured will be reevaluated.

Summarizing Results of Criteria Analysis

The transportation system of the Delaware Valley was evaluated using the CMP criteria. The criteria analysis was performed with GIS software. A file structure was set up to allow considering any one criterion or multiple criteria together. One can view multiple layers of analysis at the same time, but after a few layers, it becomes confusing to understand what is going on. As a result, a system was developed that summarizes how many criteria are in effect. This system allows clicking on any one road section in GIS to know what criteria relate to it and also to map how many criteria are in effect. While the evaluation is multimodal, a representation of the road network was used to gather and summarize the data for drafting and revising corridors.

The system that was developed to summarize how many criteria relate to any location uses points (or portions of points) for criteria that relate to a location represented by a road segment. In this multimodal analysis, buffers were used to incorporate criteria, such as where there is a parallel train line. A road segment may have a maximum of eight points. This was kept consistent with the 2006 analysis, even as an additional criterion was added to a goal in response to requests by the Advisory Committee. For more detail, see Appendix A. Segments with many points indicate roads or corridors where investment in appropriate strategies would likely be especially beneficial to reducing congestion and moving toward the region's goals.

Updating Corridors

For the 2006 CMP, draft corridors were developed and then revised to a point of consensus. The intent was to keep the number of corridors manageable for regional analysis, while covering key movements. The 2009 update started with the agreed-upon 2006 corridors and revised them based on the following considerations:

1. **CMP Analysis Points:** Patterns where there are many criteria in effect have proven reliable representations of major movements of people and goods. Draft corridors were focused

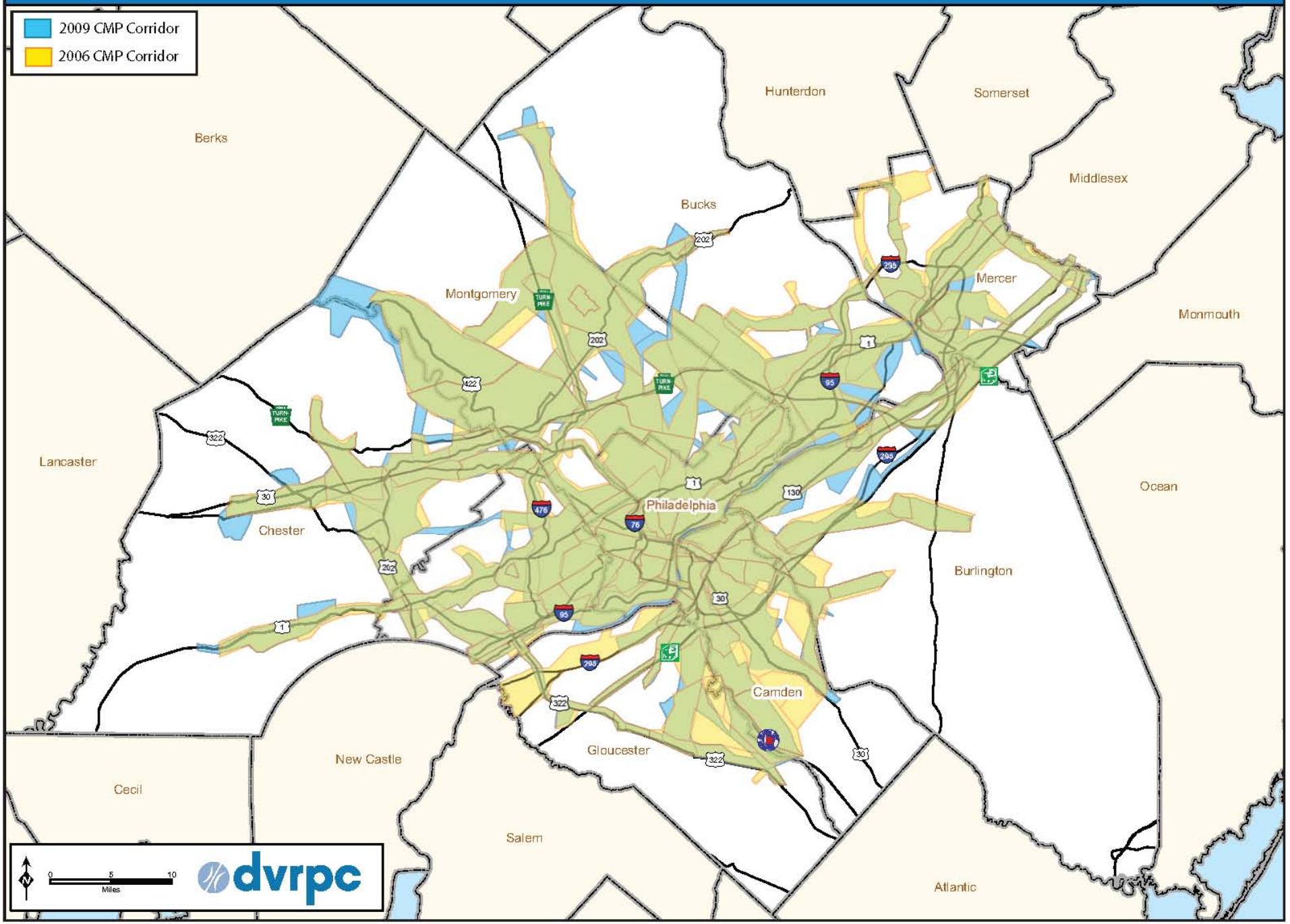
around links with greater than four points (more than four criteria were fulfilled at that location), and other considerations in this list.

2. **Transportation Refinement Data:** Review of highway interchanges, rail stations, emergency detour routes, ITS infrastructure, and previously adopted TIP and Plan projects.
3. **Community Refinement Data:** Concentrations of transportation-disadvantaged populations, brownfield properties where redevelopment opportunities could require transportation improvements, merged parcels of permanently protected open space totaling 20 or more acres, and existing and proposed bicycle and pedestrian multiuse trails.

The draft corridors were then further refined based on documented input from the CMP Advisory Committee. Again, the intent was to keep the number of corridors manageable for regional analysis, while covering all key movements. After the new analysis and careful revision of corridors using it, the new corridors were compared to the old ones. The results were surprisingly similar, essentially confirming the CMP approach. In the following figure, 2006 CMP corridors are shown in yellow, while the updated 2009 corridors are shown in blue. Green areas indicate no change between iterations.

Comparison of 2006 and 2009 CMP Corridors

Figure 2



Advancing from Objectives and Criteria to Strategies

A new step was incorporated in the 2009 update regarding how strategies are selected for further discussion for each congested subcorridor. The change was to more fully incorporate the criteria analysis in developing draft sets of strategies. This added analysis represents an exciting step forward for the CMP.

A new final column was added to the criteria spreadsheet with guidelines for how analysis of the specific criteria identifies potentially appropriate strategies. Where a criterion was extremely significant (for example, V/C ratios that imply not just congestion but gridlock), strategies widely recommended to address that type of situation were considered in prioritized order reflecting the adopted principles described under "Principles" on page two of this report. Levels were set high, in part to keep this exercise manageable and meaningful. In general, the level was adjusted to not apply to more than about 20 subcorridors.

For example, a key transit corridor carrying a number of people similar to that in a lane of cars would suggest strategies including safe access to stops for transit riders, improvements to transit amenities, expanded parking at stations, and additional shuttle service, among other strategies for that subcorridor.

The table below summarizes how the criteria lead to analysis-based strategy guidance. This is a simplified version; for the complete table, see Appendix A.

Table 4: Sample of Analysis-based Strategy Guidance

Sample of Criteria*	Sample of Guidance on Advancing to Strategies†
High volume-to-capacity (V/C) ratio at peak hour	Closed loop computerized traffic signals, making transfers easier, access management
High V/C ratio in peak period of future year model simulation	Where there are both high current and future congestion, start looking at strategies such as new bus route or general purpose lanes in addition to strategies listed above
Sum of total number of people on various bus and trolley routes on a given road segment	Enhanced transit amenities and safety, express transit routes, transit first policies, transit signal priority
High crash rate compared to that functional class of road	Safety education and enforcement (nonauto), safety improvements and programs, incident management
Density of residences or employment two or more times the average for the region	Planning and design for nonmotorized transportation, expanded parking/improved access to stations (all modes), more frequent transit or more hours of service, complete streets

* Note there are several criteria for each objective. These are simplifications; see Appendix A for more detail.
†Where criteria are strongly present, the listed strategies are reviewed (note that just a few examples are listed here).
Source: DVRPC, 2010

Steps to Advance Toward Strategies

The steps used in drafting strategies for the 2009 CMP are as follows:

1. Ten general subcorridor types common in the Delaware Valley provided an initial or seed set of strategies for each subcorridor;

2. Criteria analysis was used to tailor strategies to local conditions for each subcorridor;
3. Dozens of corridor and CMS studies[2] were used to revise strategies and were included as references;
4. Existing major SOV capacity-adding TIP projects were reviewed to be sure that they remained consistent;
5. Input from the CMP Advisory Committee was incorporated throughout strategy development.

The second step was new to the 2009 CMP update. It used the analysis performed for the whole region to briefly investigate the characteristics and causes of congestion of each subcorridor. This step resulted in enhanced subcorridor descriptions and notes, and suggested strategies that may help. This added step improves the connection from regional goal to specific strategies for each subcorridor.

[2] Only those corridor studies performed or commissioned by DVRPC member agencies were considered. Studies by advocacy groups were not included. Recommendations from corridor studies must be consistent with the DVRPC Long-Range Plan to be included in the CMP.

Range of Strategies to Reduce Congestion

There are many strategies that can assist in addressing traffic congestion in the Delaware Valley and help with the flow of people and goods in a way that also advances toward long-range plan goals. Following are 100 potential strategies. Every subcorridor in the region presents its own unique mobility challenges, so care should be taken to select the strategies that best fit with the conditions, goals, and character of the specific area under consideration.

The wide range of strategies that has been identified in this chapter serves two purposes. It was developed as a step in the CMP update cycle. However, it is also an educational resource for planners, engineers, and others thinking about ways to address congestion problems across multiple modes of transportation, in a way that will prove effective for as long as possible while respecting budgetary constraints.

The range of strategies is summarized into the nine categories listed below. Strategies from several categories should be considered in virtually all situations, and adding new road capacity is a last resort as adopted in the principles cited previously in this report.

- **Operational Improvements, Transportation System Management (TSM), and Intelligent Transportation Systems (ITS)** – Projects that maintain, optimize, and modernize the existing transportation system (roads, transit, other), including maintaining and improving safety
- **Transportation Demand Management (TDM)** – Programs and projects that encourage the use of alternative modes of transportation other than driving alone and that otherwise focus on the demand side of trip-making
- **Policy Approaches** – Appropriate policy changes, new policies, regulations, and follow-through on existing agreements that foster land use patterns and other changes to reduce the need for and length of trips
- **Smart Transportation** – These specific strategies provide better conditions for walking, bicycling, and other alternate modes of transportation to automobile travel, and can assist in developing more livable communities (also, see “Policy Approaches”)
- **Public Transit Improvements** – Programs and projects to increase the capacity of existing services and facilities, such as by adding more service on existing routes
- **Road Improvements** – Projects that increase the capacity of existing roads, such as by adding lanes
- **New Public Transit** – Strategies to add new transit capacity, such as new bus or rail lines
- **Goods Movement** – Policies, strategies, and projects to maintain and optimize the safe and efficient movement of freight
- **New Roads** – Capital projects that add new road capacity on new alignments.

Operational Improvements, Transportation System Management (TSM), and Intelligent Transportation Systems (ITS)

Strategies in this category address traffic congestion problems through the improved management of existing roads and transportation facilities. Operational improvements may address such issues as better coordinating traffic signals or more safely managing combinations of through and local vehicles, primarily through engineering-based approaches. TSM is an even broader range of ways to maximize the use of the entire transportation system while minimizing the expense and impacts of building major new capacity. While ITS addresses many of the same goals, it focuses on integrating new technologies and better coordination of data for these purposes. References for the following strategy definitions, shown below in italics and enclosed in parentheses, are provided on page 36.

1. **Intersection Improvements of a Limited Scale** – Minor isolated intersection widening and lane restriping to increase intersection capacity and safety. This may include auxiliary turn lanes (right or left) and widened shoulders (*Pennsylvania Congestion Management System*, p. 19). Intersection design should be Context-Sensitive. Truck routes may need special geometries.
2. **Channelization** – Strategy used in optimizing the flow of traffic for making left or right turns, usually using concrete islands or pavement markings.
3. **Center Turn Lanes** – This strategy is used in conditions where there are many vehicles turning left midblock to reduce the amount that through traffic is slowed.
4. **Jughandles** – These are at-grade ramps provided at or between intersections to permit motorists to make indirect left turns and/or U-turns. (*Signalized Intersections: Informational Guide* , p. 232)
5. **Ramp Metering** – Time-differentiated metering that acts as a traffic signal for vehicles entering freeways in order to control incoming traffic and assist in maintaining vehicle flow on the highways. (*Pennsylvania Congestion Management System*, p. 18)
6. **Bottleneck Removal of a Limited Scale for Cars and Trucks** – Removal or correction of short isolated and temporary lane reductions, substandard design elements, and other physical limitations that form a capacity constraint (*Pennsylvania Congestion Management System*, p. 19). See also Bottleneck Removals for Passenger Rail and for Freight Rail, Intermodal Enhancements for Passengers and for Freight, and Bicyclist and Pedestrian Improvements.
7. **Basic Upgrading of Traffic Signals** – Adjustments and maintenance of signal timing and phasing, installation of new signals as warranted, and the installation and maintenance of activated system components to improve flow and reduce congestion. These components may include the software upgrades necessary to be compatible with basic ITS technologies. This includes equipment update, traffic signal removal, and pretimed signal plans. This is especially applicable to arterials with out-of-date signal equipment and/or high signal densities (*Pennsylvania Congestion Management System*, p. 19). See also Closed Loop Computerized Traffic Signals.
8. **Closed Loop Computerized Traffic Signals** – Linked traffic signal coordination responsive to traffic conditions. Using detectors, a centralized computer will periodically sample traffic flow and determine the most appropriate timing plan and signal phasing. This may be employed for corridors or interconnected areas (*Pennsylvania Congestion Management System*, p. 19). See also ITS/ICM for Freeways.
9. **Intelligent Transportation Systems (ITS)** – Encompasses a broad range of technologies that can relieve congestion, improve safety, and disseminate real-time travel information to the public when integrated into the transportation system's infrastructure. It is primarily applied to freeway systems, and includes such things as network surveillance, regional traffic control, traffic management centers and information dissemination.
10. **Integrated Corridor Management (ICM)** – Building upon ITS technologies, ICM is the coordination of the individual network operations between parallel facilities that creates an interconnected system. A corridor is defined as a combination of parallel surface

transportation networks (e.g., freeway, arterial, transit networks) that link the same major origins and destinations. A coordinated effort between networks along a corridor can effectively manage the total capacity in a way that will result in reduced congestion.

11. **Vehicle Use Limitations and Restrictions** – The outright or time-of-day restrictions of vehicles, usually limited to trucks, to increase roadway capacity. This also includes turn restrictions during peak hours to eliminate conflicting movements (*Pennsylvania Congestion Management System*, p. 18). Scheduling truck deliveries can result in more efficient use of loading facilities (*Integrating Freight Facilities*, p. 22) and can be used to reduce impacts on congestion where trucks park on street.
12. **Road Diets** – Road diets involve a reduction in the number of through lanes, typically reducing a four-lane undivided road to three lanes, to encourage alternate modes of transportation, calm traffic, reduce crashes for all road users, and, in some cases, increase on-street parking. Studies indicate that in conditions where the average daily traffic is under 20,000 vehicles, there is minimal effect on road capacity or travel time (*Corridor Planning Guide*, p.29) [CMP meeting 9/12/08].
13. **Access Management Projects** – This refers to the engineering side of controlling access to and from mainly arterial roadways. Access is controlled through the number and design of driveways, medians, and median lanes (*Pennsylvania Congestion Management System*, p. 17). See also Access Management Policies in the Policy Approaches section (p. 28).
14. **County and Local Road Connectivity** – This is a range of ways to encourage local traffic to use the more local road network in order to maximize use of highways for through traffic. It can be encouraged through enhanced signage, additional connections within the local road network, and state policies such as those being used by NJDOT.
15. **Street Circulation Patterns** – Changing and/or restricting the direction of travel or separating two-way traffic on roadways. This can involve changing the designation of roadways from two-way travel to one-way, or vice-verse (*Introduction to Transportation Access Approaches*, p. 5).
16. **Automated Toll Collection Improvements** – This includes various existing and developing strategies that reduce congestion and delays at tollbooths, including eliminating tollbooths altogether and going to All Electronic Tolls (AET) (*Pennsylvania Congestion Management System*, p. 21).
17. **Signal Preemption for Emergency Vehicles** – Use of technology on board vehicles and within signal infrastructure to prempt the signal timing to create green signals for ambulances and other high-priority response vehicles through the existing road system.
18. **Transit Signal Priority (TSP)** – Use of technology on board vehicles and/or at signalized intersections to temporarily extend green time or otherwise expedite buses, light rail, or trolleys through the existing road system.
19. **Safety Improvements and Programs** – A significant component of frustration with congestion is from unexpected delays, such as those caused by crashes. This item's strategies cover the range of generally low-cost improvements to improve safety in areas with high rates of crashes by evaluating deficiencies and addressing them by use of improved guard rails, lane dividers, signage, line-of-sight clearances, lighting if necessary, minor engineering projects, enhanced enforcement of speed limits, and educational programs.
20. **Incident Management** – These are programs to reduce incident duration by reducing the time for incident detection/verification, response, and clearance (*Pennsylvania Congestion Management System*, p. 20). They usually include improved institutional coordination.
21. **Transportation Security** – Improvements and programs specifically designed to reduce negative transportation impacts of major events of all types. An all-hazards approach prepares the transportation system for events including severe weather, major crashes, terrorist or criminal activities, or very large-scale events. All of these can create massive congestion.
22. **Traveler Information Services** – Provision of pretrip and en route information to travelers on current traffic and other conditions and real-time guidance on route information. This includes advisory services to warn of traffic or transit delays. It is especially relevant to special-event generators and roadways with significant concentrations of travelers unfamiliar with the transportation system (*Pennsylvania Congestion Management System*, pp. 21-22).

23. **Making Intermodal Transfers Easier for Freight** - Improvements to make it more possible and convenient to fully use all available modes of transportation for their best purposes. Examples might include minor improvements to roads needed for truck access to rail sidings or improved communications/ITS approaches. See also Freight Intermodal Center/Yard or Freight Village in the Goods Movement section (p. 29).
24. **Commercial Vehicle Operations (CVO)** – Utilization of ITS technologies to improve efficiency and effectiveness of commercial vehicles. This includes weigh station preclearance, automated safety inspections, and onboard safety monitoring (*Pennsylvania Congestion Management System*, p. 22).
25. **Signage** – Improvements to clearly communicate location and direction information, including adding or removing signs (to reduce clutter), redesigned signs, "trailblazing" to key locations, maintenance of signs and line of sight to them, and pavement markers to provide information.
26. **Maintenance Management** – Employment of strategies to minimize the congestion caused by maintenance and construction activities. This is often already part of the project or program planning done by the implementing agency. This may be referred to as the Traffic Management Plan (TMP).
27. **Parking Operations** – Changes to parking intended to improve the operation of roadways, such as relocating of parking spaces nearest dangerous intersections if line of sight is a problem, incentives to keep short-term parking used as such, and time-of-day limitations on parking.

Transportation Demand Management

These actions reduce peak-hour use of single-occupant automobiles by providing alternatives and/or shifting commuter travel to off-peak hours. These are techniques and actions intended to decrease congestion through alterations in the demand for various transportation facilities (*Pennsylvania Congestion Management System*, p. 16).

28. **Carpool/Vanpool Programs** – Carpooling is sharing a ride with one or more other people for at least most of a trip on a regular basis. Vanpooling is sharing a ride with a larger group of riders usually going to the same destination. These alternative forms of transportation save time and money, and are beneficial for the environment.
29. **Car Sharing** – This is an organized program that facilitates sharing automobiles among multiple users without each incurring the fixed cost of owning a car. A charge is associated with each trip. Examples include the PhillyCarShare and Zip Car programs. This concept is expanding to bike-sharing programs with a similar concept. Some communities are also experimenting with shared Neighborhood Electric Vehicles (NEVs) for short trips.
30. **One-Less-Car Program** – This type of program seeks the involvement of citizens to become a part of the solution for relieving congestion on area roadways. For example, a program in Seattle involved 80 families with two or more vehicles making a commitment to drive one vehicle for a certain time frame and making a diary of trips in the hopes of changing the behavior of car usage.
31. **Park-and-Ride Lots** – These are facilities that serve as a transfer terminal between modes. They may be served by public transportation or can be used for transferring to carpools and vanpools (*Pennsylvania Congestion Management System*, p. 14). This strategy may cover agreements for use of existing spaces, adding additional spaces to existing facilities, or building new lots that do not primarily serve transit (see also Expanded Parking/Improved Access to Stations in the Transit Improvements section, p. 31).
32. **Tolls/Congestion Pricing** – This is a method of reducing congestion by charging for roadway use based on time and/or location of travel to encourage travelers to shift to alternative times, routes, or modes during peak-traffic periods. Higher fees apply during the periods of greatest demand (*Pennsylvania Congestion Management System*, p. 14). This also covers changes to the toll structure for different types of trucks and how this compares to tolls for cars. See also Pricing and Funding Policies in the Policy Approaches section (p. 28).
33. **Parking Supply-and-Demand Management** – These are actions taken to alter the supply and/or demand of a parking system to further the attainment of transportation objectives

(*Pennsylvania Congestion Management System*, p. 15). They can include parking cash-out/transportation allowances, preferred parking areas for car pools or for people who only drive a few times a week, or changes in pricing.

34. **Telecommute** – This involves the elimination of a commute, either partially or completely, to a conventional office through the use of computers and telecommunication technologies (phone, personal computer, modem, fax machine, e-mail, etc.). It can involve either working at home or at a satellite work center that is closer to an employee's home than the conventional office (*Pennsylvania Congestion Management System*, p. 17).
35. **Alternative Work Hours** – These are strategies that reduce vehicle trip demand on highway facilities by shifting it to less congested time periods. This may include work schedules that spread the hours in which trips to and from the workplace occur and the complete elimination of trips to the workplace on some days, such as through compressed work weeks (*Pennsylvania Congestion Management System*, p. 20).
36. **Emergency Ride Home** – Serves as a safety net for employees who car/vanpool or use transit service by providing a reliable backup ride to get them to their destination if they have to work unusual hours or if an emergency arises (*Pennsylvania Congestion Management System*, p. 13).
37. **Marketing/Outreach for Transit and TDM Services** – This covers outreach, education, planning, and other ways of encouraging use of transit services and Transportation Demand Management (TDM) programs. This is applicable to employers, public entities, and the general public. This includes Carpool, Vanpool, Ridesharing programs, Alternate Work Hours, Emergency Ride Home, TransitChek, Car Sharing, One-Less-Car, and other TDM strategies.
38. **Environmental Justice Outreach for Decision-Making** – While general outreach includes the range of groups that have a history and/or likelihood of being adversely affected or not adequately involved in decisions about transportation services, it has tended not to be effective with these populations. Focused outreach may include meetings in different locations, times, or formats than are often used in the process of preparing recommendations or making decisions, and offering translated materials or translators as needed for people to participate.
39. **Multilingual and Nontraditional Communication** – Provide basic information in the languages used in communities with significant populations that speak English as a second language and otherwise communicate transportation options in locally appropriate ways. This includes bus schedules and road project information. In addition to providing access, this increases use of services and reduces the number of confused travelers.
40. **Promotion of TransitChek** – TransitChek is a commuter benefit program that employers can offer to their employees to help pay for commuting on transit. It saves employers and commuters money because the program takes advantage of federal legislation that allows tax-free dollars to pay for transit fares. TransitChek is a DVRPC program.
41. **Ride-Matching** – Any of a range of ways to help match people willing to coordinate their trip-making. This is most often done with regard to work commutes. There are both public services available and services provided by specific employers. DVRPC has a program called **Share-A-Ride**. It is a free service that matches commuters with transit services, carpools, vanpools, and walking/bicycling opportunities in the five-county southeastern Pennsylvania region. The Share-A-Ride program also partners with local employers to provide these services for employees. Transportation Management Agencies (TMA) also provide related programs (*Share-a-Ride*).
42. **Local Delivery Service** – Encouraging businesses to deliver locally can reduce single-occupancy vehicle trips by making it more feasible to take transit, walk, or bicycle to a store. It also makes it more feasible for households to manage with one less or no vehicles at all.

Policy Approaches

These are a wide range of policy and planning strategies that serve to get people and goods to their desired locations while minimizing congestion. Many of these strategies also advance other quality-of-life and related goals, including those of the DVRPC Long-Range Plan and state

policies. Education and outreach are usually a necessary aspect of implementing these approaches effectively.

43. **Growth Management & Smart Growth** – These are ways to encourage the use of land in a manner that reduces overall congestion and transportation costs. These approaches recognize that transportation and land use decisions form a cycle with many implications for communities. Managed and balanced development can reduce trip length by creating a greater job/housing balance and by making it more feasible to get to places by means other than driving alone. This range of ideas includes locating neighborhood schools where students can walk to them and regional schools on transit lines to reduce the duplicative need for buses and congestion from drivers turning into the driveway.
44. **Complete Streets** – Policies that require streets to be designed for all users. The design standards for such streets would serve bicyclists, pedestrians, disabled people, and transit users. A municipality may be able to adopt such standards for future roads and roads under rehabilitation (*Corridor Planning Guide*, p. 29-30) [CMP meeting 9/12/08].
45. **Trip Reduction Ordinances (TRO)** – These are ordinances that use a municipality's regulatory authority to limit trip generation from development sites. They usually cover an entire local political subdivision rather than just an individual project; they spread the burden more equitably between existing and future development; and they may be less vulnerable to legal challenges than conditions imposed on development approvals (*A Toolbox for Alleviating Traffic Congestion*, p. 247). Also known as Employee Trip Reduction (ETR), such approaches may be voluntary or mandatory.
46. **Pricing and Funding Policies** – Various policies that use pricing to shape transportation include gas taxes, insurance structures, VMT taxes, or other approaches. These approaches may be used to shape transportation behavior or raise funds. The funds may be used for transportation in general, or for paying for a specific project. See also the specific application, as Tolls/Congestion Pricing in the TDM section (p. 26).
47. **Transit First Policy** – Implementation and enforcement of policies that give preferential treatment to transit, thereby increasing its attractiveness in comparison to single-occupant vehicle travel and effectiveness as a mobility option (*Pennsylvania Congestion Management System*, p. 14). See also Transit-Oriented Development and Other Planning and Policy Approaches, and Transit Signal Priority in Operations. [Separated Transit First Policy and Transit-Oriented Development per discussion with DVRPC Transit Planning staff member Greg Krykewycz, 9/9/08.]
48. **Transit-Oriented Development (TOD)** – This includes pedestrian-friendly, mixed-use development focused around transit stations. TOD encourages residents and workers to rely on modes other than the automobile. See also Transit First Policy and Other Policies.
49. **Access Management Policies** – Adoption of the right to share access, provide cross access, regulate driveways, or other regulatory authority. This can also include the development of model ordinances and adoption of an access code by itself or as part of other regulations. Access management codes may cover corner lot requirements, continuity of sidewalk/bike networks and pedestrian/transit rider access, and land use (trip making) intensity controls in specific areas. Refer to Access Management Projects in the Operational Improvements section.
50. **Railroad/Linear Right-of-Way Preservation** – Preservation of abandoned railroad rights-of-way for potential future rail service before other development occurs. In addition, other linear rights-of-way should be preserved, such as those for utilities.
51. **Revisions to Existing Land Use/Transportation Regulations** – Revise and better coordinate existing regulations, such as zoning, to reduce future traffic congestion. This can be done using GIS or travel simulation modeling, programs such as UPlan, or buildout analysis. It is desirable that zoning ordinances, subdivision regulations, and other rules reflect master plans and other community goals, such as maintaining reasonable accessibility and quality of life. They can also incorporate access management (see Access Management Projects and Policies in the Operational Improvements section, p. 25).
52. **Accessibility and Environmental Justice** – These are policies and reviews of existing approaches that focus on the ability of all segments of the population to get where they need

to go and ensure that transportation investments (and impacts) are spread in a fair manner throughout the region. This addresses congestion in the sense of potential over demand for some transportation services. Specific examples include policy-level support for Job Access Reverse Commute (JARC) programs and getting transportation information out in relevant formats, such as providing translations in areas where many people are learning English as a second language.

53. **Economic Development Oriented Transportation Policies** – These are transportation strategies that serve the goals of revitalization, renewal, and recentralization of the region in keeping with adopted plans and programs. Such approaches are generally more efficient ways for a region to manage congestion, while retaining or increasing employment than developing new rural areas. Examples may include actively redeveloping brownfields and superfund sites in CMP subcorridors as appropriate for investment of federal transportation funds. Brownfields are often sited near rail or other major transportation facilities and may be ideal for mixed-use, transit-oriented development or freight intermodal centers.
54. **Environmentally Friendly Transportation Policies** – These are transportation strategies that seek to minimize the impacts of transportation on the natural environment in keeping with adopted plans and programs. Included are approaches to minimize stormwater run-off, conserve fuel, improve air quality, and preserve farmland, natural features, and open spaces. These strategies often shorten trip lengths, which helps manage congestion. They may include "Green Streets" programs or projects that help reduce flooding to prevent roads from closing or becoming unsafe during rain storms or other weather events.
55. **Interregional Transportation Coordination** – While part of many other strategies, this is explicit recognition that people and goods travel across regional boundaries and congestion management is made more effective by addressing the need to coordinate and communicate beyond strict geographic lines. This includes coordination of MPOs, transit authorities, and departments of transportation, as well as outreach to key stakeholders, such as the freight community. The strategies include continued strengthening of the transportation planning process.

Smart Transportation

This category serves to "level the playing field" by creating the conditions whereby alternative transportation can thrive and by investing in site-specific improvements. Walking, bicycling, and other related modes are significant ways to make at least some short trips. In the United States, 61.5 percent of all trips were five miles or shorter in 2001, according to the National Household Travel Survey. The percentage for one mile or shorter was not provided, but especially in the more developed parts of the Delaware Valley, it stands to reason that this is a substantial number. Improvements for people using wheelchairs, motorized or not, are included in this category. These improvements may also improve recreational opportunities and safety, address quality-of-life goals, and enhance the livability of neighborhoods.

56. **Context-Sensitive Design** – This application encourages transportation policies and strategies that seek to enhance community character and identity, and incorporate desired growth in keeping with adopted plans and programs. In particular, CSD seeks to engage local stakeholders early in the process to ensure that projects reflect community goals. CSD also encourages designers to consider nontraditional approaches to designing projects for the community context, while maintaining basic design standards. By improving the quality of life and sustainability of communities, they make it possible for more people to have a range of nonauto transportation options; and by reducing the length and number of car trips, they reduce congestion. This is also known as context-sensitive solutions.
57. **Improvements for Walking** – Improve safety and convenience for pedestrians of all types (such as able-bodied or handicapped, young or old people), but especially for people who need to walk to get places. These improvements should be selected to fit the level of development and population. Examples include sidewalk improvements, signals, and markings giving pedestrians the right-of-way. This can include pedestrian countdown type signals (*Pennsylvania Congestion Management System*, p. 14).

58. **Improvements for Bicycling** – Improve safety and convenience for bicyclists, especially for people using bicycles for transportation. Examples include provision of bike lanes, bike paths, and bicycle storage facilities to promote bicycles as an alternative to automobiles (*Pennsylvania Congestion Management System*, p. 14).
59. **Safety Education and Enforcement (nonauto)** – Safety is an important consideration in fully utilizing these nonauto modes of transportation. It can be addressed through support for existing programs and, if necessary, new approaches.
60. **Planning and Design for Nonmotorized Transportation** – This covers the general work to make an area more conducive overall for consideration of any mode other than driving alone. This includes landscaping, streetscaping, and development of regional bicycling and walking plans and maps.
61. **Roundabouts** – These are circular intersections with specific design and traffic control features. Key features include yield control of entering traffic, channelized approaches, and appropriate geometric curvature to slow speeds. Roundabouts provide substantially better operational and safety characteristics than older traffic circles and rotaries and are safer than comparable signalized intersections. (*Roundabouts*, pp. 2, 5)
62. **Traffic Calming** – Specific actions intended to slow vehicular traffic to improve safety or meet other community goals. These goals can include improving pedestrian safety, making roads and streets more hospitable for bicycling and walking, and enhancing the livability of a neighborhood. In a commercial setting, traffic calming can be part of a set of strategies to encourage a more walkable commercial district and to encourage investment. For example, speed tables are sometimes used to reduce the speed and amount of through traffic cutting across residential local streets. This can be paired with improvements on larger roads to better manage the flow of traffic. See also strategies listed in the Policy Approaches section (p. 28), such as Community Oriented Policies.

Transit Improvements

This group of strategies deals with ways to make existing transit services more convenient. This may include transportation by bus, rail, or other conveyance—either publicly or privately owned—providing general or special service (but not including school buses or charter or sightseeing services) on a regular and continuing basis. See www.apta.com/research/stats/overview/gendef.cfm for more background on transit. Also, see some of the more intermodal strategies in the Operational Improvements, Transportation System Management (TSM), and Intelligent Transportation Systems (ITS) category.

63. **Electronic Fare Payment Improvements** – This involves automatic trip payment through the use of noncash media, such as magnetically encoded fare cards (*A Toolbox for Alleviating Traffic Congestion*, p. 286). Increasingly, this method is coordinated with other systems so that one media works across various transit systems, or even for both transit and toll roads.
64. **Advanced Transit System Management** – Use of Automatic Vehicle Locator (AVL) systems on buses to communicate with people riding transit (such as about transfer information) or considering riding it (such as when the next vehicle is expected at a stop). This is sometimes called Intelligent Transit Stops. Advanced Transit System Management may be coordinated through transit centers able to make real-time adjustments to schedules. Additionally, it may include the use of Intelligent Transportation Systems (ITS) technologies for bus, train, and coordinated transit management, including train signals and power grids. See also Transit Signal Preemption.
65. **Express Transit Routes** – This involves having some or all service on a route stop only at major stops in order to transport people more rapidly. It can be done by dropping less heavily used stops from peak-hour scheduled runs or by adding additional express service.
66. **Extensions or Changes in Bus Routes** – This includes review of where bus service is provided, seeking ways to provide better or more efficient service using existing resources. For bus or other services, it may include minor extensions in existing routes to provide service to a broader area.

67. **More Frequent Transit or More Hours of Service** – This involves providing additional service on an existing transit route. It can be done for increased peak service, daily service, or to provide earlier or later service.
68. **Flexible Routing/Route Deviation Service** – This is an approach that increases passenger convenience for fixed-route bus riders by building in ability for buses to deviate within a defined distance, such as a quarter-mile from a fixed route. This may require advance arrangement and is generally used more in rural areas.
69. **Enhanced Transit Amenities and Safety** – This is the broad range of ways to make it more comfortable, safe, and convenient to use transit. It includes, but is not limited to, onboard features and improvements at transit stops. Improvements at transit stops may include lighting, bus pull-off areas, shelters for passengers, and making it safer for passengers walking to and from stops. Safety may be addressed for the people travelling and also for the vehicles and bicycles left at stations. See also Advanced Transit System Management, and Intermodal Enhancements.
70. **Expanded Parking/Improved Access to Stations (all modes)** – Access to stations can be a limiting factor for use of the services that stop at them. There are a range of ways that access can be improved (see also Transit-Oriented Development, Shuttle Service to Stations, and Passenger Intermodal Center or Garage for Transit Riders). Other strategies include improvements for walking and bicycling to transit access points and increasing parking capacity. Within the category of adding to existing facilities, this may be done through added surface lot capacity or agreements with nearby sources of parking. An inexpensive example is assessing whether existing parking lots can be restriped in part or whole with smaller stalls to fit more vehicles in the same space. This could also be assessed in parking requirement regulations.
71. **At-Grade Rail Crossing Safety Improvements** – Improvements to the rail system and/or the crossing road or trail system to increase safety and acceptable speeds, while reducing delays and other impacts. This may include improved coordination and warning systems. A related strategy is to equip a priority set of vehicles (such as school buses, hazardous material haulers, and emergency vehicles) with in-vehicle devices warning of approaching trains, potentially with real-time information on train position (*A Toolbox for Alleviating Traffic Congestion* , pp. 289-290).
72. **Making Transfers Easier for Passengers** – Focused improvements to make it more possible and convenient to fully use all available modes of transportation for their best purposes. Examples might include minor changes in schedules to better mesh bus and train schedules, or improved information and amenities at intermodal centers. These improvements may also be between two providers of one mode, such as convenient walking connections between different train lines or coordination of schedules. New intermodal centers are in the New Transit Facility category.

Road Improvements

These strategies address the area between minor operational improvements and building major new road facilities on new alignments.

73. **High-Occupancy Vehicle (HOV) Treatments** – Improvements that reduce congestion by increasing the person throughput capacity of critically congested corridors. This also includes supporting policies and constructing facilities to encourage the use of HOV (*Pennsylvania Congestion Management System*, p. 15).
74. **General Purpose Lanes** – The addition of one or more through lanes to an existing road.
75. **Frontage or Service Roads** – Road strategies that maintain access to local land uses, while generally increasing the throughput of regional roads. This relates to and would be done with other access management strategies included in this document.
76. **Major Reconstruction with Minor Capacity Additions** – Major reconstruction focuses on the basic use of a roadway, but may increase capacity, safety, and access for other modes. For example, reconstructing a facility so that it meets current design standards may include wider lanes and shoulders, which result in higher actual safe operating speeds. Major new

bridge or bridge replacement projects and interchange reconfigurations may fit into this category.

New Passenger Transit

This group of strategies involves providing new, primarily public transit services. Some examples are new bus routes or new rail lines to areas currently without similar services, or different ways of helping people get to where they are going on a regular and continuing basis.

77. **New Bus Route** – New regular bus service in an area not served by existing routes.
78. **Demand Response Transit Services** – Transit set up by appointment, available to the general public using smaller vehicles (i.e., vans, 30-foot buses, or sometimes taxis). This may be most applicable in areas where transit demand is low or very dispersed.
79. **Shuttle Service to Stations** – Shuttle services may be added to make existing services more accessible or to efficiently expand their reach in less dense areas. Smaller vehicles can provide loops or demand-responsive services to train stations, bus stops, or other multimodal transportation transfer centers. This is sometimes referred to as shuttle bus to line-haul transit (*The 2020 Transit Score Report*, p. 14).
80. **Transportation Services for Special Events** – Shuttle services and other approaches can be provided to get people to and from sporting events, concerts, or other major gatherings. This can be an efficient way to reduce what is generally referred to as nonrecurring congestion, as well as reducing need for expensive investments in infrastructure. These services usually serve outlying parking lots and/or transit stops.
81. **Transportation Services for Specific Populations** – This is the provision of services that address specific needs or specific populations. This includes employer-supported shuttles for its employees. It also includes services oriented toward senior citizens, handicapped people, and Job Access and Reverse Commute (JARC) target populations.
82. **Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes** – At the heart of such strategies is making bus service more competitive with private automobiles. Both of these approaches allow buses to bypass road congestion so they can reach destinations faster. BRT systems may also include enhanced use of ITS and traveler communication services, high-end vehicles, and distinctive marketing. Exclusive bus lanes may be part of existing roads or on new rights-of-way.
83. **Regional or Intercity Rail Service** – This is longer-distance new rail service on new track or track previously not used for this specific service. Such service may be fueled and operated in a variety of ways, including electric or diesel power. This may also focus on improvements in existing services.
84. **Local Fixed-Rail Service (new, extensions, or added stations)** – This is generally oriented to movement within one city, often with linkages to regional transportation. It can be provided in many ways, including trolley, subway, elevated rail, or other approaches. This may mean enhancements of existing services or new services.
85. **Bottleneck Removal for Passenger Rail** – Investing in new bridges, tunnels, switch, or other communication systems significantly increases the capacity of the rail system with limited need for right-of-way. This is also related to Bottleneck Removal for Freight Rail and Intermodal Enhancements (Passenger).
86. **Passenger Intermodal Center or Garage for Transit Riders** – This can range from extensive new facilities such as a landmark building, with a range of services and structured parking, to parking decks for transit stations, to major new surface lots. For a smaller scale, see Park-and-Ride Lots, Expanded Parking/Improved Access to Transit Stations/Stops, and Intermodal Enhancements (Passenger).
87. **Ferry Services** – Passenger or passenger/vehicle services conveying people across major water bodies. Water taxis are closely related.

Goods Movement

Managing congestion on roads generally helps trucks move freight. Beyond that, there are additional strategies that can increase the efficient and safe movement of goods by various

modes (and the points of intermodal transfers). See also strategies in the Operational Improvements, TSM, and ITS category.

88. **Bottleneck Removal for Freight Rail** – Investing in new bridges, tunnels, switch, or other communication systems significantly increases the capacity of the rail system with limited need for new right-of-way. See also Bottleneck Removal for Passenger Rail and Freight Intermodal Center/Yard.
89. **Grade-Crossing Separations** – Highway-railroad crossings that are at-grade create delay for both freight rail operations and the driving public. In instances of high usage, it may be desirable to grade separate the crossing and to create free-flow conditions for both the rail and vehicular traffic.
90. **Freight Rail (rehabilitation or reconstruction)** – Existing rail infrastructure requires routine maintenance and periodic upgrades. Both Pennsylvania and New Jersey have statewide, competitive programs that fund rail freight maintenance projects, with short line railroads often being the beneficiaries.
91. **Freight Rail (new or expanded)** – New rail lines or extensions of existing facilities built to meet the needs of moving freight, including in terms of weight, clearance, and access.
92. **Freight Intermodal Center/Yard or Freight Village** – This can range from major reinvestment making an existing intermodal center more functional to new facilities. It can focus on transfer between modes, such as rail to truck, or transfer within a mode, such as from truckload to less-than-truckload/local delivery vehicles. A freight village is a cluster of freight-related activities within a specific area, which may be served by multiple modes. Benefits include improved traffic management, lower transport costs, value-added activities, and increased reliability.
93. **Port Facility Expansion** – The expansion of existing marine terminals and the creation of new ones helps maximize the use of the region's waterways for freight transportation purposes. At present, there are several major proposed expansions of port facilities along the Delaware and Schuylkill rivers.
94. **Short Sea Shipping** – Now also referred to as the Marine Highway, Short Sea Shipping connotes the use of inland and coastal waterways to move commercial freight from major domestic ports to its destination. With container ships growing larger and calling on fewer ports, Short Sea Shipping is an emerging strategy that makes further use of water transportation.
95. **Truck Parking (short-term)** – The provision of short-term truck parking for various types of deliveries is essential in active locations such as central business districts. Having adequate, designated parking locations prevents unwanted violations and contributes to improved general traffic flows.
96. **Truck Parking (overnight)** – With trucking remaining the predominant mode of domestic freight transportation, the supply of overnight truck parking has emerged as an important consideration in the supply chain. Recent changes to driver hours-of-service regulations have highlighted the need for full-service truck-parking facilities.

New Roads

This group of strategies adds new miles of road on new alignments, generally not replacing existing roads.

97. **Interchange with Related Road Segments** – These are projects at a scale that is expected to change regional transportation patterns. They increase the capacity of the existing road network by increasing interconnection opportunities, capacity, and safety. Large intersection projects with related roads that will add major capacity would be included in this strategy.
98. **Arterial or Collector Road** – New road or substantial extension of an existing road (usually over a mile), generally built with many access points and designed to fit with local conditions.
99. **Bypass** – A bypass of a downtown or city adds new capacity on a new alignment. Such roads may tend to be short to medium in length and address a variety of transportation and other issues.

100. **Limited Access Highway** – The addition of a new facility or extension of existing facilities with accompanying ramps, tollbooths if included, signage, and other related improvements.

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Source: DVRPC, 2010

Table 6: References for Full Range of CMP Strategies

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Source: DVRPC, 2010

CHAPTER 4

Congested Corridors and Strategies

The extensive analysis and evaluation described in previous sections brought the CMP to a point where everyone was comfortable with the congested corridors and emerging/regionally significant ones. Throughout that process, there was concern that the CMP stay feasible, for example, by not having too many corridors. As a result, there are a relatively manageable 30 congested corridors in the region, with 15 in each state. Those corridors were divided into sections where, at a regional planning level, generally similar strategies seemed applicable, yielding just over 100 subcorridors for which to agree on strategies. Where possible, efforts were made to consolidate subcorridors in comparison to the 2006 CMP in order to simplify future planning efforts and best capture flows of goods and people. The corridors, subcorridors, and strategies were developed in a solid quantitative and qualitative regional planning effort.

The first item in this chapter is DVRPC Congested Corridors, a list of all the corridors. The next item is Overview Maps by state. The third general item is the set of Strategies Appropriate Everywhere. These low-cost, proactive strategies should be a normal consideration in transportation planning.

The lengthy section, Very Appropriate Strategies by Subcorridor, follows with a map for each congested corridor, including its subcorridors, followed by a summary of key information and Very Appropriate strategies for each subcorridor.

In addition to the congested corridors, the maps show emerging/regionally significant corridors. These are more loosely defined corridors where proactive strategies (such as those applicable everywhere) are an especially good investment in the future of the region.

More guidance about how to use the information that follows is provided in the CMP Procedures Memorandum (Publication TM09029), which is available through DVRPC. DVRPC staff is always available to assist in using these CMP materials. In addition, annual outreach meetings are held at PennDOT and NJDOT, given the number of people at each of those agencies with whom interacting with the CMP is required or useful.

The order of strategies reflects the priorities in DVRPC's Perspective on Transportation Planning, first adopted in the 2006 report and readopted in this report.

DVRPC Congested Corridors

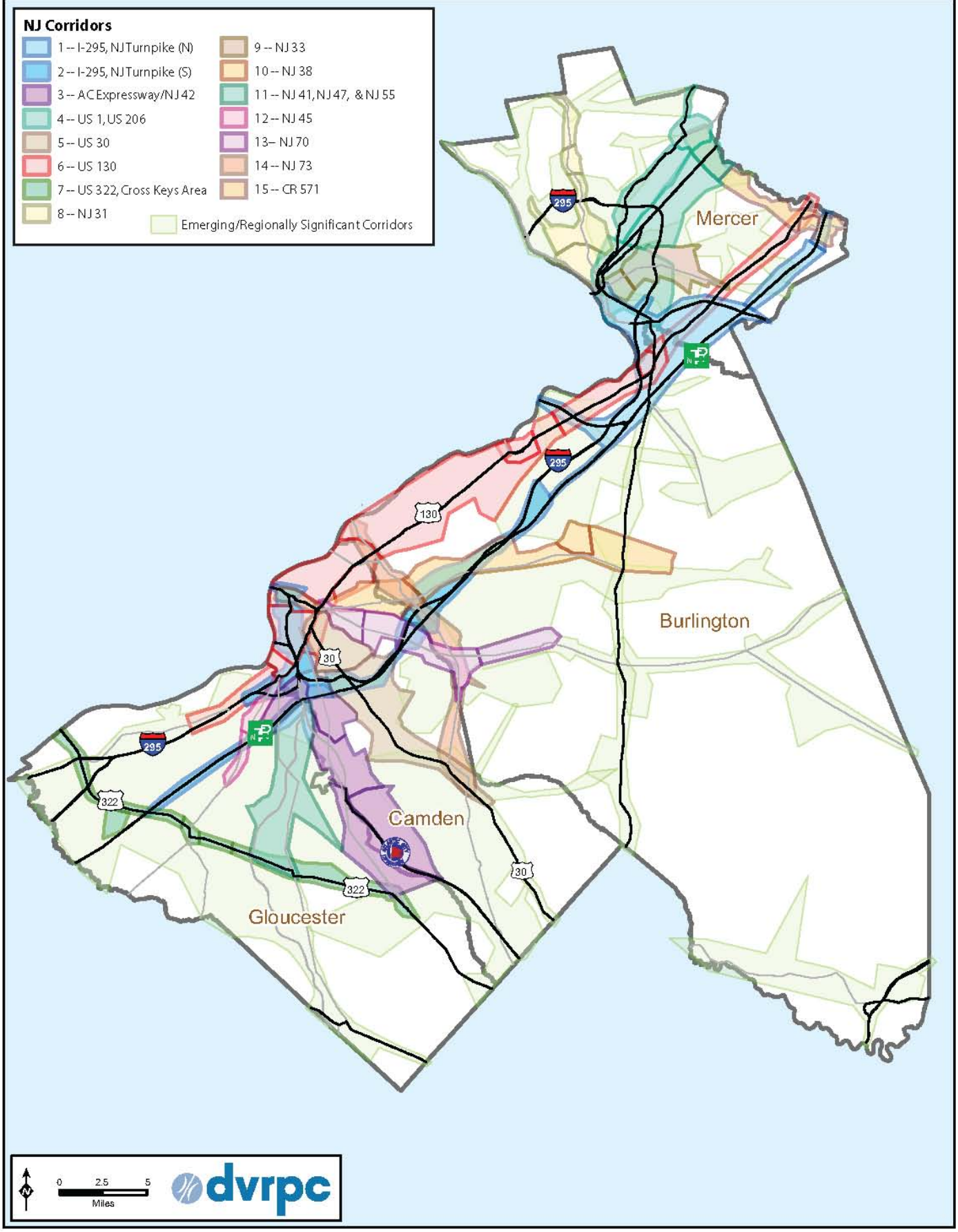
Table 7: DVRPC Congested Corridors by State and ID Number

State	Corridor ID	Focus of Corridor
NJ	1	I – 295, NJ Turnpike (N)
NJ	2	I – 295, NJ Turnpike (S)
NJ	3	AC Expressway/NJ 42
NJ	4	US 1 & US 206
NJ	5	US 30
NJ	6	US 130
NJ	7	US 322, Cross Keys Area
NJ	8	NJ 31
NJ	9	NJ 33
NJ	10	NJ 38
NJ	11	NJ 41, NJ 47, & NJ 55
NJ	12	NJ 45
NJ	13	NJ 70
NJ	14	NJ 73
NJ	15	CR 571
PA	1	I – 276 (PA Turnpike)
PA	2	I – 476
PA	3	I – 76 & I – 676
PA	4	I – 95
PA	5	US 1
PA	6	US 13/MacDade Blvd/PA 291
PA	7	US 30 to Philadelphia
PA	8	US 202, 322, 30, & PA 100
PA	9	US 422
PA	10	PA 3 & Center City
PA	11	PA 113 Area
PA	12	PA 132 & 63, & County Line Road
PA	13	PA 332
PA	14	PA 611 & PA 309
PA	15	Ridge-Lincoln-Cheltenham

Source: DVRPC, 2010

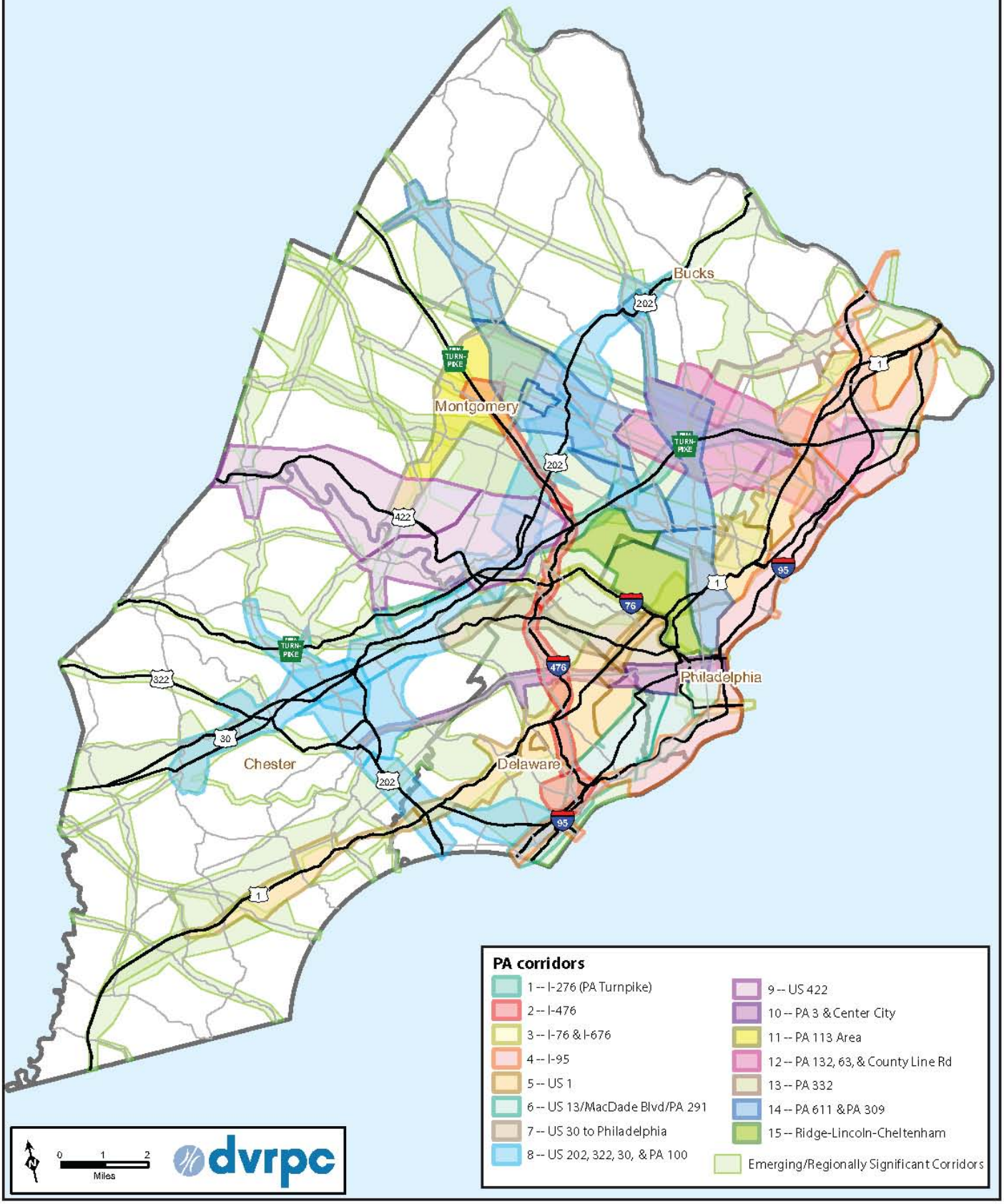
Overview of New Jersey Corridors

Figure 3



Overview of Pennsylvania Corridors

Figure 4



Strategies Appropriate Everywhere

For each of the subcorridors on the following pages, the following low-cost, proactive strategies should be considered in addition to the Very Appropriate and Secondary strategies listed for the subcorridor. These strategies are appropriate for emerging/regional corridors to help prevent them from becoming congested. They are generally appropriate to consider anywhere in the Delaware Valley.

Table 8: CMP Strategies Appropriate Everywhere

Strategies Appropriate Everywhere
Safety Improvements and Programs
Signage
Improvements for Pedestrians and Bicyclists as appropriate
Basic Upgrading of Traffic Signals
Signal Preemption for Emergency Vehicles where needed
Intersection Improvements of a Limited Scale
Bottleneck Improvements of a Limited Scale, Vehicle or Rail
Accessibility and Environmental Justice
Access Management (both engineering and policy strategies)
Marketing/Outreach for Transit and TDM Services where applicable (including carpool, vanpool, and ridesharing programs, alternate work hours, telecommuting, emergency ride home, TransitChek, carsharing, and one-less-car programs)
Revision of Existing Land Use/Transportation Regulations
Growth Management and Smart Growth

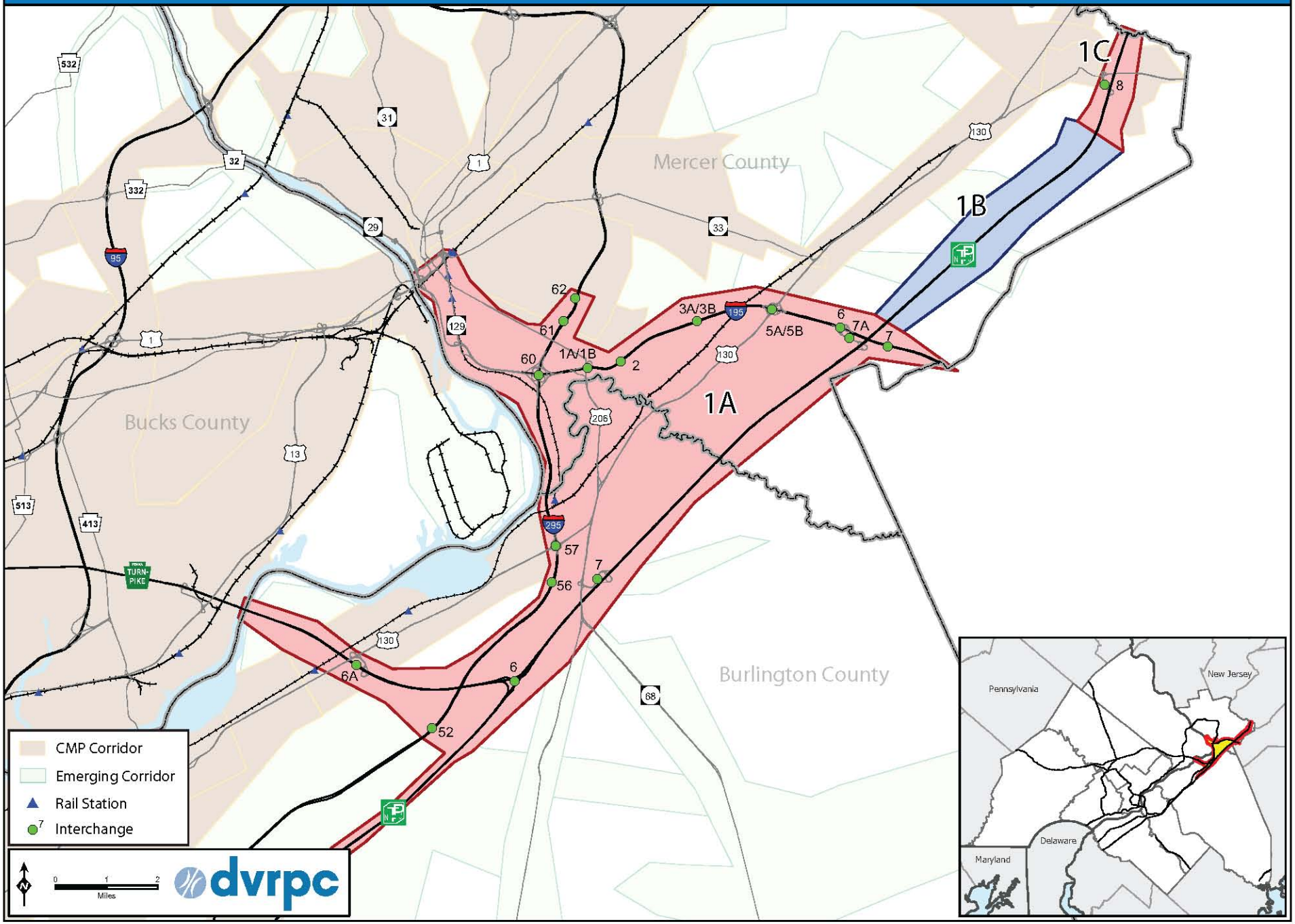
Note that the CMP respects permanently protected open space and other policy commitments of the long-range plan and in no way replaces the EIS or other planning processes. Due to the size of subcorridors, capacity additions may be appropriate for a subcorridor, but not appropriate everywhere in them. Widenings are assumed to be considered on the most major facility first.
Source: DVRPC, 2010

Very Appropriate Strategies by Subcorridor

The following lengthy section includes a map for each congested corridor with its subcorridors, followed by specific Very Appropriate strategies and other pertinent information for each subcorridor.

NJ Corridor 1 - I-295, NJ Turnpike (N)

Figure 5



Corridor ID	Corridor Name	Corridor Notes
1	I-295, NJ Turnpike (N)	New Jersey Turnpike from I-276 merge (Exit 6) northeast to Middlesex County (north of Exit 8). This corridor also includes I-295 between I-276 and the I-195 area, and the movement from the US 1 bridge. It spans the developed area between I-195 and its intersection with the turnpike.
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	I-195; I-295; Turnpike	Interstate highways and nearby related transportation facilities and land uses. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; rail station with 500 or more passenger boardings per weekday; bus ridership is 6,000 or more per day; high concentrations of numerous transportation-disadvantaged populations; 50 percent or more of the subcorridor is environmentally sensitive or protected land; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Express Transit Routes
- Major Reconstruction with Minor Capacity

Strategy Notes

While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies, and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations, including Accessibility and Environmental Justice. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas. The New Jersey Turnpike Widening from Exit 6 to Exit 9 (LRP ID: 71) is listed as a Major Regional Project in the *Connections* plan.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	NJ Turnpike	Narrow, straight turnpike corridor. Subcorridor characteristics include: 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Park-and-Ride Lots
- Major Reconstruction with Minor Capacity

Strategy Notes

The number of lanes drop in this section, so any incidents become a bigger problem; Safety Improvements and Programs seem especially important. While Signage is appropriate everywhere, it is specifically recommended in the 8A Study. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas. The New Jersey Turnpike Widening from Exit 6 to Exit 9 (LRP ID: 71) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

The New Jersey Turnpike Exit 8A Area Transportation & Land Use Study (College of NJ, 2007)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	Exit 8 and further north	Start of major truck activity area. Subcorridor characteristics include: 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Express Transit Routes
- Major Reconstruction with Minor Capacity

Strategy Notes

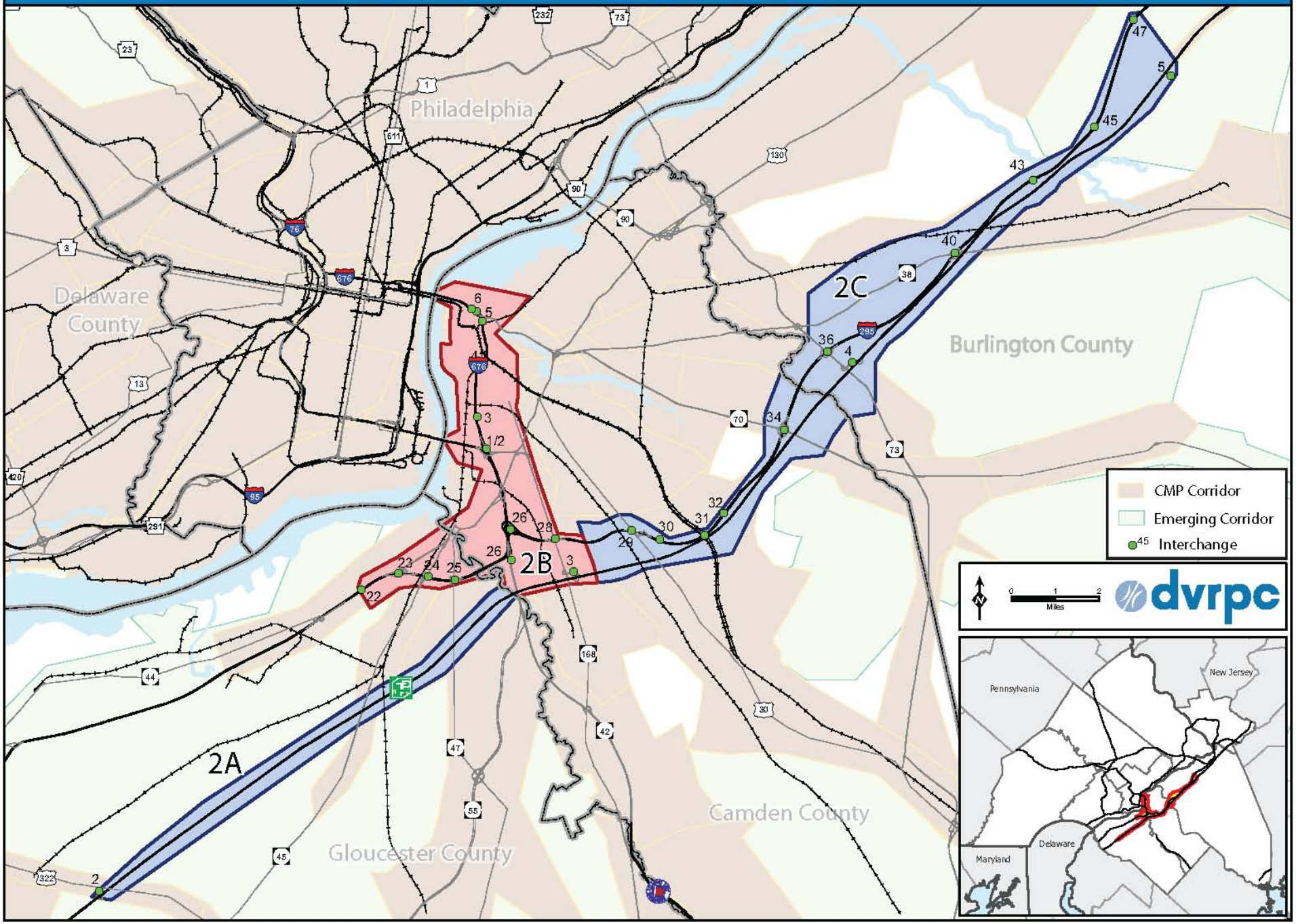
While Signage is appropriate everywhere, it is specifically recommended in the 8A Study. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas. The New Jersey Turnpike Widening from Exit 6 to Exit 9 (LRP ID: 71) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

The New Jersey Turnpike Exit 8A Area Transportation & Land Use Study (College of NJ, 2007)

NJ Corridor 2 - I-295, NJ Turnpike (S)

Figure 6



Corridor ID	Corridor Name	Corridor Notes
2	I-295, NJ Turnpike (S)	NJ Turnpike from south of Exit 5 (vicinity of Rancocas Creek) south to US 322. This corridor includes I-295 from northern Camden County to the Salem County line. It includes I-76/676. The shape was extended to reflect CPA major trip flows.
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	NJ Turnpike in Gloucester County. This was formerly subcorridor 2B.	Few exits. Subcorridor characteristics include: 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Park-and-Ride Lots
- Major Reconstruction with Minor Capacity

Strategy Notes

Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas. DRPA and PATCO are currently planning the addition of new light rail service in this subcorridor. The New Jersey Turnpike Widening from Exit 4 to the Delaware Memorial Bridge (LRP ID: 70) is listed as a Major Regional Project in the *Connections* plan.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	I-295, NJ Turnpike, I-76/676. This was formerly subcorridor 2C.	Southern Camden County and northern edge of Burlington County. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; rail station with 500 or more passenger boardings per weekday; bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Advanced Transit System Management
- Express Transit Routes
- Major Reconstruction with Minor Capacity

Strategy Notes

While Basic Upgrading of Traffic Signals is appropriate everywhere, it is specifically recommended by the Central Gateway Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling

are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. DRPA and PATCO are currently planning the addition of new light rail service in this subcorridor. DRPA has proposed studying the establishment of BRT service in this subcorridor. Reconstructing the NJ 42 Freeway from I-295 to the AC Expressway with a New Interchange at College Drive (LRP ID: 76), and the New Jersey Turnpike Widening from Exit 4 to the Delaware Memorial Bridge (LRP ID: 70), are listed as Major Regional Projects in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP DBNUM	Project Name
355	Route 295/42/I-76, Direct Connection, Camden County
355A	Route 295/42, Missing Moves, Bellmawr

Corridor Studies Include (also see Bibliography)

Central Gateway Traffic Circulation Improvement Project, City of Camden (McCormick & Taylor, 2007)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	NJ Turnpike and I-295 in Camden and Burlington counties. This was formerly subcorridor 2D.	This subcorridor includes the two interstates and the related development around their entrance/exit ramps. Subcorridor characteristics include: high change in VC 2005 to 2035; rail station with 500 or more passenger boardings per weekday; two or more times the average regional density of households or employment; two or more times the regional average of elderly people (over age 75).

Very Appropriate Strategies

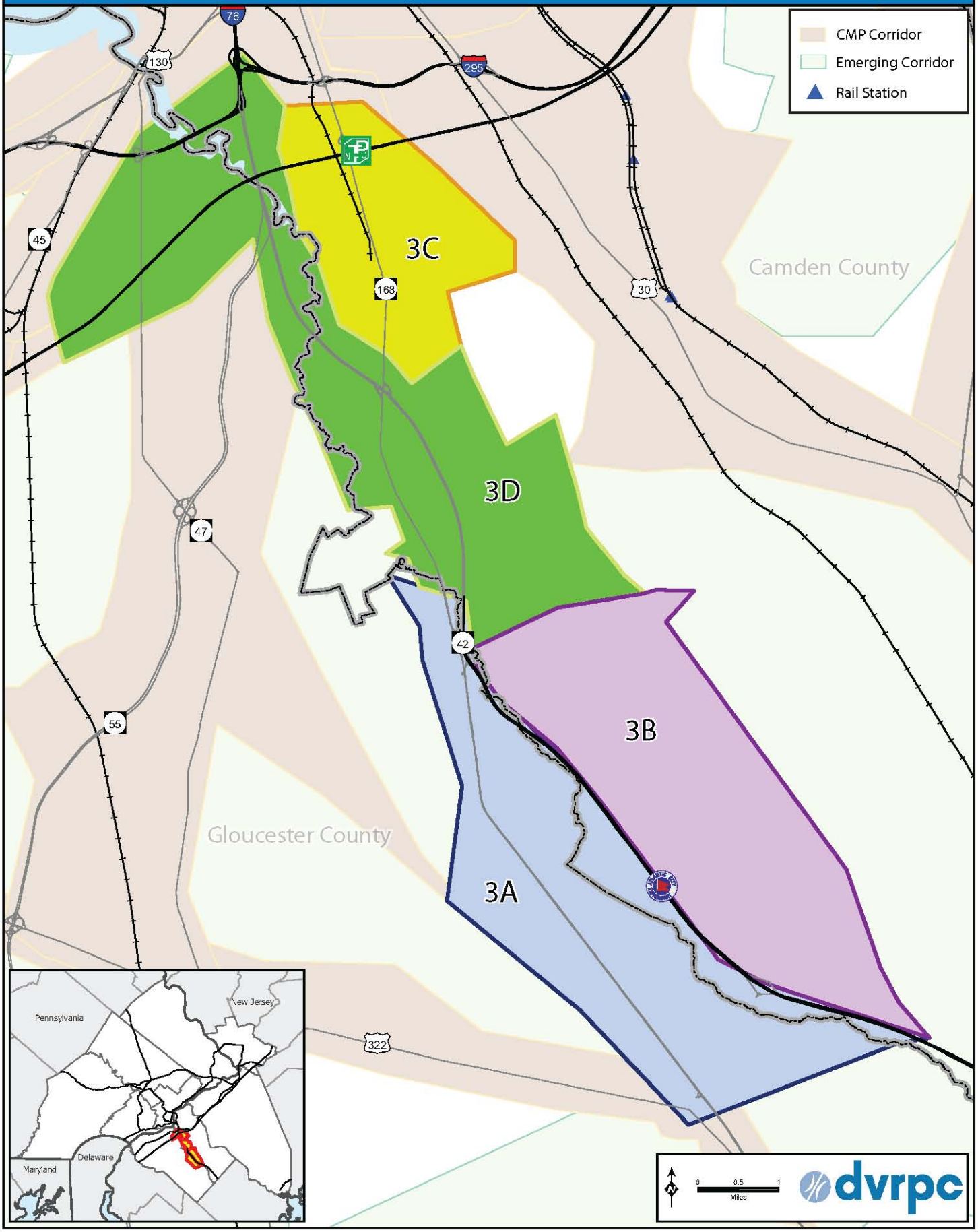
- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Park-and-Ride Lots
- Major Reconstruction with Minor Capacity

Strategy Notes

While Growth Management, Smart Growth, and Access Management are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios in the future based on regional travel modeling. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use (especially rail), dense subcorridors like this one. The New Jersey Turnpike Widening from Exit 4 to the Delaware Memorial Bridge (LRP ID: 70) is listed as a Major Regional Project in the *Connections* plan.

NJ Corridor 3 - AC Expressway/NJ 42

Figure 7



Corridor ID	Corridor Name	Corridor Notes
3	AC Expressway/NJ 42	This broad corridor encompasses NJ 42 from I-295 to the AC Expressway and south of the CR 536 Spur (Sicklerville Road). It includes the large suburban area surrounding this travel corridor, including part of NJ 47 and NJ 168.
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	Atlantic City (AC) Expressway	AC Expressway and west of it, including NJ 42. Subcorridor characteristics include: high current VC; bus ridership is 6,000 or more per day.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Park-and-Ride Lots
- Major Reconstruction with Minor Capacity

Strategy Notes

While Access Management (both engineering and policy strategies) is appropriate everywhere, it is specifically recommended in the NJ 42 Corridor Study. Growth Management and Smart Growth strategies are especially important in corridors with high V/C ratios. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. DRPA has proposed studying the establishment of BRT service in this subcorridor. Reconstructing the NJ 42 Freeway from I-295 to the AC Expressway (LRP ID: 76) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

NJ 42 Corridor Study: A Plan of Action (DVRPC 08046, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	East of AC Expressway	Development pretty much up to AC Expressway. Subcorridor characteristics include: bus ridership is 6,000 or more per day.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Extensions or Changes in Bus Routes

Strategy Notes

While Signage and Basic Upgrading of Traffic Signals are appropriate everywhere, they are specifically recommended by the Winslow Township Congestion and Crash Study. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. DRPA has proposed studying the establishment of BRT service in this subcorridor.

Corridor Studies Include (also see Bibliography)

Winslow Township, Camden County Congestion & Crash Site Analysis Program (DVRPC 08041, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	NJ 41 and NJ 168 (Black Horse Pike). This was formerly 3D.	Developed area in the vicinity of and south of turnpike. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; bus ridership is 6,000 or more per day; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Context-Sensitive Design
- Transit First Policy
- More Frequent Transit or More Hours of Service

Strategy Notes

While Access Management (both engineering and policy strategies) and Improvements for Pedestrians and Bicyclists are appropriate everywhere, they are specifically recommended in the Black Horse Pike Study. Access Management (both engineering and policy strategies) is also specifically recommended in the NJ 42 Corridor Study, as well as the Route 168 Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity.

Corridor Studies Include (also see Bibliography)

Route 168 Corridor Study (DVRPC, 2004), Black Horse Pike: Making It Work (DVRPC 06039, 2006), NJ 42 Corridor Study: A Plan of Action (DVRPC 08046, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
D	Northern developed part of corridor. This was formerly 3E.	Includes access to I-295.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Planning and Design for Nonmotorized Transportation
- Expanded Parking/Improved Access to Stations (all modes)
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)

Strategy Notes

General Purpose Lanes and Interchange with Related Road Segments were appropriate strategies in the 2006 CMP. DBNUM 355 and 355a remain consistent with the CMP for continuity. DRPA has proposed studying the establishment of BRT service in this subcorridor. Reconstructing the NJ 42 Freeway from I-295 to the AC Expressway with a New Interchange at College Drive (LRP ID: 76) is listed as a Major Regional Project in the *Connections* plan.

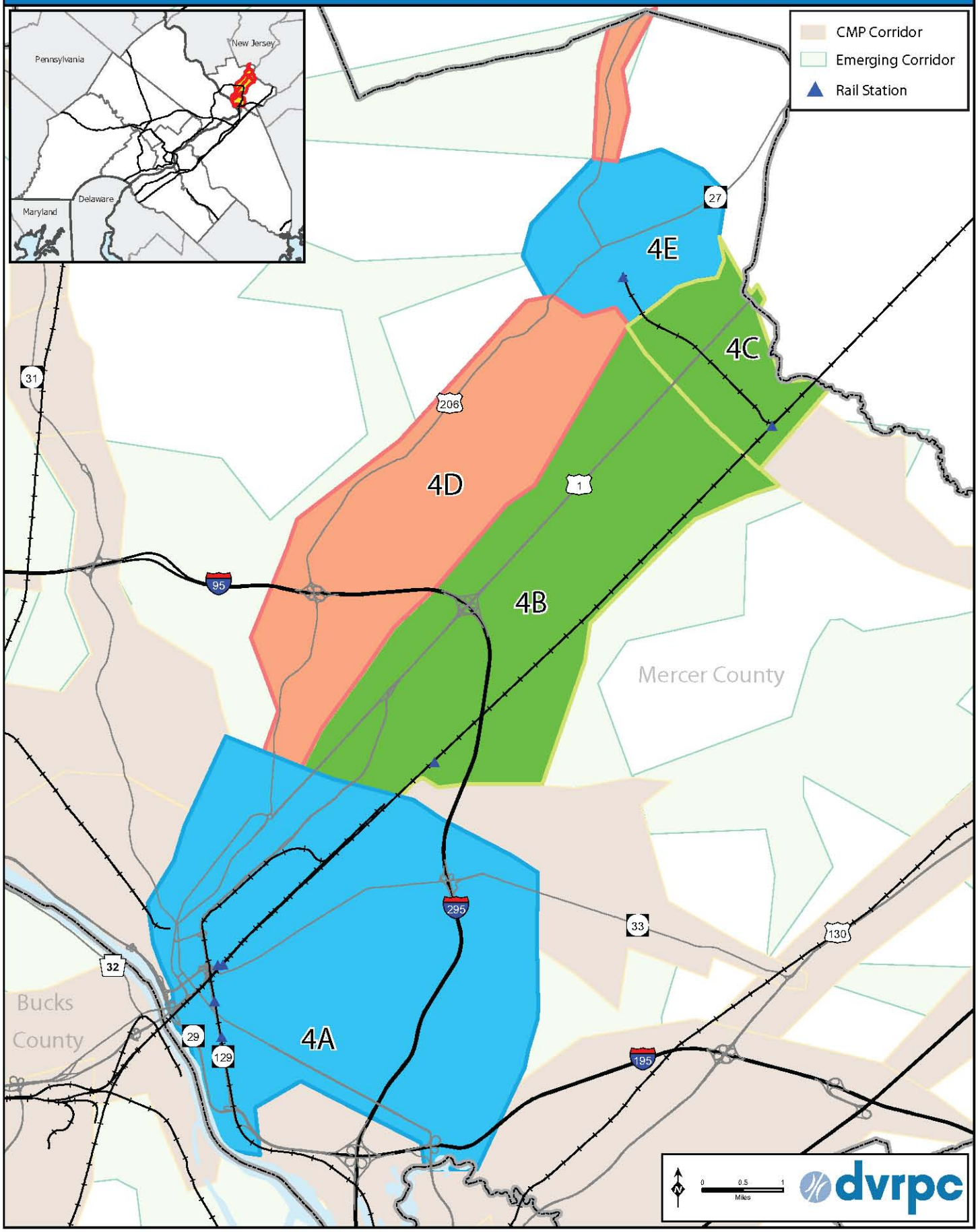
Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP DBNUM	Project Name
355	Route 295/42/I-76, Direct Connection, Camden County
355a	Route 295/42, Missing Moves, Bellmawr

NJ Corridor 4 - US 1 & US 206

Figure 8



Corridor ID	Corridor Name	Corridor Notes
4	US 1 & US 206	This corridor is the broad area surrounding US 1 and US 206 in Mercer County. It Includes the Trenton and Princeton areas.
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	Trenton area	Congested area in and around Trenton where travel is faster on urban streets than on the I-95/295 Ring Road. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; rail station with 500 or more passenger boardings per weekday; bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- Park-and-Ride Lots
- More Frequent Transit or More Hours of Service

Strategy Notes

While Safety Improvements and Programs and Basic Upgrading of Traffic Signals are appropriate everywhere, they are specifically recommended in the Mercer Crossings Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. Converting NJ 29 to an Urban Boulevard from US 1 to Sullivan Way (LRP ID: 31) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

Mercer Crossings Transportation Study: Building a Foundation for Redevelopment (DVRPC 07039, 2008), US 206 Corridor Study (DVRPC 06031, 2006), NJ 29 Waterfront Boulevard Study (NJDOT, Ongoing)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	US 1 area	Between Trenton and Princeton. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; rail station with 500 or more passenger boardings per weekday; bus ridership is 6,000 or more per day; 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Planning and Design for Nonmotorized Transportation
- Expanded Parking/Improved Access to Stations (all modes)
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes

Strategy Notes

Access Management approaches are appropriate everywhere, but are especially important for this subcorridor based on studies and current TIP project work. While Growth Management and Smart Growth strategies, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in subcorridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas. The CR 533 Grade Separated Interchange over CR 638 (LRP ID: 99) and the US 1 BRT (LRP ID: S) are listed as Major Regional Projects in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP DBNUM	Project Name
01330	Route 1, Mercer County Congestion Management & Concept Development Study

Corridor Studies Include (also see Bibliography)

US 206 Corridor Study (DVRPC 06031, 2006), Route 1 BRT Alternatives Analysis (NJ Transit, 2006)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	US 1/Penns Neck area	Alexander Road - County Line, Princeton Junction Rail Station. Subcorridor characteristics include: high current VC; rail station with 500 or more passenger boardings per weekday; 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Planning and Design for Nonmotorized Transportation
- Expanded Parking/Improved Access to Stations (all modes)
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes

Strategy Notes

The Penns Neck EIS and resulting projects include various capacity-adding elements that remain consistent with the CMP. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas. The US 1–Penns Neck Area New Connector Road, Interchanges, and Widening in the Vicinity of Penns

Neck (LRP ID: 84) and the US 1 BRT (LRP ID: S) are listed as Major Regional Projects in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

Penn's Neck FEIS (NJDOT, 2004), Route 1 BRT Alternatives Analysis (NJ Transit, 2006), West Windsor Princeton Junction Redevelopment Study (West Windsor Township, 2005/7)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
D	US 206 area	US 206 between Trenton and Princeton. Subcorridor characteristics include: high change in VC, 2005 to 2035.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Shuttle Service to Stations

Strategy Notes

While Safety Improvements and Programs and Basic Upgrading of Traffic Signals are appropriate everywhere, they are specifically recommended in the Mercer Crossings Study. Improvements for Pedestrians and Intersection Improvements of a Limited Scale are recommended in the US 206 Study. While Growth Management and Smart Growth and Access Management are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios in the future based on regional travel modeling.

Corridor Studies Include (also see Bibliography)

Mercer Crossings Transportation Study: Building a Foundation for Redevelopment (DVRPC 07039, 2008), US 206 Corridor Study (DVRPC 06031, 2006)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
E	Princeton area	Borough plus related part of township; Princeton Train Station, DINKY train line. Subcorridor characteristics include: rail station with 500 or more passenger boardings per weekday; two or more times the average regional density of households or employment; two or more times the regional average of Hispanic people; two or more times the regional average of limited English proficiency.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- Park-and-Ride Lots
- More Frequent Transit or More Hours of Service

Strategy Notes

While Access Management (both engineering and policy strategies) and Basic Upgrading of Traffic Signals are appropriate everywhere, they are specifically recommended in the

Renaissance 2000 Study. Improvements for Pedestrians and Marketing/Outreach for Transit and TDM Services are specifically recommended in the US 206 Study. Improvements for Pedestrians and Bicyclists are especially important in high densities of residences and employment, as can be found in this subcorridor. The US 1 BRT (LRP ID: S) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

Route 27/Renaissance 2000 Corridor Study (Orth-Rogers, 1999), US 206 Corridor Study (DVRPC 06031, 2006)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
F	US 206 to Mercer/Somerset County line	Princeton - Somerset County line. Subcorridor characteristics include: 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Shuttle Service to Stations

Strategy Notes

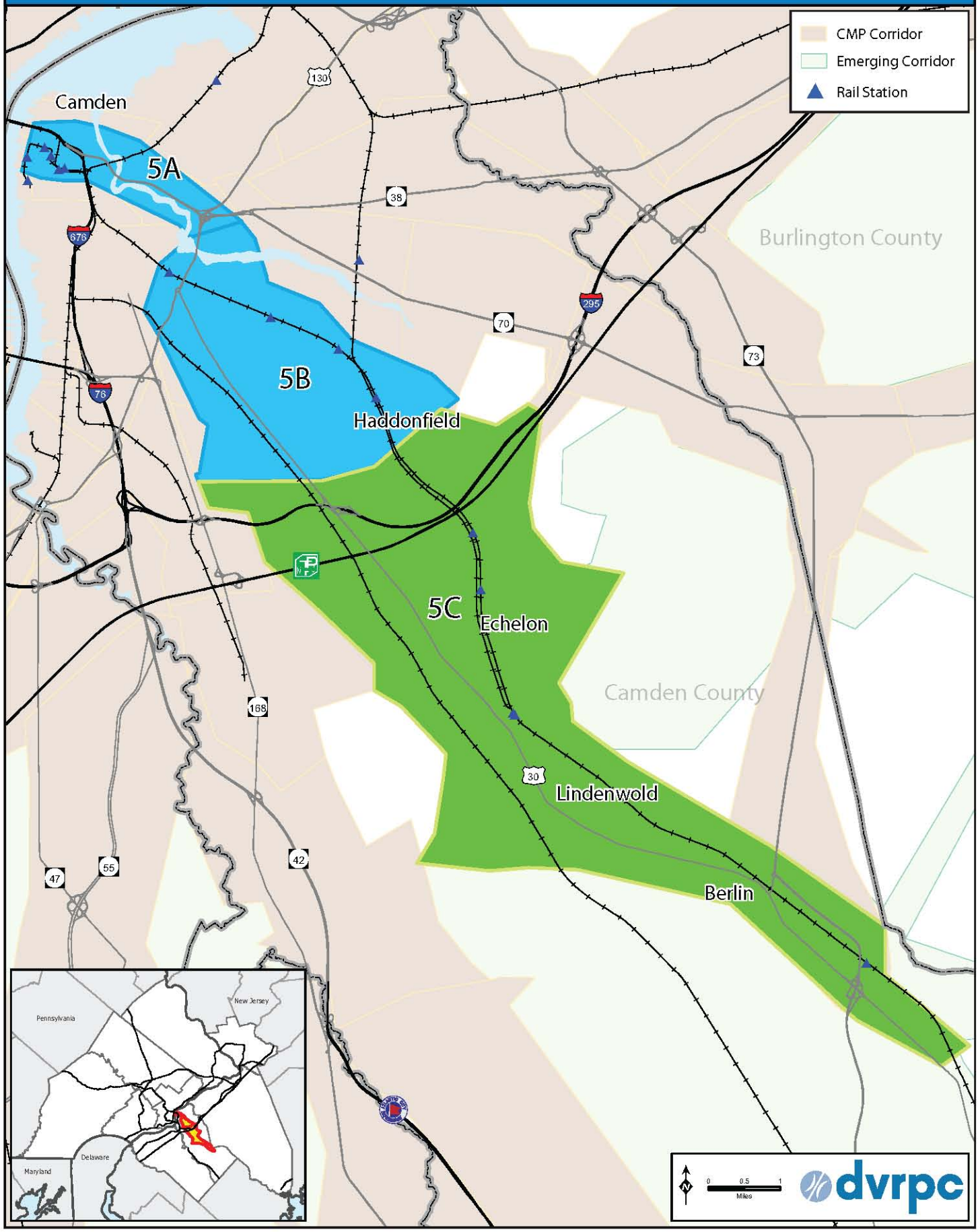
While Marketing/Outreach for Transit and TDM Services is appropriate everywhere, it is specifically recommended in the US 206 Study. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas.

Corridor Studies Include (also see Bibliography)

US 206 Corridor Study (DVRPC 06031, 2006)

NJ Corridor 5 - US 30

Figure 9



Corridor ID	Corridor Name	Corridor Notes
5	US 30	This corridor extends from Camden to Berlin. It includes Haddon Avenue, Lindenwold, and the PATCO Corridor.
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	US 30 in Camden	Admiral Wilson Boulevard is an expressway, but the surrounding area is densely developed. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; rail station with 500 or more passenger boardings per weekday; bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

While Basic Upgrading of Traffic Signals is appropriate everywhere, it is specifically recommended by the Central Gateway Study. Improvements for Pedestrians and Bicyclists, Bottleneck Improvements of a Limited Scale, and Access Management (both engineering and policy strategies) are specifically recommended by the US 30 Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and keeping Land Use/TransportationRegulations up-to-date are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. DRPA and PATCO are currently planning the addition of new light rail service in this subcorridor.

Corridor Studies Include (also see Bibliography)

US 30 Corridor Study (DVRPC 02028, 2002), Intermunicipal Cooperation: White Horse Pike Study (DVRPC et al, 2003) Camden Hub Study, Cramer Hill Redevelopment Project materials (working papers, 2005), Central Gateway Traffic Circulation Improvement Project, City of Camden (McCormick & Taylor, 2007)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	Camden - I-295 area	Collingswood and Haddonfield area. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; rail station with 500 or more passenger boardings per weekday; two or more times the average regional density of households or employment; two or more times the regional average of elderly people (over age 75).

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

While Improvements for Pedestrians and Bicyclists, Bottleneck Improvements of a Limited Scale, and Access Management (both engineering and policy strategies) are appropriate everywhere, they are specifically recommended by the US 30 Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in subcorridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM and Improvements for Walking and Bicycling strategies are appropriate everywhere, they can build upon existing successes in high-transit use (especially rail) dense subcorridors like this one. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity.

Corridor Studies Include (also see Bibliography)

US 30 Corridor Study (DVRPC 02028, 2002), White Horse Pike Economic Development and Land Use Assessment (DVRPC, 2003), Camden Hub Study

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	I-295 to Berlin	Inner ring suburban communities. Subcorridor characteristics include: high change in VC, 2005 to 2035, rail station with 500 or more passenger boardings per weekday; bus ridership is 6,000 or more per day; two or more times the regional average of carless households; two or more times the regional average of non-Hispanic minorities.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Planning and Design for Nonmotorized Transportation
- Expanded Parking/Improved Access to Stations (all modes)
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)

Strategy Notes

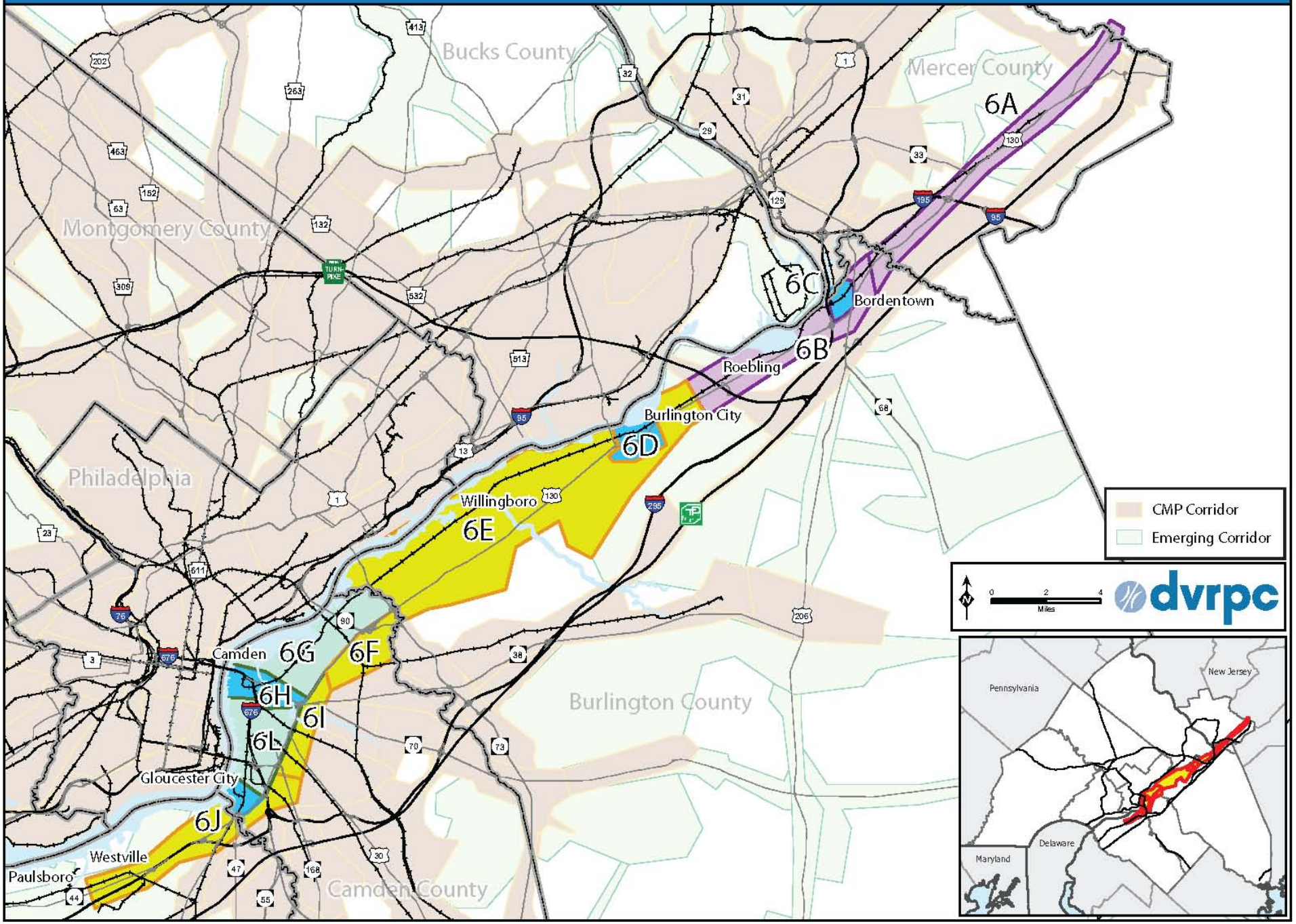
While Improvements for Pedestrians and Bicyclists, Access Management (both engineering and policy strategies), and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are specifically recommended by the US 30 Study (2006). Improvements for Pedestrians and Bicyclists are also recommended in the White Horse Pike Study. While Growth Management and Smart Growth, Access Management, and Bottleneck Improvements of a Limited Scale are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios in the future based on regional travel modeling. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. DRPA has proposed studying the development of a transfer station at the PATCO Woodcrest station.

Corridor Studies Include (also see Bibliography)

US 30 Corridor Study (DVRPC 02028, 2002), White Horse Pike Economic Development and Land Use Assessment (DVRPC, 2003), Camden Hub Study, Congestion and Accident Mitigation (CAMP) Program Report (DVRPC, 2005), US 30 Corridor Study (DVRPC 06036, 2006)

NJ Corridor 6 - US 130

Figure 10



Corridor ID	Corridor Name	Corridor Notes
6	US 130	This long corridor encompasses US 130 between the northern boundary of Mercer County and northern Gloucester County. It is broken into many subcorridors.
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	Washington Township – Hightstown Borough	Lightly developed but developing fast. Subcorridor characteristics include: bus ridership is 6,000 or more per day.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Extensions or Changes in Bus Routes

Strategy Notes

While Marketing/Outreach for Transit and TDM and Improvements for Walking and Bicycling strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP DBNUM	Project Name
99368A	Route 33, Washington Township Bypass

Corridor Studies Include (also see Bibliography)

Washington Township Town Center Plan (Washington Township)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	North of City of Burlington	North of I-95/Bordentown City (but not including it).

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Extensions or Changes in Bus Routes

Strategy Notes

While Safety Improvements and Programs, Signage, Basic Upgrading of Traffic Signals, and Bottleneck Improvements of a Limited Scale are appropriate everywhere, they are specifically recommended in the 130/206 Study.

Corridor Studies Include (also see Bibliography)

Context-Sensitive Vision Plan for Rt 130 (PB, Nelesson, CDM, 2003), Route 130/Delaware River Corridor Extension; Route 206/Farmbelt Corridor Transportation and Circulation Study (DVRPC 03021, 2003)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	City of Bordentown	Subcorridor characteristics include: 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
D	City of Burlington	City of Burlington; the RiverLine. Subcorridor characteristics include: bus ridership is 6,000 or more per day.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Enhanced Transit Amenities and Safety
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

While Marketing/Outreach for Transit and TDM and Improvements for Walking and Bicycling strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. The Seamless Regional Transit Access Study recommends establishing Shuttle Service between Burlington and Bristol, Pennsylvania.

Corridor Studies Include (also see Bibliography)

Route 130 Visioning Study Transportation Planning Deficiency Analysis (Parsons Brinckerhoff, 2003), Congestion and Accident Mitigation (CAMP) Program Report (DVRPC, 2005), Increasing Intermodal Access to Transit, Phase III (DVRPC, 2006), Seamless Regional Transit Access (DVRPC 08069, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
E	Pennsauken - Burlington	Includes the RiverLine. This subcorridor goes around the City of Burlington. Subcorridor characteristics include: high change in VC, 2005 to 2035; two or more times the regional average of limited English proficiency; two or more times the regional average of carless households.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Transit First Policy
- More Frequent Transit or More Hours of Service

Strategy Notes

While Growth Management and Smart Growth and Access Management are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios in the future based on regional travel modeling. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. The Seamless Regional Transit Access study recommends connecting Palmyra Station with the Frankford (PA) Transportation Center via extensions or changes in bus routes.

Corridor Studies Include (also see Bibliography)

NJ 73 Corridor Study (DVRPC 00023, 2000), Context-Sensitive Vision Plan for Route 130 (PB, Nelesson, CDM, 2003), Route 130 Visioning Study Transportation Planning Deficiency Analysis (Parsons Brinckerhoff, 2003), Increasing Intermodal Access to Transit, Phase III (DVRPC, 2006), Seamless Regional Transit Access (DVRPC 08069, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
F	Pennsauken/ Merchantville	US 130 northeast of the central part of Camden.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Transit First Policy
- More Frequent Transit or More Hours of Service

Corridor Studies Include (also see Bibliography)

NJ 73 Corridor Study (DVRPC 00023, 2000)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
G	North Camden/Pennsauken	North part of City to NJ 73, including Cramer Hill area; RiverLine. Subcorridor characteristics include: high change in VC, 2005 to 2035; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Incident Management
- Making Intermodal Transfers Easier for Freight
- Commercial Vehicle Operations (CVO)
- Interregional Transportation Coordination
- Major Reconstruction with Minor Capacity

Strategy Notes

While Growth Management and Smart Growth, Access Management, and Bottleneck Improvements of a Limited Scale are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios in the future based on regional travel modeling. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. Improvements for Pedestrians and Bicyclists are especially important in high densities of residences and employment, as can be found in this subcorridor. Work is underway to construct a transfer station in Pennsauken connecting the RiverLine with the Philadelphia-Atlantic City line.

Corridor Studies Include (also see Bibliography)

NJ 73 Corridor Study (DVRPC 00023, 2000), Camden Truck Route Optimization Project

Subcorridor ID	Subcorridor Name	Subcorridor Notes
H	City of Camden	Grid-type dense development. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; rail station with 500 or more passenger boardings per weekday; bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Enhanced Transit Amenities and Safety
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

While Basic Upgrading of Traffic Signals is appropriate everywhere, it is specifically recommended by the Central Gateway Study. Access Management and Improvements for Pedestrians and Bicyclists are specifically recommended in the Black Horse Pike Study. Signage and Intersection Improvements (of a limited scale) are specifically recommended in the Camden Truck Route Optimization Project. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately

address problems without also mixing in new capacity. DRPA and PATCO are currently planning the addition of new light rail service in this subcorridor. DRPA has proposed studying the establishment of BRT service in this subcorridor. The Delaware River Tram (LRP ID: M) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

Black Horse Pike: Making It Work (DVRPC 06039, 2006), Central Gateway Traffic Circulation Improvement Project, City of Camden (McCormick & Taylor, 2007), Camden Truck Route Optimization Project

Subcorridor ID	Subcorridor Name	Subcorridor Notes
I	East of US 130 toward the south side of Camden	Includes Pennsauken, Collingswood Borough, Oaklyn Borough, and southern Camden County. Subcorridor characteristics include: high change in VC, 2005 to 2035.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Transit First Policy
- More Frequent Transit or More Hours of Service

Strategy Notes

While Access Management (both engineering and policy strategies) and Improvements for Pedestrians and Bicyclists are appropriate everywhere, they are specifically recommended in the Black Horse Pike Study.

Corridor Studies Include (also see Bibliography)

Black Horse Pike: Making It Work (DVRPC 06039, 2006)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
J	US 130 in Gloucester County	North Gloucester County to Camden County. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; bus ridership is 6,000 or more per day.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Transit First Policy
- More Frequent Transit or More Hours of Service

Strategy Notes

While Access Management (both engineering and policy strategies) and Improvements for Pedestrians and Bicyclists are appropriate everywhere, they are specifically recommended in the Black Horse Pike Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in

corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. DRPA and PATCO are currently planning the addition of new light rail service in this subcorridor. DRPA has proposed studying the establishment of BRT service in this subcorridor. The Paulsboro Bridge New Bridge and Roadway Improvements from I-295 to the Paulsboro BP Site (LRP ID: 80) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

Black Horse Pike: Making It Work (DVRPC 06039, 2006)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
K	West of Jersey Avenue	Southport and Gloucester Port redevelopment area.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

DRPA and PATCO are currently planning the addition of new light rail service in this subcorridor.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
L	Camden-Gloucester industrial area	Industrial area between Camden and Gloucester. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; rail station with 500 or more passenger boardings per weekday; bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Incident Management
- Making Intermodal Transfers Easier for Freight
- Commercial Vehicle Operations (CVO)
- Interregional Transportation Coordination
- Major Reconstruction with Minor Capacity

Strategy Notes

While Basic Upgrading of Traffic Signals is appropriate everywhere, it is specifically recommended by the Central Gateway Study. Access Management (both engineering and policy strategies) and Improvements for Pedestrians and Bicyclists are specifically recommended in the Black Horse Pike Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while

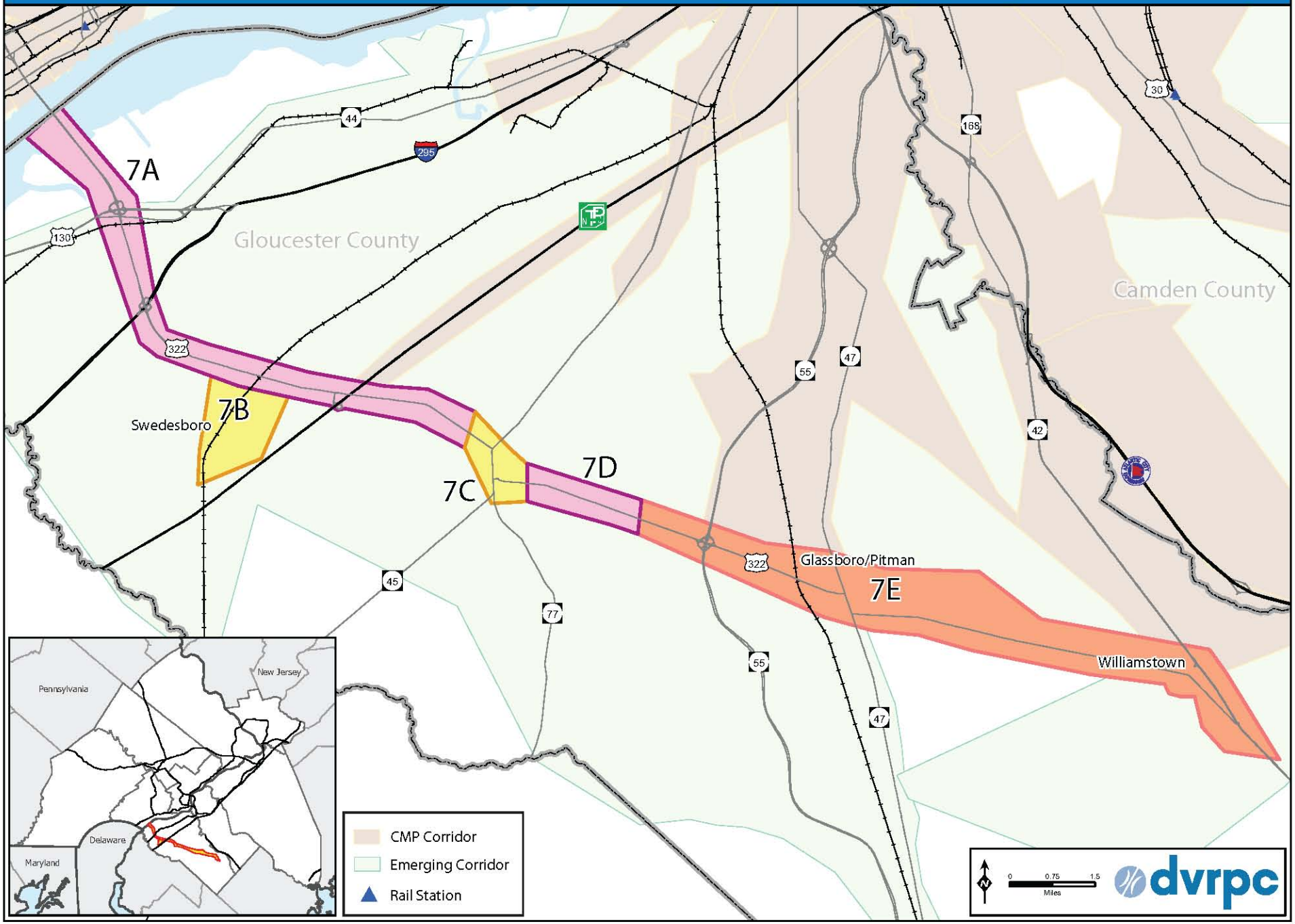
Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. DRPA and PATCO are currently planning the addition of new light rail service in this subcorridor.

Corridor Studies Include (also see Bibliography)

Black Horse Pike: Making It Work (DVRPC 06039, 2006), Central Gateway Traffic Circulation Improvement Project, City of Camden (McCormick & Taylor, 2007); Camden Truck Route Optimization Project

NJ Corridor 7 - US 322

Figure 11



Corridor ID	Corridor Name	Corridor Notes
7	US 322	This corridor includes Commodore Barry Bridge access through the Cross Keys area. It Includes CR 651, NJ 47, CR 634, and CR 689. It broadens toward the east to include the related developed areas of Berlin and Gloucester Township.
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	Commodore Barry Bridge-Mullica Hill	Growth area. Subcorridor characteristics include: 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Channelization
- County and Local Road Connectivity
- Park-and-Ride Lots
- Demand Response Transit Services
- Transportation Services for Specific Populations

Strategy Notes

While Bottleneck Improvements of a Limited Scale and Access Management (both engineering and policy strategies) are appropriate everywhere, they are specifically recommended in the DVRPC US 322 Study. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas. The Seamless Regional Transit Access Study recommends establishing a JARC shuttle between the Pureland Industrial Center and Philadelphia via Chester County. The US 322 Widening from US 130 to the New Jersey Turnpike (LRP ID: 79) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

Route 322 M.P. 4.80-14.90 Logan, Woolwich, and Harrison Townships, Gloucester County, NJ: Tier 2 Report (Urban Engineers, 2003), Managing Change Along the US 322 Corridor: Land Use & Transportation Issues, Policies, & Recommendations (DVRPC 06023, 2006), Seamless Regional Transit Access (DVRPC 08069, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	Swedesboro	Subcorridor characteristics include: 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Parking Operations
- County and Local Road Connectivity
- Transit-Oriented Development (TOD)
- Transportation Services for Specific Populations

Strategy Notes

While Improvements for Pedestrians and Bicyclists are appropriate everywhere, they are specifically recommended in the DVRPC US 322 Study. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas.

Corridor Studies Include (also see Bibliography)

Managing Change Along the US 322 Corridor: Land Use & Transportation Issues, Policies, & Recommendations (DVRPC 06023, 2006)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	Mullica Hill	Trucks reported to be a problem.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Parking Operations
- County and Local Road Connectivity
- Transit-Oriented Development (TOD)
- Transportation Services for Specific Populations

Strategy Notes

Bypass was an appropriate strategy in the 2006 CMP. DBNUM 07639 remains consistent with CMP. While Improvements for Pedestrians and Bicyclists are appropriate everywhere, they are specifically recommended in the DVRPC US 322 Study.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP DBNUM	Project Name
07369	Route 322, Mullica Hill Bypass

Corridor Studies Include (also see Bibliography)

Route 322 M.P. 4.80-14.90 Logan, Woolwich, and Harrison Townships, Gloucester County, NJ: Tier 2 Report (Urban Engineers, 2003), Managing Change Along the US 322 Corridor: Land Use & Transportation Issues, Policies, & Recommendations (DVRPC 06023, 2006)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
D	Glassboro and Richwood area	Between two settled areas.

Very Appropriate Strategies

- Channelization
- County and Local Road Connectivity
- Park-and-Ride Lots
- Demand Response Transit Services
- Transportation Services for Specific Populations

Strategy Notes

While Bottleneck Improvements of a Limited Scale and Access Management (both engineering and policy strategies) are appropriate everywhere, they are specifically recommended in the DVRPC US 322 Study.

Corridor Studies Include (also see Bibliography)

Route 322 M.P. 4.80-14.90 Logan, Woolwich, and Harrison Townships, Gloucester County, NJ: Tier 2 Report (Urban Engineers, 2003), Managing Change Along the US 322 Corridor: Land Use & Transportation Issues, Policies, & Recommendations (DVRPC 06023, 2006)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
E	US 322 vicinity of and east of NJ 55	Highway with regional centers.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Shuttle Service to Stations

Strategy Notes

While Improvements for Pedestrians and Bicyclists, Bottleneck Improvements of a Limited Scale, and Access Management (both engineering and policy strategies) are appropriate everywhere, they are specifically recommended in the DVRPC US 322 Study. DRPA and PATCO are currently planning the addition of new light rail service in this subcorridor.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

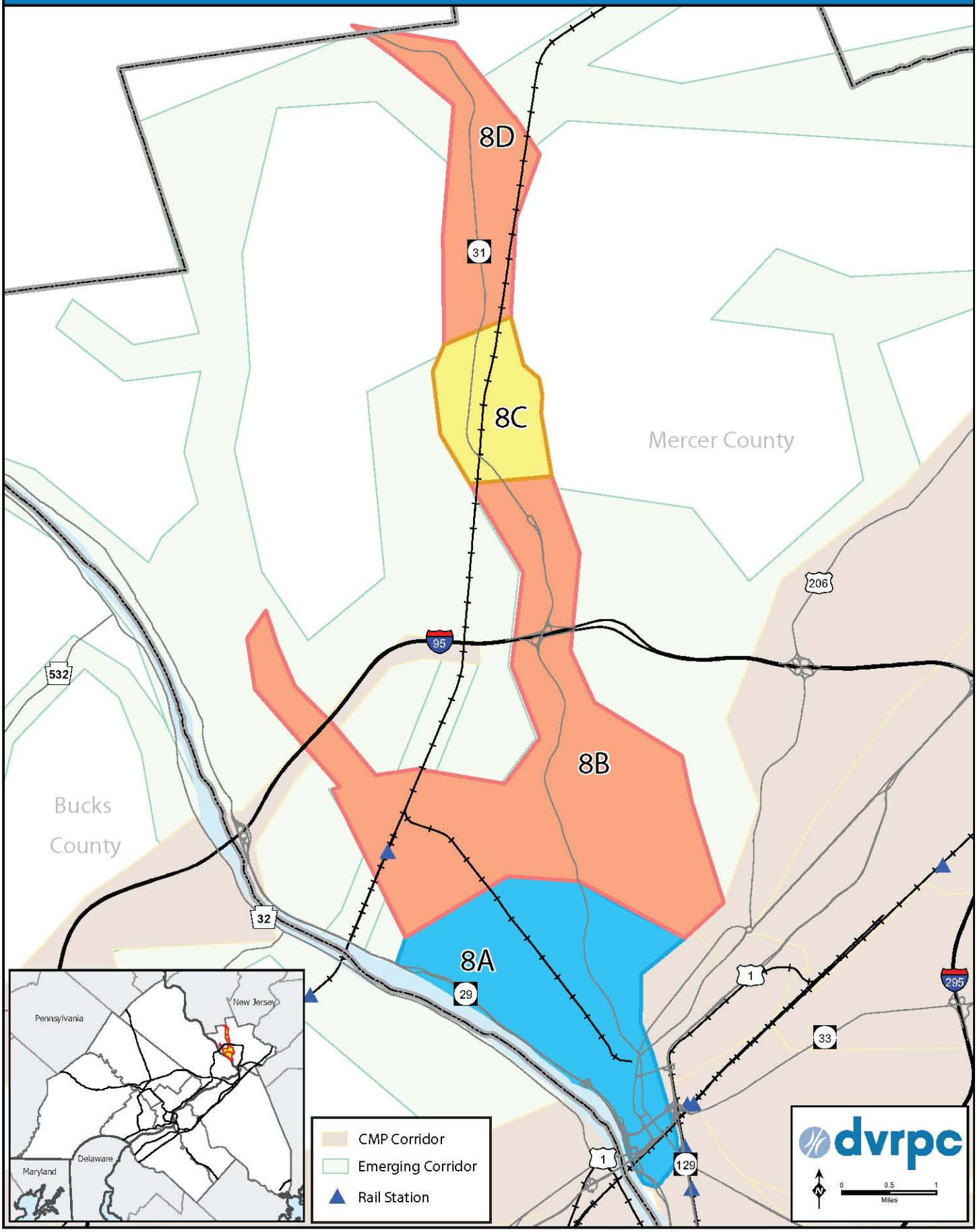
TIP DBNUM	Project Name
97112D	Route 322, Richwood Area, Intersection Improvements

Corridor Studies Include (also see Bibliography)

Route 322 M.P. 4.80-14.90 Logan, Woolwich, and Harrison Townships, Gloucester County, NJ: Tier 2 Report (Urban Engineers, 2003), Managing Change Along the US 322 Corridor: Land Use & Transportation Issues, Policies, & Recommendations (DVRPC 06023, 2006)

NJ Corridor 8 - NJ 31

Figure 12



Corridor ID	Corridor Name	Corridor Notes
8	NJ 31	This corridor started out focused on NJ 31 between Trenton and CR 518, and the CR 518 corridor extending to Hopewell Borough. The north-south movement evaluation led to adding CR 579. CR 636 was also added upon reviews.
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	NJ 31, NJ 29 in Trenton	The Trenton area is densely developed along and around these roads. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

While Safety Improvements and Programs and Basic Upgrading of Traffic Signals are appropriate everywhere, they are specifically recommended in the Mercer Crossings Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. Converting NJ 29 to an Urban Boulevard from US 1 to Sullivan Way (LRP ID: 31) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

Rt 31 Study (NJDOT, 2006), Mercer Crossings Transportation Study: Building a Foundation for Redevelopment (DVRPC 07039, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	NJ 31 south of Pennington, CR 579 south of CR 546	West Trenton/Ewing area; heavy cut-through and truck traffic. High number of crashes.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Road Diets
- Channelization
- County and Local Road Connectivity
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Shuttle Service to Stations

Strategy Notes

While Improvements for Pedestrians, Basic Upgrading of Traffic Signals, and Intersection Improvements of a Limited Scale are appropriate everywhere, they are specifically recommended by the Ewing Township Congestion and Crash Study. Safety Improvements and Programs and Basic Upgrading of Traffic Signals are specifically recommended in the Mercer Crossings Study. The I-95 at Scudders Falls Bridge Widening, Bridge Replacement, and Interchange Reconfiguration (LRP ID: 36) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

Rt 31 Study (NJDOT, 2006), Ewing Township, Mercer County Congestion & Crash Site Analysis Program (DVRPC 08053, 2008), Mercer Crossings Transportation Study: Building a Foundation for Redevelopment (DVRPC 07039, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	Pennington Borough	Pennington has a mix of main street and strip development patterns. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Parking Operations
- County and Local Road Connectivity
- Transit-Oriented Development (TOD)
- Transportation Services for Specific Populations

Strategy Notes

While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. The levels of current and future congestion in this subcorridor are just over the threshold where General Purpose Lanes and New Transit Capacity are appropriate strategies if strategies further up the list cannot adequately address problems without also mixing in new capacity. Adding road capacity should be a final resort after careful study of other ways of solving problems.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
D	NJ 31 north of Pennington; CR 579 north of CR 546	Mostly rural; CR 579 is used for north-south travel as an alternate to NJ 31. Subcorridor characteristics include: 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

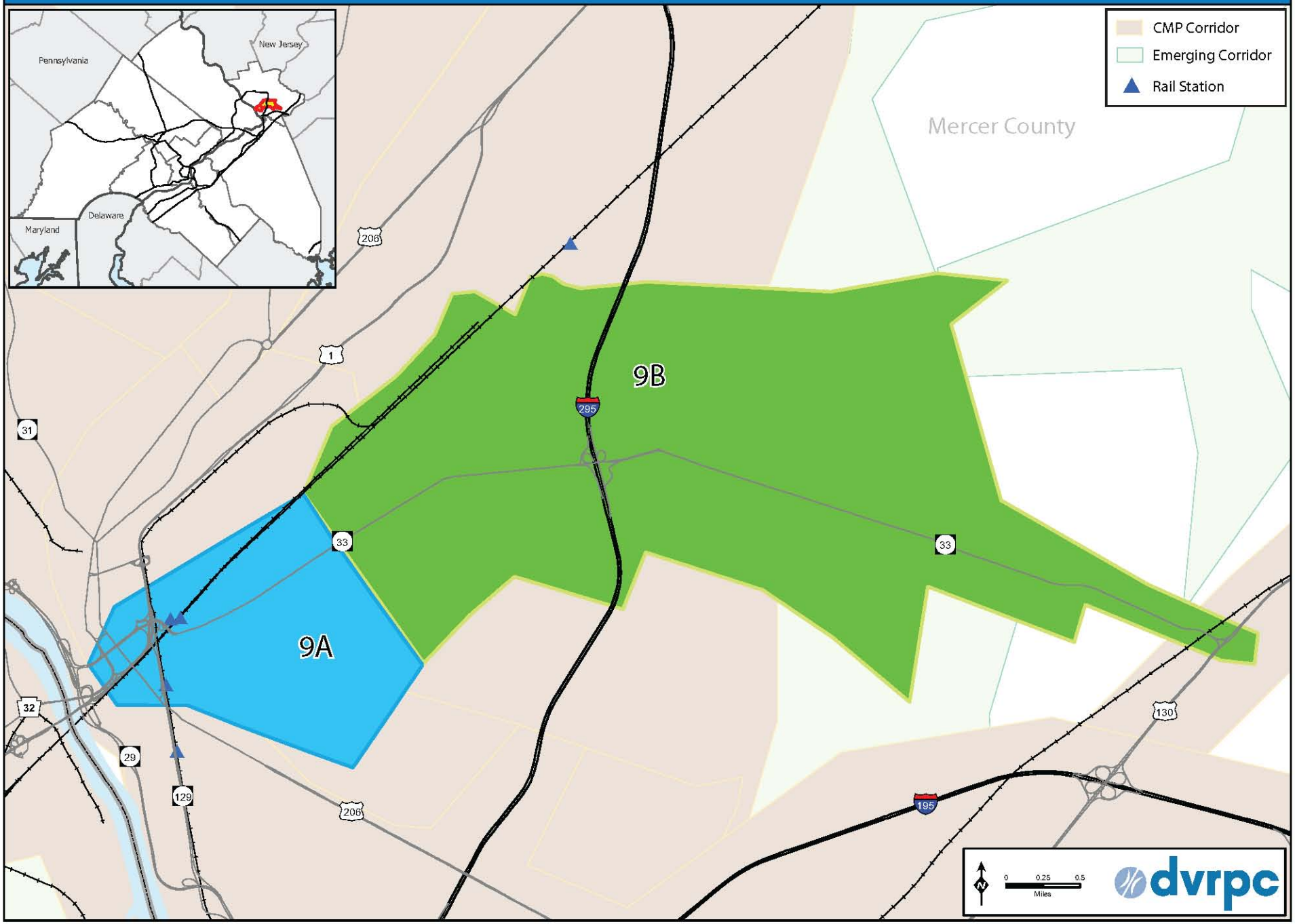
- Closed Loop Computerized Traffic Signals
- Channelization
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Shuttle Service to Stations

Strategy Notes

Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas.

NJ Corridor 9 - NJ 33

Figure 13



Corridor ID	Corridor Name	Corridor Notes
9	NJ 33	General NJ 33 east-west corridor
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	NJ 33 in Trenton area	Urban area. Subcorridor characteristics include: high change in VC, 2005 to 2035; rail station with 500 or more passenger boardings per weekday; bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

While Growth Management and Smart Growth, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios in the future based on regional travel modeling. Similarly, while Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	NJ 33 east of Trenton to US 130	Mostly single-family home development; Washington Township Center proposal. Subcorridor characteristics include: high current VC; two or more times the regional average of elderly people (over age 75).

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Planning and Design for Nonmotorized Transportation
- Expanded Parking/Improved Access to Stations (all modes)
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)

Strategy Notes

DBNUM 99368A is a long-standing smart growth project and is included by reference. While Improvements for Pedestrians and Bicyclists, Basic Upgrading of Traffic Signals, Access Management (both engineering and policy strategies), and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are specifically recommended in the NJ 33 study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

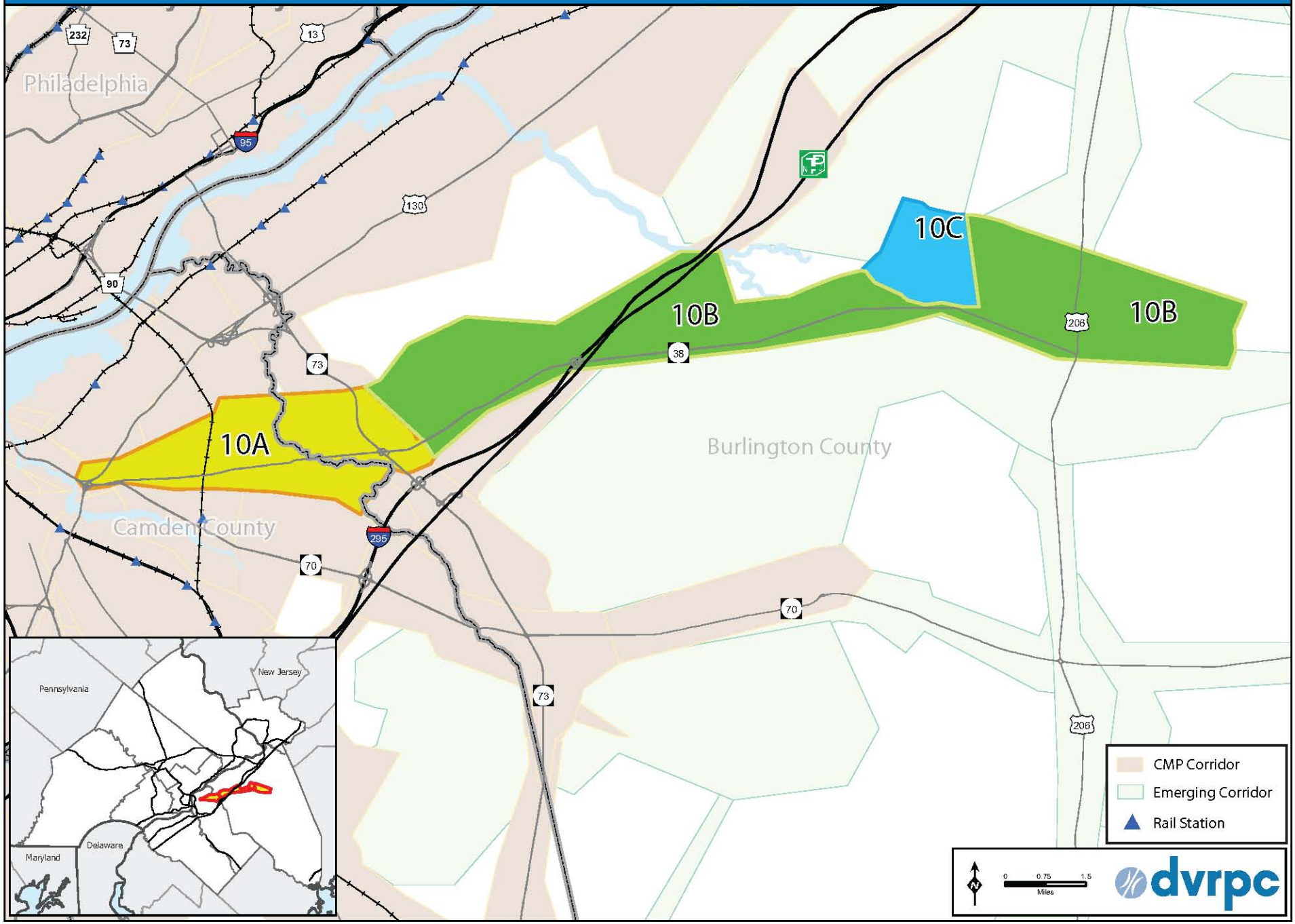
TIP DBNUM	Project Name
99368A	Route 33, Washington Township Bypass

Corridor Studies Include (also see Bibliography)

Washington Township Center Plan (Washington Township), NJ 33 Corridor Study (DVRPC 06025, June 2006)

NJ Corridor 10 - NJ 38

Figure 14



Corridor ID	Corridor Name	Corridor Notes
10	NJ 38	Developed corridor between Camden and Pemberton, including Moorestown and Mount Holly
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	Camden area	Developed area. Subcorridor characteristics include: high current VC; bus ridership is 6,000 or more per day; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Transit First Policy
- More Frequent Transit or More Hours of Service

Strategy Notes

While Improvements for Pedestrians and Bicyclists, Access Management (both engineering and policy strategies), Marketing/Outreach for Transit and TDM Services, and Growth Management and Smart Growth are appropriate everywhere, they are specifically recommended in the NJ 38 Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios. Similarly, while Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP DBNUM	Project Name
94068	Route 73, Fox Meadow Road/Fellowship Road

Corridor Studies Include (also see Bibliography)

NJ 38 Corridor Study (DVRPC 01023, 2001)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	Maple Shade to Borough of Pemberton	Includes Moorestown; interchange with I-295. Road network is almost grid. Does not include Mount Holly.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Planning and Design for Nonmotorized Transportation
- Expanded Parking/Improved Access to Stations (all modes)
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)

Strategy Notes

DBNUM 191A, also in subcorridor 2D. While Basic Upgrading of Traffic Signals, Access Management (both engineering and policy strategies), Marketing/Outreach for Transit and TDM Services, and Growth Management and Smart Growth are appropriate everywhere, they are

specifically recommended in the NJ 38 Study. While Safety Improvements and Programs, Signage, and Basic Upgrading of Traffic Signals are appropriate everywhere, they are specifically recommended in the 130/206 Study.

Corridor Studies Include (also see Bibliography)

NJ 38 Corridor Study (DVRPC Publication 01023, 2001), Hartford Road Traffic Assessment Study (DVRPC 04013, 2004), Route 130 / Delaware River Corridor Extension; Route 206/Farmbelt Corridor Transportation and Circulation Study (DVRPC 03021, 2003)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	Mount Holly	This municipality is separated because its characteristics are different from the surrounding subcorridor. Subcorridor characteristics include: two or more times the average regional density of households or employment; two or more times the regional average of female head of household with child.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

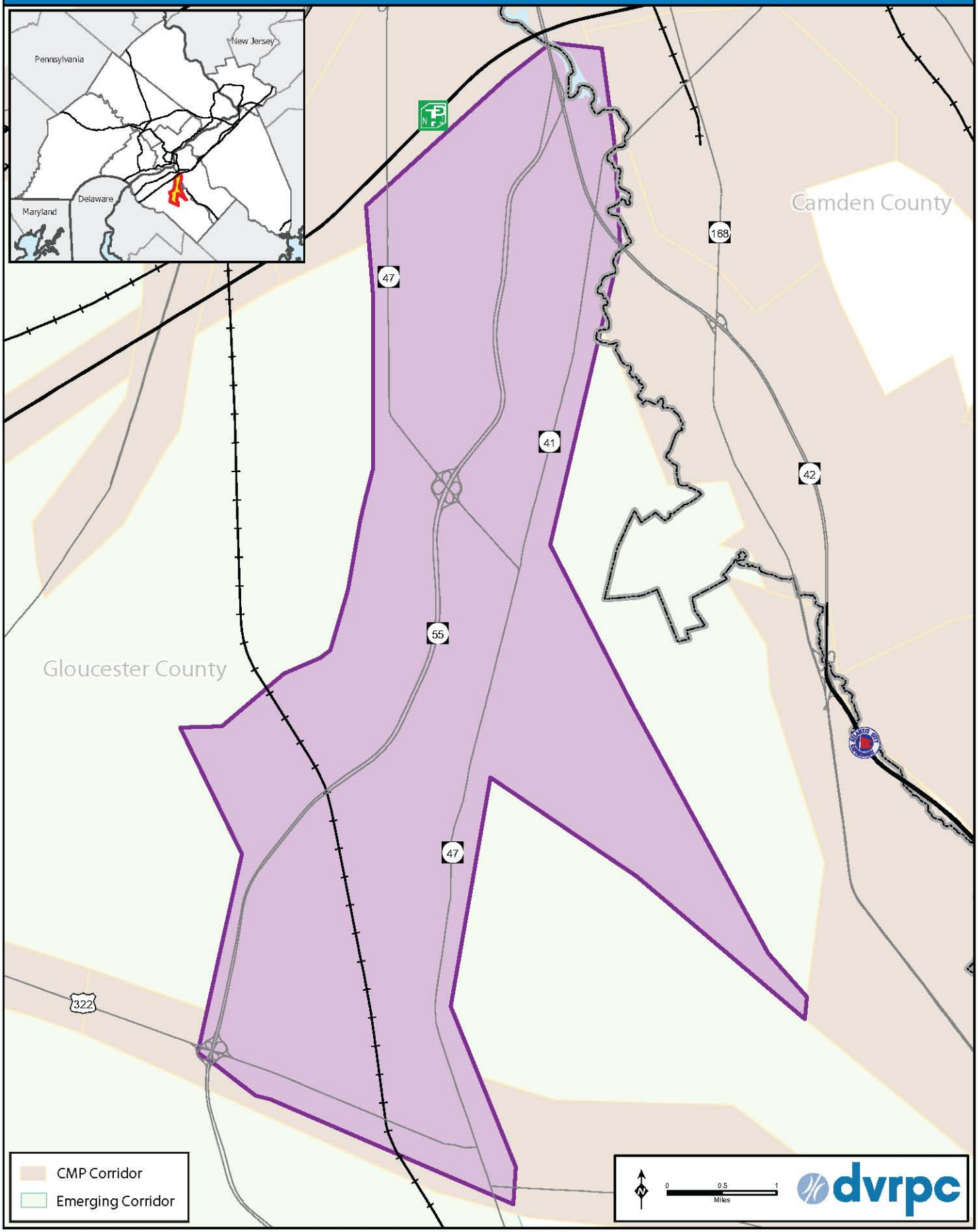
While Basic Upgrading of Traffic Signals and Smart Growth are appropriate everywhere, they are specifically recommended in the NJ 38 Study. Improvements for Pedestrians and Bicyclists are also especially important in high densities of residences and employment, as can be found in this subcorridor.

Corridor Studies Include (also see Bibliography)

NJ 38 Corridor Study (DVRPC Publication 01023, 2001)

NJ Corridor 11 - NJ 41, NJ 47, & NJ 55

Figure 15



Corridor ID	Corridor Name	Corridor Notes
11	NJ 41, NJ 47, and NJ 55	NJ 41, NJ 47, and NJ 55 serve basically parallel north-south movement between the NJ 42/NJ Turnpike area and US 322
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	NJ 41, NJ 47, and NJ 55 between NJ 42 and US 322 (new corridor in 2009)	This subcorridor contains north-south movement of generally parallel facilities. Part of it was in Corridor 3-AC Expressway/NJ 42 and part of it was in Corridor 7—US 322 in the 2006 CMP, but it became more prominent as its own pattern in the 2009 analysis. Subcorridor characteristics include: high current VC, high growth in VC, and high future VC; bus ridership is 6,000 or more per day; two or more times the regional average of elderly people (over age 75).

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Extensions or Changes in Bus Routes

Strategy Notes

While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. Given the levels of current and future congestion, General Purpose Lanes and New Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. DRPA and PATCO are currently planning the addition of new light rail service in this subcorridor. DRPA has proposed studying the establishment of BRT service in this subcorridor.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

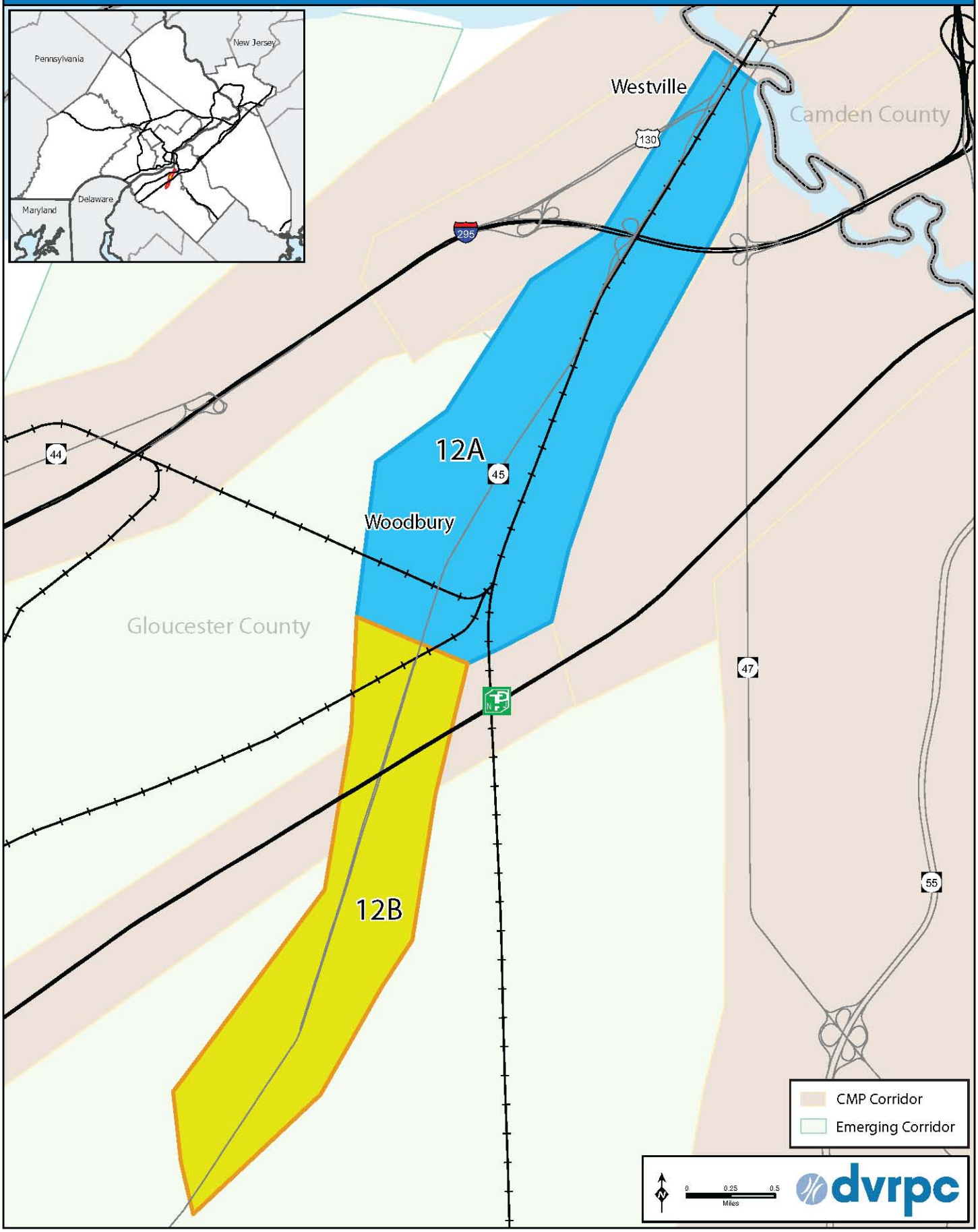
TIP DBNUM	Project Name
D0503	Egg Harbor Road, Hurffville-Cross Keys Road to Hurffville-Grenloch Road, CR 630

Corridor Studies Include (also see Bibliography)

Route 55 - Deptford Traffic Study (DVRPC 06027, 2006)

NJ Corridor 12 - NJ 45

Figure 16



Corridor ID	Corridor Name	Corridor Notes
12	NJ 45	Connects Mullica Hill and Woodbury; developing, especially with housing; serves as a link to I-295
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	City of Woodbury and Borough of Westville	This is the main area of congestion in this corridor. Subcorridor characteristics include: high current VC; two or more times the average regional density of households or employment. Served by many bus routes.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- Transit-Oriented Development (TOD)
- More Frequent Transit or More Hours of Service

Strategy Notes

While Safety Improvements and Programs, Basic Upgrading of Traffic Signals, Intersection Improvements of a Limited Scale, and Access Management (both engineering and policy strategies) are appropriate everywhere, they are specifically recommended in the Route 45 Corridor Study. Signage, Improvements for Pedestrians and Bicyclists, and Revision of Existing Land Use/Transportation Regulations are recommended in the Implementing TOD Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high current V/C ratios. Similarly, while Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. Woodbury is recommended for TOD in the Implementing TOD Study, and several sites for a potential bus terminal are considered. DRPA and PATCO are currently planning the addition of new light rail service in this subcorridor.

Corridor Studies Include (also see Bibliography)

Route 45 Corridor Study (DVRPC 05013, 2005), Implementing Transit-Oriented Development (DVRPC 04044, 2004)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	Mantua-Woodbury area	The southern part is developing; the northern part is older and already developed.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Transit First Policy
- More Frequent Transit or More Hours of Service

Strategy Notes

While Safety Improvements and Programs, Basic Upgrading of Traffic Signals, Intersection Improvements of a Limited Scale, and Access Management (both engineering and policy

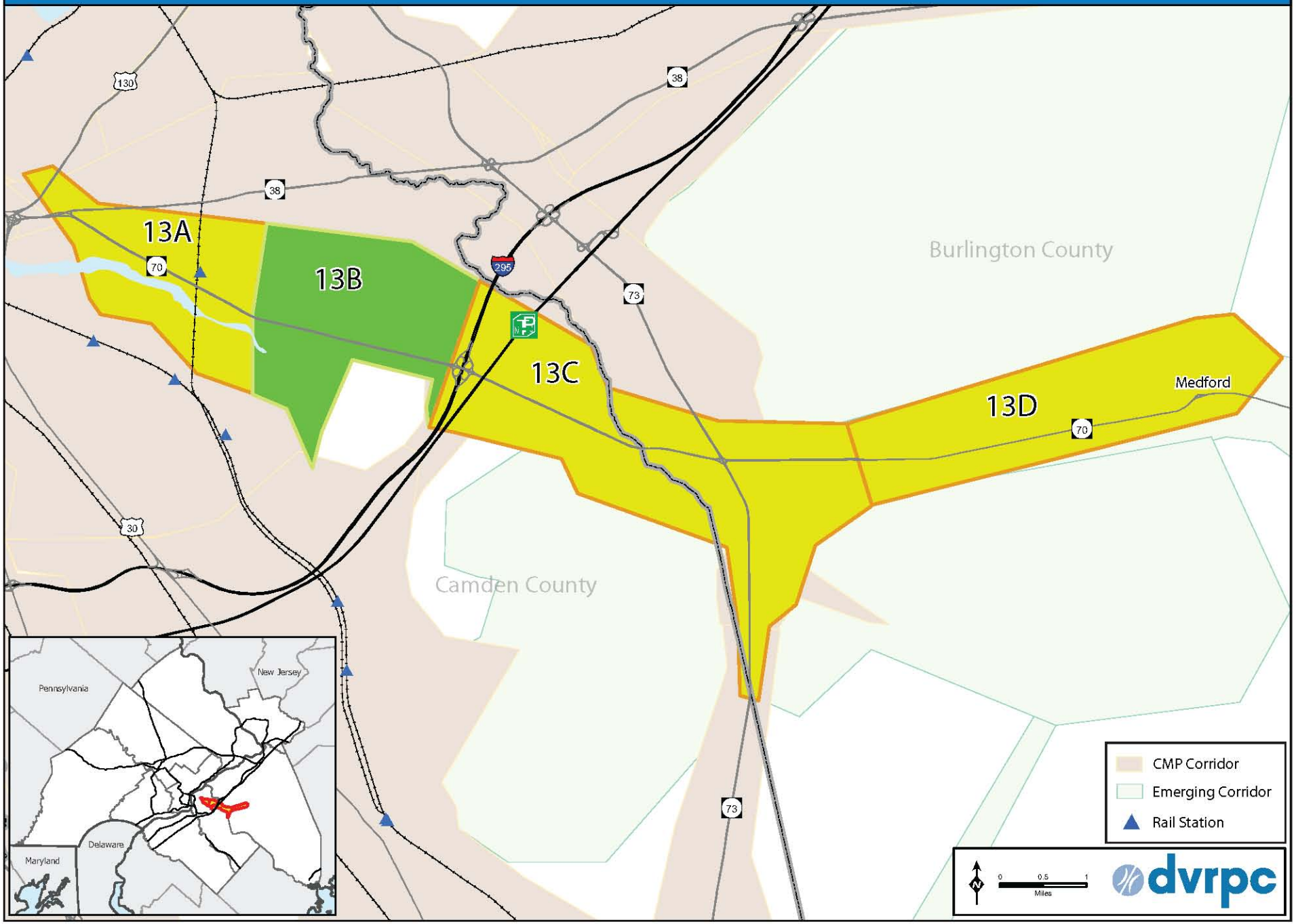
strategies) are appropriate everywhere, they are specifically recommended in the Route 45 Study.

Corridor Studies Include (also see Bibliography)

Route 45 Corridor Study (DVRPC 05013, 2005)

NJ Corridor 13 - NJ 70

Figure 17



Corridor ID	Corridor Name	Corridor Notes
13	NJ 70	Extended eastward to reflect travel model major flow
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	Airport Circle to Curtis Avenue/Erlton	

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Transit First Policy
- More Frequent Transit or More Hours of Service

Corridor Studies Include (also see Bibliography)

Final Concept Development Report for Route 70 (Baker, 2004), NJ 70 Corridor Study (DVRPC Publication 06003, 2005)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	Curtis Avenue/Erlton to I-295	Mostly a four-lane cross-section, predominantly with retail/offices along NJ 70 and neighborhoods further back. The primary need is to address mobility and safety issues while retaining quality of life for residents, including improvements for bicyclists and pedestrians (NJ 70 Study). Subcorridor characteristics include: high current VC; two or more times the regional average of elderly people (over age 75); two or more times the regional average of people with physical disabilities; 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Planning and Design for Nonmotorized Transportation
- Expanded Parking/Improved Access to Stations (all modes)
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)

Strategy Notes

While Safety Improvements and Programs and Improvements for Pedestrians and Bicyclists are appropriate everywhere, they are specifically recommended in the NJ 70 Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high current V/C ratios. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas.

Corridor Studies Include (also see Bibliography)

Final Concept Development Report for Route 70 (Baker, 2004), NJ 70 Corridor Study (DVRPC Publication 06003, 2005)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	I-295 to east of Radnor Blvd	The number of lanes in this section changes from six to eight to four from west to east. It includes intersections with I-295 and NJ 73. Land uses vary from homes to industrial uses, including a mall and big-box retail toward the eastern end. Important issues include crash rates, access, pedestrian amenities, and Smart Growth/Growth Management (NJ 70 Study). Subcorridor characteristics include: high current VC; two or more times the regional average of elderly people (over age 75).

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Transit First Policy
- More Frequent Transit or More Hours of Service

Strategy Notes

DBNUM 567, also see subcorridor 14A.
While Safety Improvements and Programs, Improvements for Pedestrians and Bicyclists, Access Management (both engineering and policy strategies), and Growth Management and Smart Growth are appropriate everywhere, they are specifically recommended in the NJ 70 Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now. The NJ 73 and NJ 70 (Marlton Circle) New Grade-Separated Interchange at Marlton Circle (LRP ID: 24) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

NJ 73 Corridor Study (DVRPC 00023, 2000), Final Concept Development Report for Route 70 (Baker, 2004), NJ 70 Corridor Study (DVRPC Publication 06003, 2005)

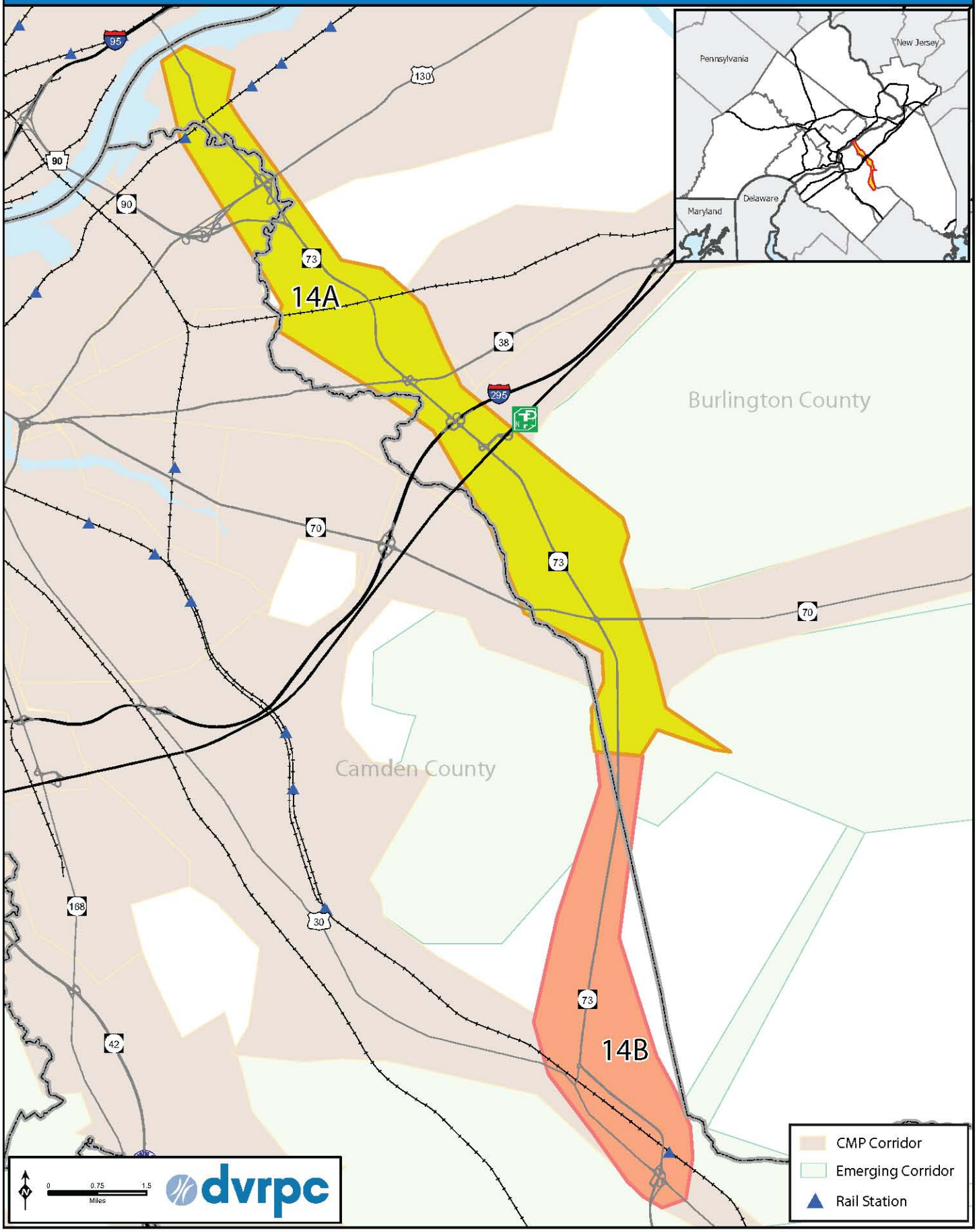
Subcorridor ID	Subcorridor Name	Subcorridor Notes
D	Between west of North Elmwood Road to the east end of this congested corridor	Two-lane cross-section; eastern Evesham Township through much of Medford Township.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Transit First Policy
- More Frequent Transit or More Hours of Service

NJ Corridor 14 - NJ 73

Figure 18



Corridor ID	Corridor Name	Corridor Notes
14	NJ 73	This corridor provides north-south access in the vicinity of the Burlington/Camden county line, connecting several of the corridors that radiate out from Camden.
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	Tacony Palmyra Bridge-CR 544	More urban and more intersections than subcorridor 13B; intersects I-295, NJ 70, and NJ 38. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

DBNUM 567, also see subcorridor 13C.
While Basic Upgrading of Traffic Signals, Intersection Improvements of a Limited Scale, and Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they are specifically recommended in the NJ 73 Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Walking and Bicycling are also appropriate everywhere and should be incorporated in this densely developed subcorridor. Given the levels of current and future congestion, General Purpose Lanes and New Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. The NJ 73 and NJ 70 (Marlton Circle) New Grade-Separated Interchange at Marlton Circle (LRP ID: 24) is listed as a Major Regional Project in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP DBNUM	Project Name
94068	Route 73, Fox Meadow Road/Fellowship Road

Corridor Studies Include (also see Bibliography)

NJ 73 Corridor Study (DVRPC 00023, 2000)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	South of CR 544 to US 30	Less developed than Subcorridor 13A, includes Atco station. Subcorridor characteristics include: 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Parking Supply-and-Demand Management (such as by transportation allowances)
- Shuttle Service to Stations

Strategy Notes

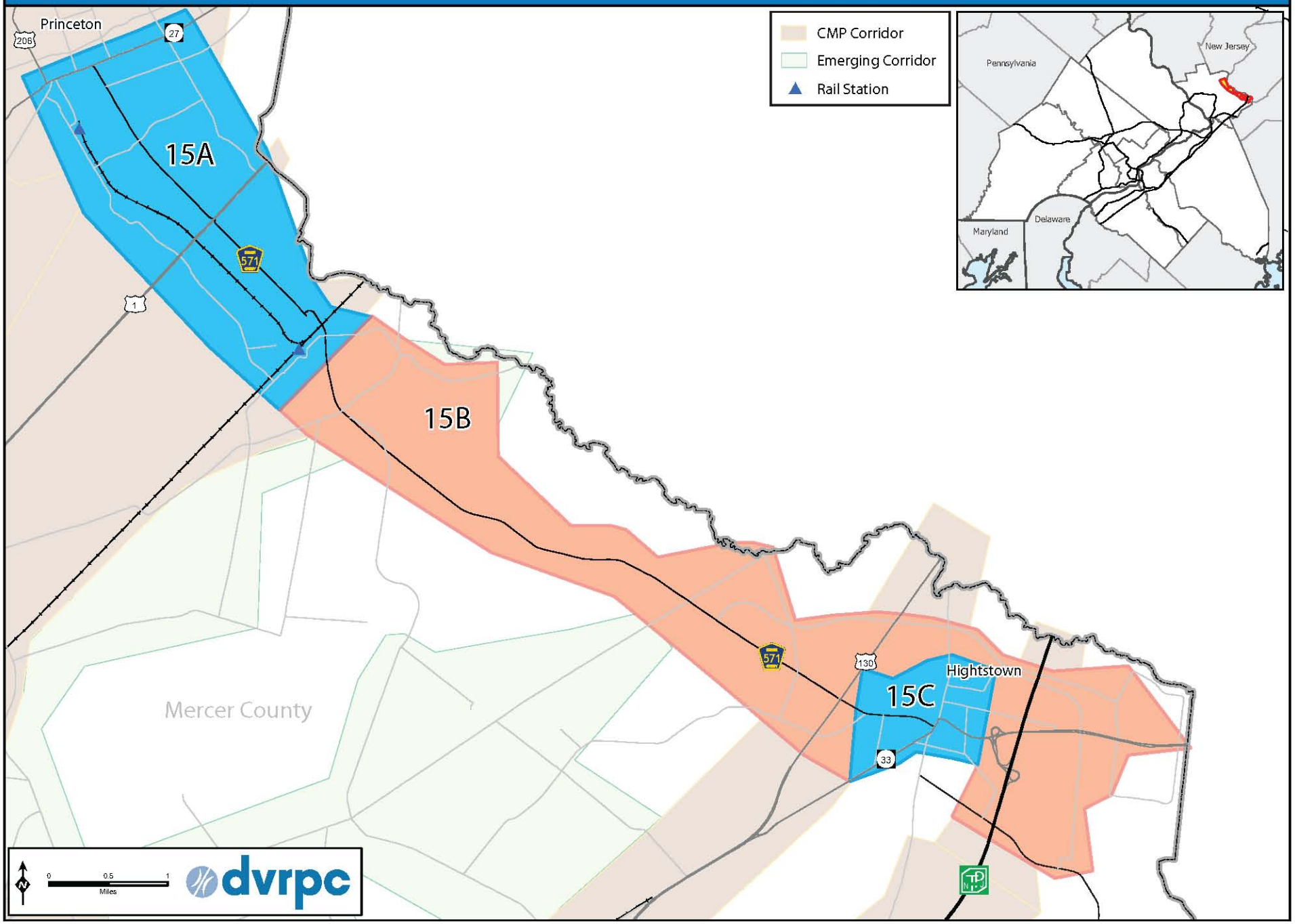
While Growth Management and Smart Growth, Basic Upgrading of Traffic Signals, Intersection Improvements of a Limited Scale, and Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they are specifically recommended in the NJ 73 Study. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas.

Corridor Studies Include (also see Bibliography)

NJ 73 Corridor Study (DVRPC 00023, 2000)

NJ Corridor 15 - CR 571

Figure 19



Corridor ID	Corridor Name	Corridor Notes
15	CR 571	Princeton-Hightstown area, to US 130 and NJ Turnpike
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	Princeton area of CR 571 and part of West Windsor	Princeton Borough-Princeton Junction Rail Station. Subcorridor characteristics include: high current VC; rail station with 500 or more passenger boardings per weekday.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Expanded Parking/Improved Access to Stations (all modes)
- More Frequent Transit or More Hours of Service

Strategy Notes

Also see Subcorridor 4C and 4E of US 1 and US 206 corridor. While Improvements for Pedestrians and Bicyclists, Signage, and Access Management (both engineering and policy strategies) are appropriate everywhere, they are specifically recommended by the CR 571 Corridor Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high current V/C ratios. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. The US 1–Penns Neck Area New Connector Road, Interchanges, and Widening in the Vicinity of Penns Neck (LRP ID: 84) and the US 1 BRT (LRP ID: S) are listed as Major Regional Projects in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

Penns Neck Area FEIS (NJDOT, 2004), Route 1 BRT Study (NJ Transit, 2006), West Windsor Princeton Junction Redevelopment Study and CR 571 project (West Windsor Township, 2005), CR 571 Corridor Study (DVRPC 07037, 2007)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	CR 571 midsection between Princeton and Hightstown	CR 571 varies considerably in character in this section.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Shuttle Service to Stations

Strategy Notes

West Windsor CR 571 project and Princeton Junction Redevelopment Study, CR 571 Work Group (Central Jersey Transportation Forum). While Improvements for Pedestrians and Bicyclists, Signage, and Access Management (both engineering and policy strategies) are appropriate everywhere, they are specifically recommended by the CR 571 Corridor Study.

Corridor Studies Include (also see Bibliography)

Penns Neck Area FEIS (NJDOT, 2004), West Windsor Princeton Junction Redevelopment Study (West Windsor Township, 2005/7), CR 571 Corridor Study (DVRPC 07037, 2007)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	Hightstown Borough	Densely developed, turnpike Exit 8, Traffic from turnpike exit.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

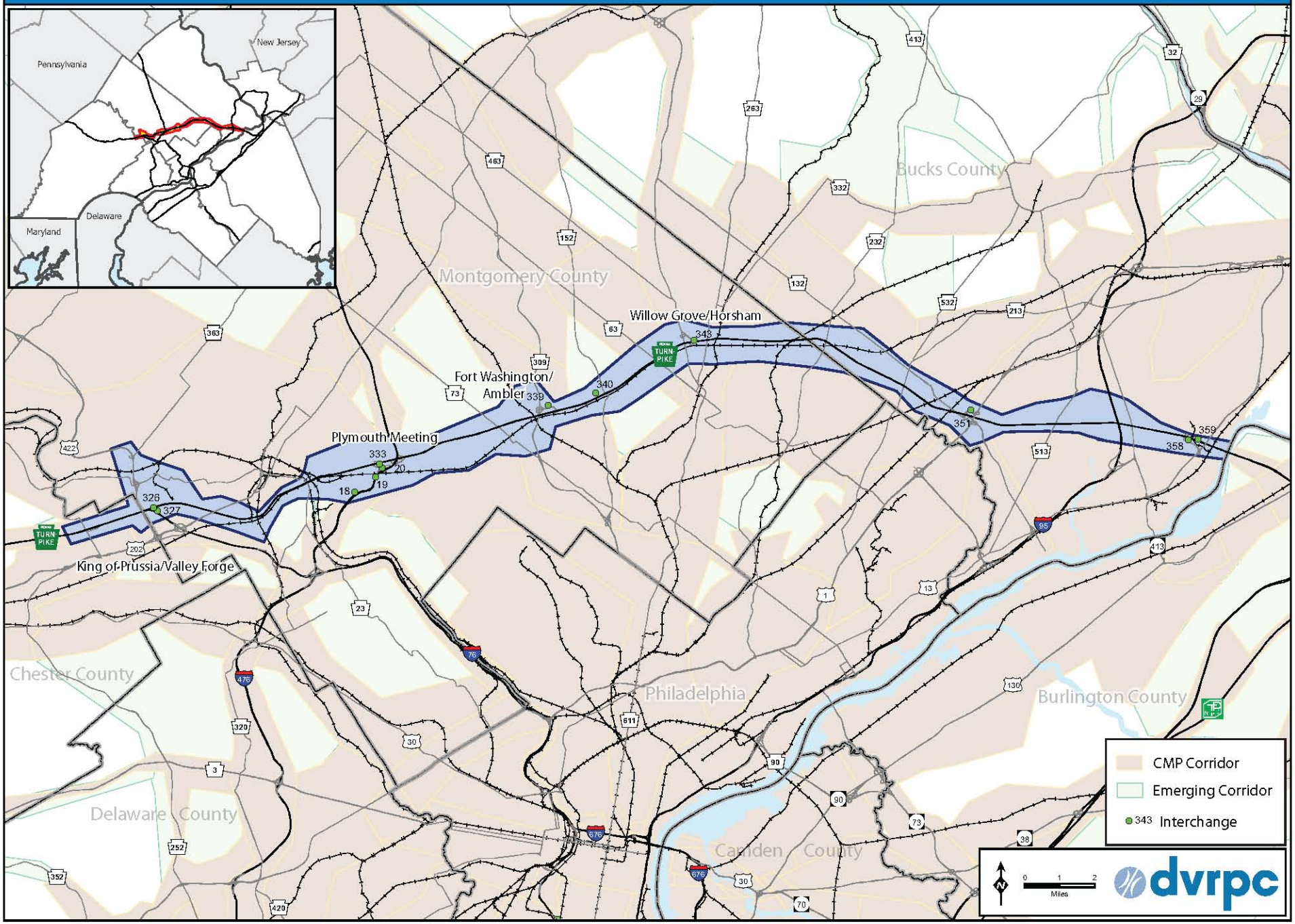
While Improvements for Pedestrians and Bicyclists, Signage, and Access Management (both engineering and policy strategies) are appropriate everywhere, they are specifically recommended by the CR 571 Corridor Study.

Corridor Studies Include (also see Bibliography)

CR 571 Corridor Study (DVRPC 07037, 2007)

PA Corridor 1 - I-276 (Pennsylvania Turnpike)

Figure 20



Corridor ID	Corridor Name	Corridor Notes
1	I-276 (Pennsylvania Turnpike)	Narrowly drawn with bump-out areas of influence around interchanges
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	I-276 corridor from Valley Forge to PA 29/Great Valley	This corridor was left as one subcorridor because generally the same strategies are appropriate for its whole length. Corridor characteristics in certain spots include: high current VC, high future VC, and high growth in VC; bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; transit usage approaching a lane of traffic; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Park-and-Ride Lots

Strategy Notes

While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, Access Management and Marketing/Outreach for Transit and TDM strategies are important given the high bus and train ridership this corridor. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. The Norristown High Speed Line extension from Hughes Park to the King of Prussia Mall (LRP ID: Q), US 422 Bridge and PA 23 Interchange (River Crossing) Bridge Replacement/Widening and Intersection/Interchange Improvements (LRP ID: 96), I-76 (PA Turnpike) Widening from Downingtown to Valley Forge (LRP ID: 40), and I-76 (PA Tunpike) Electronic Interchange at PA 29 (LRP ID: 47), are listed as Major Regional Projects in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

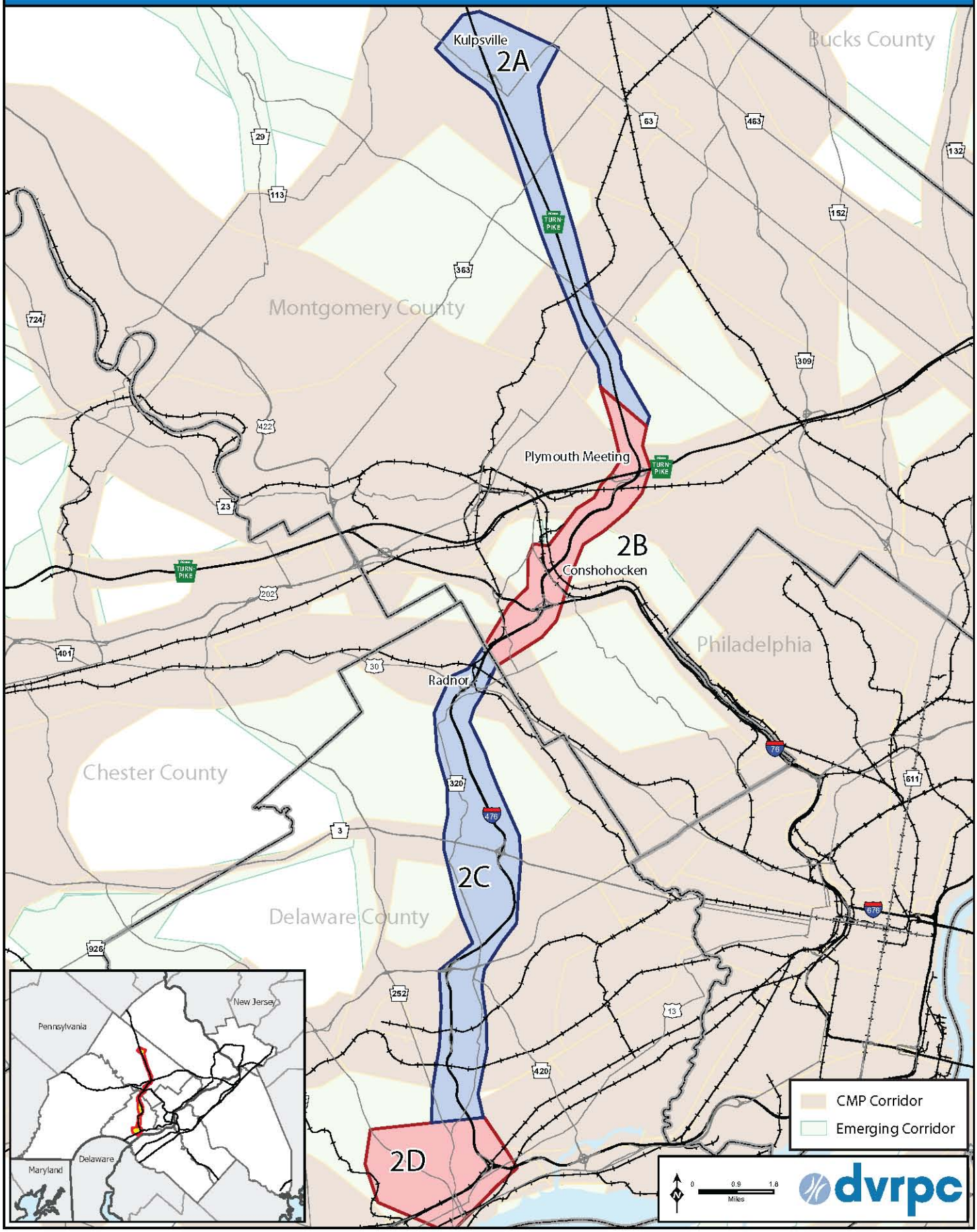
TIP MPMS	Project Name
13347	I-95/PA Turnpike Interchange
13549	US 1 (Bridges)
16211	I-76 Ramps Phase 3, Henderson/Gulph Rds. Widening
16477	PA 309, Welsh Rd. to Highland Ave.
48172	PA 23 Relocation at Allendale Rd. and Beidler Rd.
48187	I-76 Ramps Phase 2 - Henderson/Gulph Road Widen
57858	Lafayette St. Extension
64796	US 422 / PA 363 Interchange
70197	US 422 (New) Exwy Bridge Over Schuylkill River
79863	Lafayette St- Ford Street to Conshohocken Rd.
79864	Lafayette St - Barbados St. to Ford St.
79928	Lafayette St./US 202 Dannehower Bridge Interchange
80021	US 202 - Markley St. Improvements (Section 510)
80022	US 202 - Markley St. Improvements (Section 520)

Corridor Studies Include (also see Bibliography)

Area Revitalization, Mobility, and Industrial Corridor Reuse Study: Norristown, Plymouth and Conshohocken (DVRPC 05006, 2005), Schuylkill Crossings Traffic Study (DVRPC 07040, 2008)

PA Corridor 2 - I-476

Figure 21



Corridor ID	Corridor Name	Corridor Notes
2	I-476	This corridor contains I-476 and the highway-related area around it
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	I-476 North of Plymouth Meeting	The northern end of this congested subcorridor is the intersection area with Sumneytown Pike and the growing center of Kulpsville.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Park-and-Ride Lots
- Major Reconstruction with Minor Capacity

Strategy Notes

The I-476 (PA Turnpike Northeast Extension) Widening from Lansdale to Quakertown (LRP ID: 32), and the I-476 (PA Turnpike Northeast Extension) Widening from Mid-County to Landsdale Interchanges (LRP ID: 52) are listed as Major Regional Projects in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
16438	PA 309 Connector Project-Phase I
50364	US 202, Dekalb Pike, Section 610
63490	US 202, Twp. Line Rd. to Morris Rd. (Sec 61N)

Corridor Studies Include (also see Bibliography)

I-476 Express Bus Feasibility Study (DVRPC 03008, 2003), Schuylkill Crossings Traffic Study (DVRPC 07040, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	I-476 from I-76 to I-276	Includes Conshohocken; complex weaves. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC between the 2005 and 2035 model scenarios.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Express Transit Routes
- Major Reconstruction with Minor Capacity

Strategy Notes

While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. The I-476 (PA Turnpike Northeast Extension) Widening from Mid-County to Landsdale Interchanges (LRP ID: 52) is listed as a Major Regional Project in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
16577	Ridge Pike, Butler Pike to Phila Line

Corridor Studies Include (also see Bibliography)

I-476 Express Bus Feasibility Study (DVRPC 03008, 2003), Area Revitalization, Mobility, and Industrial Corridor Reuse Study: Norristown, Plymouth and Conshohocken (DVRPC 05006, 2005), Schuylkill Crossings Traffic Study (DVRPC 07040, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	I-476 north of vicinity of PA 320 intersection	North to Delaware/Montgomery county line. This subcorridor extends out to include areas of related land uses. Subcorridor characteristics include: bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Park-and-Ride Lots
- Major Reconstruction with Minor Capacity

Strategy Notes

While Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing sucesses in high-transit use subcorridors like this one.

Corridor Studies Include (also see Bibliography)

I-476 Express Bus Feasibility Study (DVRPC 03008, 2003), Delaware County Highway-Railroad Grade Crossing Study (DVRPC 06007, 2006)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
D	Chester and I-95 area	This subcorridor focuses on the freeway interactions. See Subcorridor 6A for more about Chester. Subcorridor characteristics include: high change in VC, 2005 to 2035; bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Advanced Transit System Management
- Express Transit Routes
- Major Reconstruction with Minor Capacity

Strategy Notes

While Growth Management and Smart Growth strategies are appropriate everywhere, they are especially important in corridors with a high rate of increase in V/C ratios, which is considered

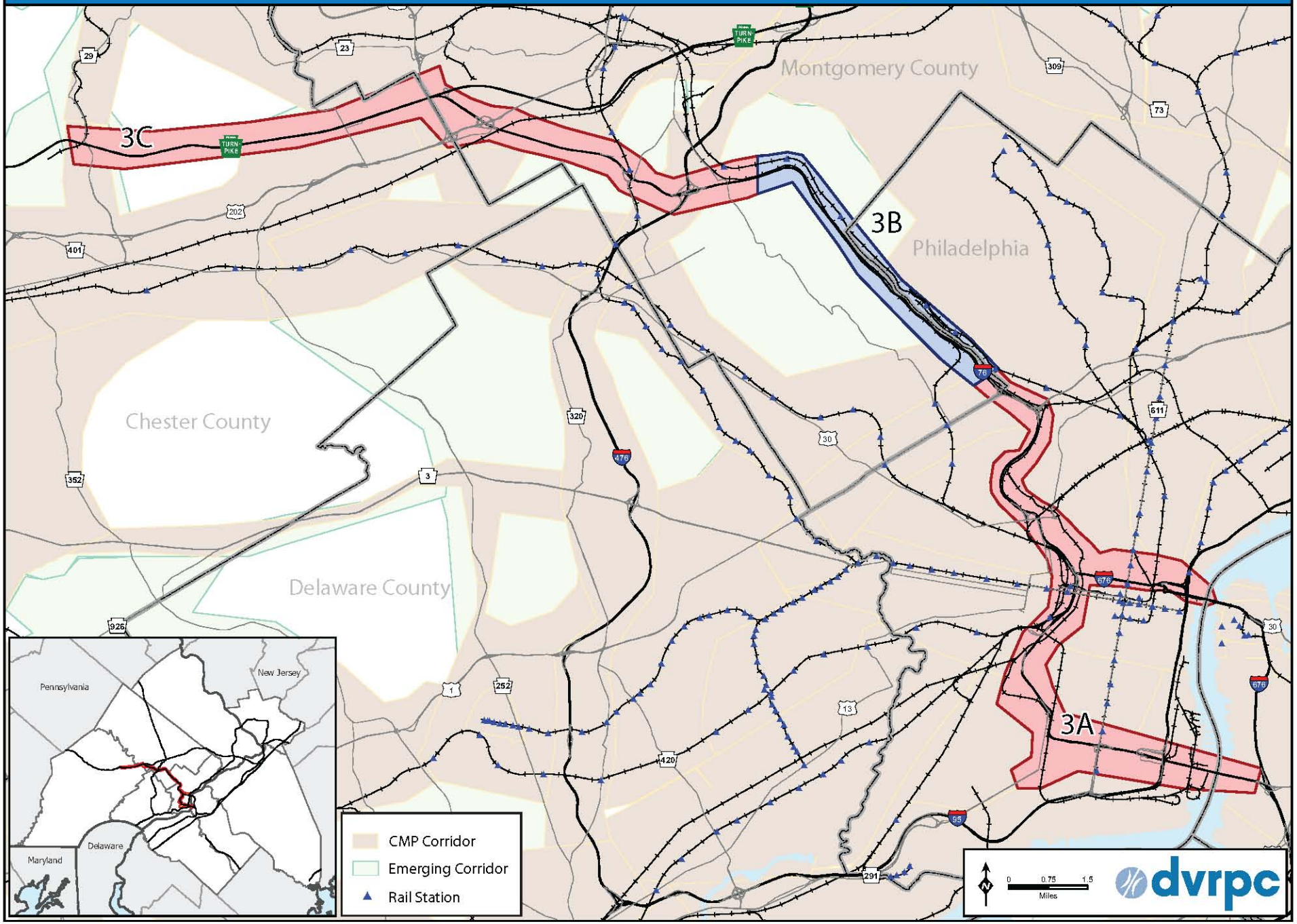
likely based on the travel model. Similarly, Access Management, Marketing/Outreach for Transit and TDM Services, Improvements for Walking and Bicycling, and a variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations.

Corridor Studies Include (also see Bibliography)

Conceptual Access Plan for the City of Chester (DVRPC 01025, 2001), I-476 Express Bus Feasibility Study (DVRPC 03008, 2003), Delaware County Highway-Railroad Grade Crossing Study (DVRPC 06007, 2006), Revitalization Plan Area 2 (Delaware County Planning Department, Update Underway), Revitalization Plan New Area Corridors (Delaware County Planning Department, Currently Underway), Chester City Amtrak Service (DVRPC, 2008), Highland Avenue TOD or Relocation (DVRPC/CH Planning, Currently Underway), Brookhaven, Parkside, and Upland Borough Multimunicipal Comprehensive Plan

PA Corridor 3 - I-76 & I-676

Figure 22



Corridor ID	Corridor Name	Corridor Notes
3	I-76 and I-676	I-76 from the Walt Whitman Bridge and I-676 from the Ben Franklin Bridge past their juncture to the PA Turnpike
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	I-676/76 to City Avenue	Walt Whitman and Ben Franklin bridges through the I-676/76 merge to the vicinity of the US 1 interchanges. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; transit usage approaching a lane of traffic, high concentrations of numerous transportation-disadvantaged populations.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Expanded Parking/Improved Access to Stations (all modes)
- Express Transit Routes
- Major Reconstruction with Minor Capacity

Strategy Notes

Many parallel local streets do not have electronic controllers with fiber optics interconnect and are not compatible with ITS (Denny, 10/17/08). Coordinate with broader scale incident management/ITS program. Traffic signal improvements cited in the CAMP study of 34th and Grays Ferry Road area and MPMS 17724. While Signage and Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they are specifically recommended in the Stadium Area Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. In a subcorridor with high current V/Cs, high V/C growth and congestion in the future, high existing transit use, and many high concentrations of transportation-disadvantaged populations, all the strategies appropriate for all subcorridors should be used, as well as the ones specificallly listed above. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. The I-95 Phildelphia (North) Reconstruction from I-676 to Cottman Avenue and Interchange Improvements at I-676, Girard Avenue, Allegheny Avenue, Betsy Ross Bridge, Bridge Street, and Cottman Avenue Interchanges (LRP ID: 65) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

Congestion and Accident Mitigation (CAMP) Program Report (DVRPC, 2005), Stadium Area Transit Study (Kise Straw & Kolodner, 2004)
Reference for note: e-mail from Philadelphia Streets Department, Charles Denny, 10/17/08.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	US 1 to Conshohocken curve/PA 23	West of Lincoln Drive intersection of US 1 (City Ave) and east of PA 23 intersection. Subcorridor characteristics include: major transit stations include the Wissahickon Transportation Center; 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Expanded Parking/Improved Access to Stations (all modes)
- Park-and-Ride Lots
- Major Reconstruction with Minor Capacity

Strategy Notes

Many parallel local streets do not have electronic controllers with fiber optics interconnect and are not compatible with ITS (Denny, 10/17/08). Coordinate with broader-scale incident management/ITS program. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
64795	Rock Hill Rd./Belmont Ave.

Corridor Studies Include (also see Bibliography)

Schuylkill Crossings Traffic Study (DVRPC 07040, 2008)
Reference for note: e-mail from Philadelphia Streets Department, Charles Denny, 10/17/08.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	I-76 from I-476 to Turnpike	Vicinity of PA 23 interchange (Conshohocken area) through interchange area of east-west turnpike, US 202, and I-476 (Valley Forge area). Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; rail station with 500 or more passenger boardings per weekday.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Express Transit Routes
- Major Reconstruction with Minor Capacity

Strategy Notes

Coordinate with broader scale incident management/ITS program. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. The Norristown High Speed Line

extension from Hughes Park to the King of Prussia Mall (LRP ID: Q) is listed as a Major Regional Project in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

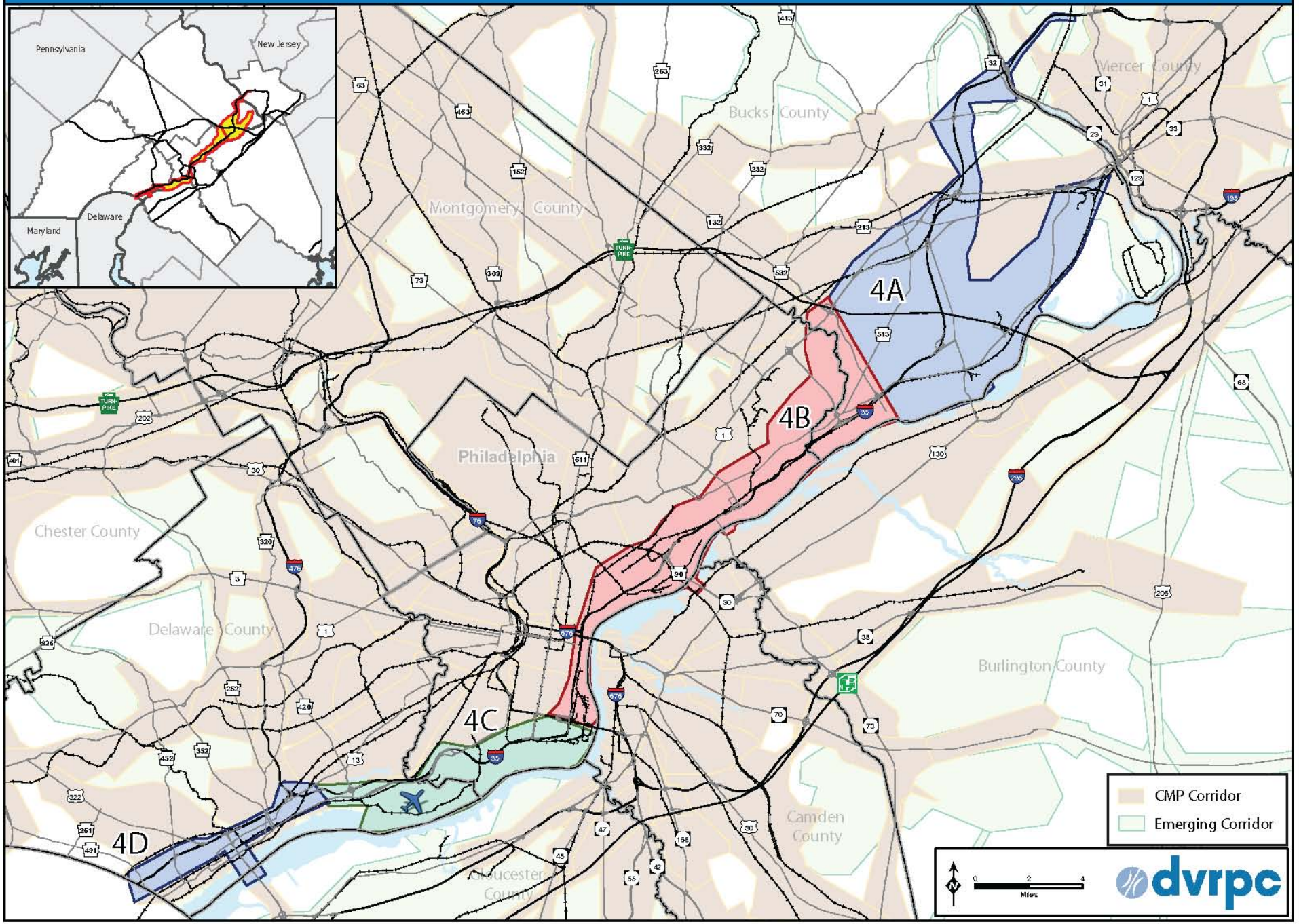
TIP MPMS	Project Name
16211	I-76 Ramps Phase 3, Henderson/Gulph Rds. Widening
68064	I-76 West Ramps Phase1- Henderson/Gulph Road Widen

Corridor Studies Include (also see Bibliography)

Henderson Road/I-76 Westbound Ramps Traffic Study (DVRPC 03006, 2003), Schuylkill Crossings Traffic Study (DVRPC 07040, 2008)

PA Corridor 4 - I-95

Figure 23



Corridor ID	Corridor Name	Corridor Notes
4	I-95	Pennsylvania portion of I-95 and related development areas
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	I-95 corridor north of Street Road	Less developed than further south; extended for I-276/US 13 movement; includes PA 413, US 13, and Burlington-Bristol Bridge approaches. Subcorridor characteristics include: high change in VC, 2005 to 2035; bus ridership is 6,000 or more per day; rail Station with 500 or more passenger boardings per weekday; transit usage approaching a lane of traffic; two or more times the regional average of Hispanic people; two or more times the regional average of limited English proficiency; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Advanced Transit System Management
- Park-and-Ride Lots
- Major Reconstruction with Minor Capacity

Strategy Notes

Coordinate with I-95 Coalition. While Growth Management and Smart Growth strategies and Access Management are appropriate everywhere, they are especially important in corridors with high growth suggested by the 2035 travel model. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. The Seamless Regional Transit Access Study recommends establishing shuttle service between Bristol and Burlington, New Jersey. The I-95 at Scudders Falls Bridge Widening, Bridge Replacement, and Interchange Reconfiguration (LRP ID: 36) is listed as a Major Regional Project in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
13347	I-95 / PA Turnpike Interchange
13549	US 1 (Bridges)

Corridor Studies Include (also see Bibliography)

PA CMS PA 413 Corridor - Top 10 Worst Performing Arterial Sections #4 (DVRPC, 2003), US 1 Widening and Reconstruction Traffic Study (DVRPC 08089, 2008), Seamless Regional Transit Access (DVRPC 08069, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	I-95 corridor-Philadelphia	Includes urban areas focused on I-95. Much of these areas are also in other subcorridors. Subcorridor characteristics include: high change in VC, 2005 to 2035; bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; transit usage approaching a lane of traffic; high concentrations of numerous transportation-

		disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Advanced Transit System Management
- Expanded Parking/Improved Access to Stations (all modes)
- Express Transit Routes
- Major Reconstruction with Minor Capacity

Strategy Notes

Many parallel local streets do not have electronic controllers with fiber optics interconnect and are not compatible with ITS (Denny, 10/17/08). Coordinate with I-95 Coalition. While Growth Management and Smart Growth strategies and Access Management are appropriate everywhere, they are especially important in corridors with high growth suggested by the 2035 travel model. While Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. The Seamless Regional Transit Access Study recommends connecting the Frankford Transportation Center with the Palmyra Station (NJ) via extensions of existing bus routes. DRPA and PATCO are evaluating alternatives to expand transit services along Philadelphia's waterfront. The I-95 Phildelphia (North) Reconstruction from I-676 to Cottman Avenue and Interchange Improvements at I-676, Girard Avenue, Allegheny Avenue, Betsy Ross Bridge, Bridge Street, and Cottman Avenue Interchanges (LRP ID: 65), I-95 Philadelphia (South) Reconstruction of Viaducts from Queen Street to Washington Avenue (LRP ID: 100), and the Delaware River Tram (LRP ID: M) are listed as Major Regional Projects in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
17782	I-95 & Aramingo Ave., Adams Ave. Connector
17821	I-95 Shackamaxon St. to Ann St. (GIR)
46956	North Delaware Ave. Extension
79825	I-95: Shckmxon - Columbia (GR2)

Corridor Studies Include (also see Bibliography)

I-95 Interchange Enhancement and Reconstruction Cottman/Princeton Interchange Traffic Study (DVRPC 02025, 2002), I-95 Interchange Enhancement and Reconstruction Section AFC Interchange Traffic Study (DVRPC 06010, 2005), I-95 Interchange Enhancement and Reconstruction Section GIR Traffic Study (DVRPC 05003, 2005), Southern New Jersey to Philadelphia Transit Study (DRPA, 2005), US 1 Widening and Reconstruction Traffic Study (DVRPC 08089, 2008), Seamless Regional Transit Access (DVRPC 08069, 2008)
Reference for note: e-mail from Philadelphia Streets Department, Charles Denny, 10/17/08.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	I-95 corridor by Airport	Includes Packer Avenue Marine Terminal, Philadelphia Airport, Boeing in Delaware County, and intersection with PA 420. Subcorridor characteristics include: high future VC; high change in VC, 2005 to 2035; bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic.

Very Appropriate Strategies

- Incident Management
- Making Intermodal Transfers Easier for Freight
- Commercial Vehicle Operations (CVO)
- Advanced Transit System Management
- Expanded Parking/Improved Access to Stations (all modes)
- Major Reconstruction with Minor Capacity

Strategy Notes

Many parallel local streets do not have electronic controllers with fiber optics interconnect and are not compatible with ITS (Denny, 10/17/08). Coordinate with I-95 Coalition. While Signage and Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they are specifically recommended in the Stadium Area Study. While Growth Management and Smart Growth, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios and high V/C ratios in the future based on regional travel modeling. The Seamless Regional Transit Access Study recommends a JARC Shuttle between Philadelphia and the Pureland Industrial Center (NJ) via Chester County. The Penrose Avenue/26th Street New Access Road to the Navy Yard Business Center (LRP ID: 67) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

Stadium Area Transit Study (Kise Straw & Kolodner, 2004), Seamless Regional Transit Access (DVRPC 08069, 2008), Revitalization Plan Area 3 & 4 (Delaware County Planning Department, Update Underway)
Reference for note: e-mail from Philadelphia Streets Department, Charles Denny, 10/17/08.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
D	I-95 corridor to Delaware State Line	Includes I-476 interchange and Commodore Barry Bridge area. Subcorridor characteristics include: high future VC; high change in VC, 2005 to 2035; bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Advanced Transit System Management
- Park-and-Ride Lots
- Major Reconstruction with Minor Capacity

Strategy Notes

Coordinate with I-95 Coalition. While Growth Management and Smart Growth, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios and high V/C ratios in the future based on regional travel modeling. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. The Seamless Regional Transit Access Study recommends a JARC Shuttle between Philadelphia and the Pureland Industrial Center (NJ) via Chester County.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

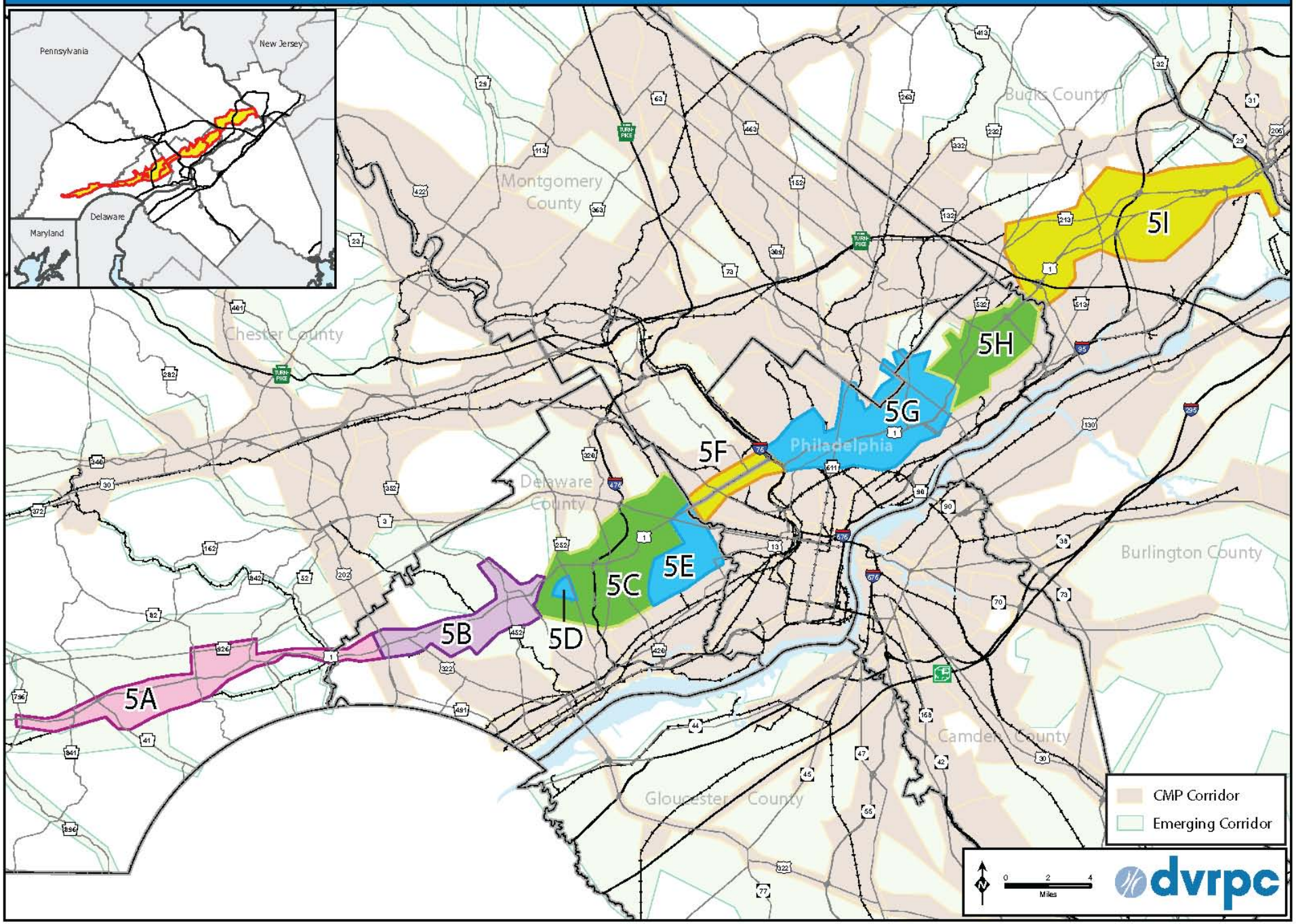
TIP MPMS	Project Name
57780	Rt. 322/Comm Barry Bridge/I-95 2nd St. Interchange

Corridor Studies Include (also see Bibliography)

Conceptual Access Plan for the City of Chester (DVRPC 01025, 2001), I-95/US 322 Interchange Traffic Study (DVRPC 08024, 2008), Seamless Regional Transit Access (DVRPC 08069, 2008), Revitalization Plan Area I, 2, 3, & 4; New Area Corridors (Delaware County Planning Department, Update Underway), Chester City Amtrak Service (DVRPC, 2008), Highland Avenue TOD or Relocation (DVRPC/CH Planning, Currently Underway), Brookhaven, Parkside, and Upland Borough MultiMunicipal Comprehensive Plan; Marcus Hook TOD Master Plan (KSK, 2003)

PA Corridor 5 - US 1

Figure 24



Corridor ID	Corridor Name	Corridor Notes
5	US 1	Broadly defined corridor with surrounding development
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	US 1 West of US 202	Less developed than further east on US 1. Chester County Planning Commission staff says that the area has become suburban development with movement primarily south to jobs in New Castle County. A community college and other major land developments have also occurred there. Subcorridor characteristics include: two or more times the regional average of Hispanic people; two or more times the regional average of limited English proficiency; 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- County and Local Road Connectivity
- Park-and-Ride Lots
- Demand Response Transit Services

Strategy Notes

Based on discussion with Chester County Planning Commission (CCPC) and follow-up reviews, Arterial or Collector Road was added to this subcorridor, though this strategy should remain a last resort and be carefully paired with supplemental strategies to discourage further sprawl. CCPC feels that this strategy is an appropriate way to address the relatively sparse road network density/connectivity to help keep local traffic on the local road network and permit the US 1 Expressway to serve a more regional function. MPMS 14541: US 1, Baltimore Pike was previously included and remains consistent. While Growth Management and Smart Growth and Access Management are appropriate everywhere, they should be used in this subcorridor, which is likely to experience high growth in V/C ratios. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
14484	PA 41 Study
14541	US 1, Baltimore Pike

Corridor Studies Include (also see Bibliography)

Summary from CMP meeting at Chester County of 10/21/08 available upon request.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	US 1 West of PA 252	Media Bypass area and west, but not Media. Subcorridor characteristics include: high change in VC, 2005 to 2035; bus ridership is 6,000 or more per day; 50 percent or more of the subcorridor is environmentally sensitive or protected land.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Extensions or Changes in Bus Routes

Strategy Notes

While Growth Management and Smart Growth strategies are appropriate everywhere, they are especially important in corridors with a high rate of increase in V/C ratios, which is considered likely based on the travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas. The R3 Regional Rail Line Extension from Elwyn to Wawa (LRP ID: P) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

See also Route 3 West Chester Pike Land Use and Access Management Strategies, Phase 1 (DVRPC 05029, 2006) referenced in 10C; Route 322 Land Use Study (DVRPC 02022, 2002), U.S. Route 202 Section 100: Land Use Implementation & Coordination

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	Havertown to near Media	Developed communities west of Baltimore Pike. Subcorridor characteristics include: bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; two or more times the regional average of elderly people (over age 75).

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Planning and Design for Nonmotorized Transportation
- Expanded Parking/Improved Access to Stations (all modes)
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)

Strategy Notes

The 2006 CMP included General Purpose Lanes in the appropriate strategies, and as a result, MPMS 15345 remains consistent with the CMP. While Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. The R3 Regional Rail Line Extension from Elwyn to Wawa (LRP ID: P) is listed as a Major Regional Project in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
15345	PA 252, Providence Rd.

Corridor Studies Include (also see Bibliography)

Pennsylvania Congestion Management System - US 1/Baltimore Pike Corridor (DVRPC 00009, 2000), Baltimore Avenue Corridor Revitalization Plan (McCormick Taylor, March 2007), Revitalization Plan Area 3, 4, & 5 (Delaware County Planning Department, Update Underway), Lansdowne Avenue CCIP (PennDOT - Jacobs, Edwards, & Kelcey), Darby Creek Greenway Study (Delaware County Planning Department, Currently Underway)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
D	Media Borough	Broken off as different strategies are appropriate than in surrounding areas.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Subcorridor ID	Subcorridor Name	Subcorridor Notes
E	Baltimore Avenue Corridor	69th Street Terminal and Lansdowne, Clifton Heights, Yeadon, and East Upper Darby Township. Subcorridor characteristics include: high current VC, high future VC, and high change in VC, 2005 to 2035; bus ridership is 6,000 or more per day; extremely high density of transit stops; transit usage approaching a lane of traffic; two or more times the regional average of non-Hispanic minorities; two or more times the average regional density of households or employment. Lansdowne Station is recommended for TOD in the Baltimore Avenue Study.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- Transit-Oriented Development (TOD)
- More Frequent Transit or More Hours of Service

Strategy Notes

While Improvements for Pedestrians and Bicyclists, Basic Upgrading of Traffic Signals, and Access Management (both engineering and policy strategies) are appropriate everywhere, they are specifically recommended in the Baltimore Avenue Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM and Improvements for Walking and Bicycling strategies are appropriate everywhere, they can build upon existing successes in high-transit use and dense subcorridors like this one. Given the levels of current and future congestion, General Purpose Lanes and New Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity.

Corridor Studies Include (also see Bibliography)

Delaware County Renaissance Program plans, Pennsylvania Congestion Management System – US 1/Baltimore Pike Corridor (DVRPC 00009, 2000), Baltimore Avenue Corridor Revitalization Plan (DVRPC 07051B, 2007), Baltimore Avenue Corridor Revitalization Plan (McCormick Taylor, March 2007), West Chester Pike Land Use and Access Management Strategies, Phase I (DVRPC 05029, 2006), Revitalization Plan Area 3, 4, & 5 (Delaware County Planning Department, Update Underway), Lansdowne Avenue CCIP (PennDOT - Jacobs, Edwards, &

Kelcey), Darby Creek Greenway Study (Delaware County Planning Department, Currently Underway)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
F	City Avenue area	Office parks, nursing homes, and shopping; interchange with I-76, traffic going from US 1 to US 13. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; transit usage approaching a lane of traffic; two or more times the regional average of people in poverty; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Frontage or Service Roads

Strategy Notes

Notes from Philadelphia Streets Department: City Avenue West of Route 23 (Conshohocken Avenue) does not have electronic controllers with fiber optic interconnect and are not compatible with ITS. Electronic controllers would also allow the system to be responsive to traffic volumes on City Avenue. Pedestrian countdown signals could be added to this corridor. Many bus routes use City Avenue, and electronic controllers can provide transit priority. 63rd and City Avenue is a choke point on the corridor and causes backups to the Route 30 corridor (Denny, 10/17/08). The Increasing Intermodal Access to Transit Study recommends enhancing nonmotorized access to Cynwyd Station. While Access Management (both engineering and policy strategies) and Intersection Improvements of a Limited Scale are appropriate everywhere, they are specifically recommended in the US 1 Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity.

Corridor Studies Include (also see Bibliography)

Increasing Intermodal Access to Transit, Phase III (DVRPC, 2006), Access Management Along City Avenue/US 1 Corridor (DVRPC 05019, 2005)
Reference for note: e-mail from Philadelphia Streets Department, Charles Denny, 10/17/08.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
G	Dense area north of US 1/I-76 interchange	Urban area north of Center City; US 1 is an expressway in this section, but development is still focused on it. Subcorridor characteristics include: high

		current VC, high future VC, and high growth in VC; bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Safety Education and Enforcement (nonauto)
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

Many of the parallel local streets do not have electronic controllers with fiber optic interconnect and are not compatible with ITS (Denny, 10/17/08). While Basic Upgrading of Traffic Signals, Signage, Safety Improvements and Programs, and Pedestrian and Bicyclist Improvements are appropriate everywhere, they are specifically recommended in the Roosevelt Boulevard Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. The Seamless Regional Transit Access Study recommends connecting the Frankford Transportation Center with the Palmyra Station (NJ) via extensions of existing bus routes.

Corridor Studies Include (also see Bibliography)

I-95 Interchange Enhancement and Reconstruction Cottman/Princeton Interchange Traffic Study (DVRPC 02025, 2002), US 1 - Roosevelt Boulevard Corridor Study (DVRPC 07032, 2007), Seamless Regional Transit Access (DVRPC 08069, 2008)
Notes also reference e-mail from Charles Denny, Philadelphia Streets Department (10/17/08)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
H	US 1 Far Northeast Philadelphia	North of Pennypack Creek to Bucks County. Subcorridor characteristics include: bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic; two or more times the regional average of people in poverty; two or more times the regional average of people with physical disabilities; two or more times the regional average of elderly people (over age 75); two or more times the regional average of limited English proficiency; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- More Frequent Transit or More Hours of Service
- New Bus Route

Strategy Notes

Many of the parallel local streets do not have electronic controllers with fiber optic interconnect and are not compatible with ITS (Denny, 10/17/08). While Basic Upgrading of Traffic Signals, Signage, and Pedestrian and Bicyclist Improvements are appropriate everywhere, they are specifically recommended in the Roosevelt Boulevard Study. While Growth Management and Smart Growth strategies are appropriate everywhere, they are especially important in corridors with a high rate of increase in V/C ratios, which is considered likely based on the travel model. In addition, Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations.

Corridor Studies Include (also see Bibliography)

US 1 - Roosevelt Boulevard Corridor Study (DVRPC 07032, 2007), US 1 Widening and Reconstruction Traffic Study (DVRPC 08089, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
I	US 1 in Bucks County	Oxford Valley; interchange with PA Turnpike and I-95; Philadelphia Park Race Track, Langhorne Manor Borough, US 1 Business, and PA 413. Subcorridor characteristics include: high change in VC, 2005 to 2035; bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; transit usage approaching a lane of traffic; two or more times the regional average of elderly people (over age 75); two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Transit First Policy
- More Frequent Transit or More Hours of Service

Strategy Notes

Contains nine of the 10 worst performing arterial sections of the PA 413 corridor (PA 413 CMS Report) and recommendation areas 1 and 2 of the PA 413/513 Corridor study. General Purpose Lanes were an appropriate strategy in the 2006 CMP, and MPMS 13549 remains consistent with the CMP. While Growth Management and Smart Growth strategies are appropriate everywhere, they are especially important in corridors with a high rate of increase in V/C ratios, which is

considered likely based on the travel model. While Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

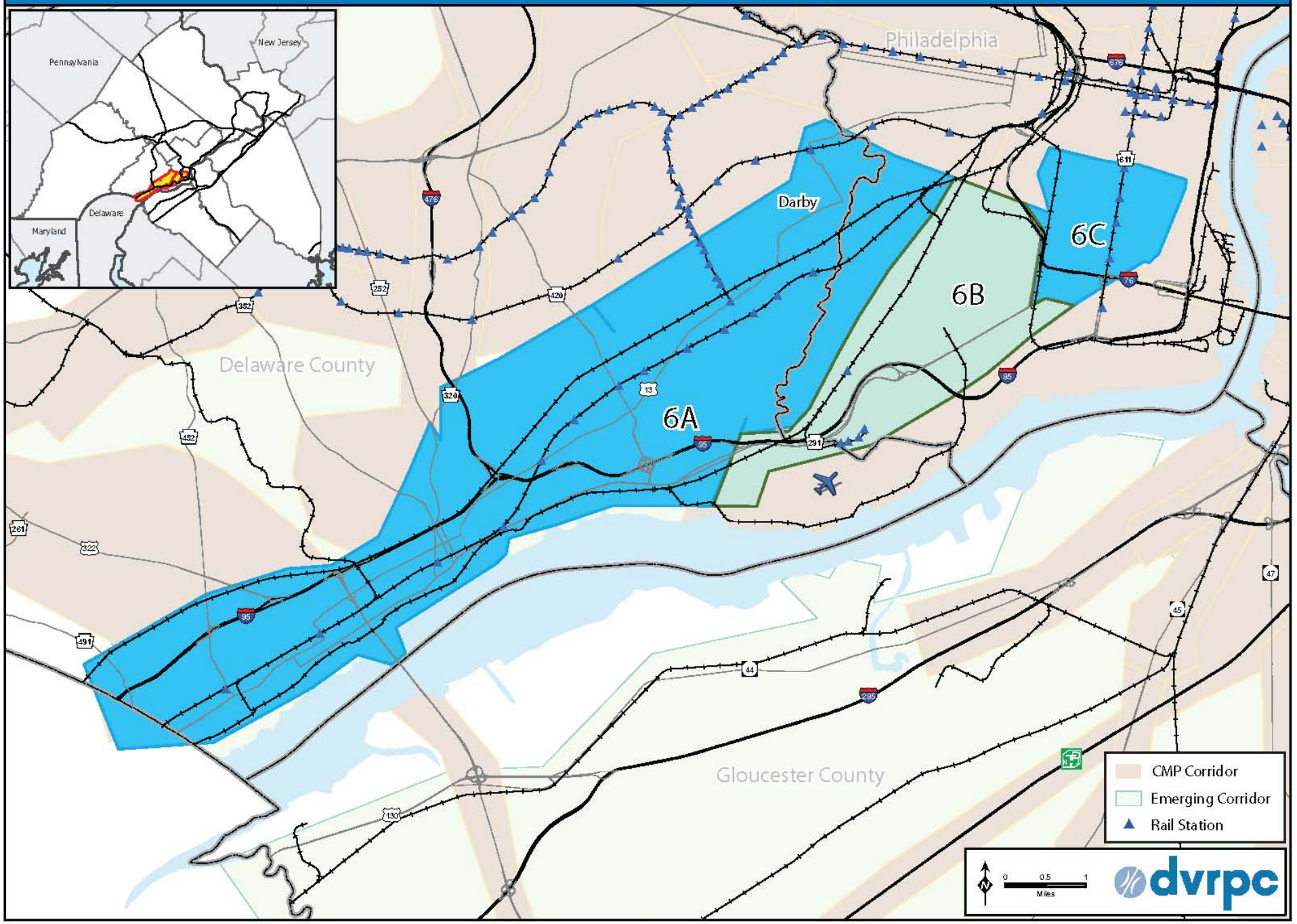
TIP MPMS	Project Name
13549	US 1 (Bridges)

Corridor Studies Include (also see Bibliography)

Pennsylvania CMS PA 413 Report (DVRPC, 2003), Assessment of Land Use and Transportation for PA 413/513 Corridor (DVRPC, 2004), US 1 Widening and Reconstruction Traffic Study (DVRPC 08089, 2008)

PA Corridor 6 - US 13/MacDade Blvd/PA 291

Figure 25



Corridor ID	Corridor Name	Corridor Notes
6	US 13/MacDade Boulevard/PA 291	Southern Delaware County riverfront communities, also SEPTA R2 rail line
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	City of Chester area, plus former subcorridor 6B: US 13 between Chester and Philadelphia, plus former subcorridor 6C: US 13-Cobbs Creek	To make the CMP clearer, subcorridors 6A, former 6B, and former 6C were combined as recommended by Delaware County. 6A focused on the residential and commercial development of the City of Chester and the SEPTA R2 Line. Former 6B focused on the commercial area between the I-476 interchange and PA 420. Former 6C focused on the southwest-Philadelphia-Colwyn and Elmwood communities. The subcorridor characteristics were generally similar and include: high future VC; high change in VC, 2005 to 2035; bus ridership is 6,000 or more per day; transit stations include the Chester Transportation Center; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Expanded Parking/Improved Access to Stations (all modes)
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

63rd/Cobbs Creek Parkway does not have electronic controllers with fiber optic interconnect and are not compatible with ITS. Electronic controllers would allow the system to be responsive to traffic volumes on 63rd/Cobbs Creek Parkway (Denny, 10/17/08). While Improvements for Pedestrians and Bicyclists are appropriate everywhere, they are specifically recommended in the Parkway Plan. Computerized Traffic Signals are recommended in CAMP 2005 for specific locations. While Growth Management and Smart Growth, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience a high growth in V/C ratios and high V/C ratios in the future. Similarly, while Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
57780	Rt. 322/Comm Barry Bridge/I-95 2nd St. Interchange

Corridor Studies Include (also see Bibliography)

PA 291 Industrial Heritage Corridor Parkway Plan (Delaware County Planning Department), Conceptual Access Plan for the City of Chester (DVRPC 01025, 2001), Baltimore Pike Corridor

Revitalization Assessment (DVRPC 01037, 2001), Congestion and Accident Mitigation (CAMP) Report (DVRPC, 2005), Chester City Amtrak Service (DVRPC, 2008), Revitalization Plan Area I, 2, 3, 4, & 5 (Delaware County Planning Department, Update Underway), 420 CCIP (PennDOT - Jacobs, Edw ards, & Kelcey), Darby Creek Greenway Study (Delaware County Planning Department, Currently Underway), Brookhaven, Parkside, and Upland Borough MultiMunicipal Comprehensive Plan; Marcus Hook TOD Master Plan (KSK, 2003), Highland Avenue TOD or Relocation (DVRPC/CH Planning, Currently Underway),
Philadelphia Streets Department comments from e-mail, Charles Denny, 10/17/08.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	PA 291/Airport area	Airport industrial area and developed mixed-use area around it. Subcorridor characteristics include: high future VC; high change in VC, 2005 to 2035; bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Transit First Policy
- More Frequent Transit or More Hours of Service

Strategy Notes

Much of the area adjoins and mixes with dense residential development. The Increasing Intermodal Access to Transit Study recommends enhancing nonmotorized access around the Eastwick Station. While Signage and Marketing/Outreach for Transit and TDM Services are appropriate everywhere, they are specifically recommended in the Stadium Area Study. Improvements for Pedestrians and Bicyclists are specifically recommended in the Parkway Plan. While Growth Management and Smart Growth, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios and high V/C ratios in the future. The Penrose Avenue/26th Street New Access Road to the Navy Yard Business Center (LRP ID: 67) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

PA 291 Industrial Heritage Corridor Parkway Plan (Delaware County Planning Department), Increasing Intermodal Access to Transit, Phase III (DVRPC, 2006), Stadium Area Transit Study (Kise Straw & Kolodner, 2004), Revitalization Plan Area 3 (Delaware County Planning Department, Update Underway), 420 CCIP (PennDOT - Jacobs, Edwards, & Kelcey)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	Penrose Avenue–Broad Street	South Philadelphia residential area with some commercial/industrial development. Subcorridor characteristics include: high future VC; bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment. Recommended for TOD in the Developing Around Transit Study.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

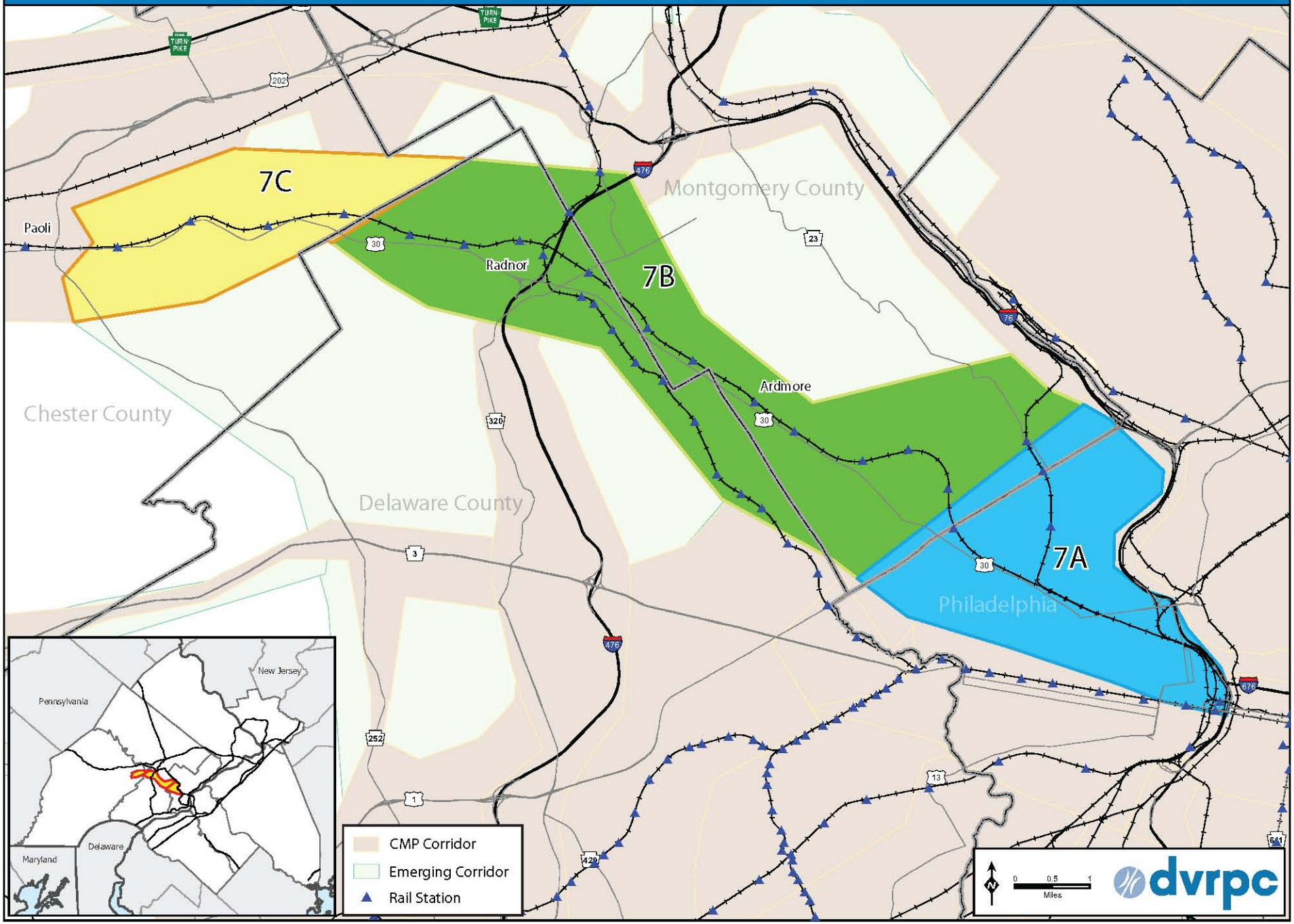
While Signage and Marketing/Outreach for Transit and TDM Services are appropriate everywhere, they are specifically recommended in the Stadium Area Study. Improvements for Pedestrians and Bicyclists and Revision of Exisiting Land Use/Transportation Regulations are recommended in the Developing Around Transit Study. While Growth Management and Smart Growth, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high V/C ratios in the future based on regional travel modeling. Improvements for Walking and Bicycling are also appropriate everywhere and should be incorporated in this densely developed subcorridor. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations.

Corridor Studies Include (also see Bibliography)

Stadium Area Transit Study (Kise Straw & Kolodner, 2004); Developing Around Transit (DVRPC 06034, 2006)

PA Corridor 7 - US 30 to Philadelphia

Figure 26



Corridor ID	Corridor Name	Corridor Notes
7	US 30 to Philadelphia	Eastern part of US 30
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	US 30/Lancaster Avenue	US 30 between US 1 (City Avenue) and 30th Street Station/Schuylkill Expressway area. Subcorridor characteristics include: high change in VC, 2005 to 2035, bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

While Bottleneck Improvements of a Limited Scale are appropriate everywhere, 63rd and City Avenue is a choke point on the US 1 corridor (see Subcorridor 5F) and causes backups to the US 30 corridor (Denny, 10/17/08). While Growth Management and Smart Growth strategies are appropriate everywhere, they are especially important in corridors with a high change in V/C ratios, which is considered likely based on the travel model. While Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations.

Corridor Studies Include (also see Bibliography)

Reference for note: e-mail from Philadelphia Streets Department, Charles Denny, 10/17/08.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	US 30 Main Line	Ardmore and Radnor; west of US 1. This subcorridor includes many rail stations along the R5 and Norristown High Speed Line. Subcorridor characteristics include: bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Expanded Parking/Improved Access to Stations (all modes)
- Transit First Policy
- Transit-Oriented Development (TOD)

Strategy Notes

While Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
64795	Rock Hill Rd./Belmont Ave.

Corridor Studies Include (also see Bibliography)

Darby Creek Greenway Study (Delaware County Planning Department, Currently Underway)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	Berwyn, small community centers on US 30	Centers around US 30 west of Radnor, east of Malvern. Subcorridor characteristics include: high change in VC, 2005 to 2035; rail station with 500 or more passenger boardings per weekday.

Very Appropriate Strategies

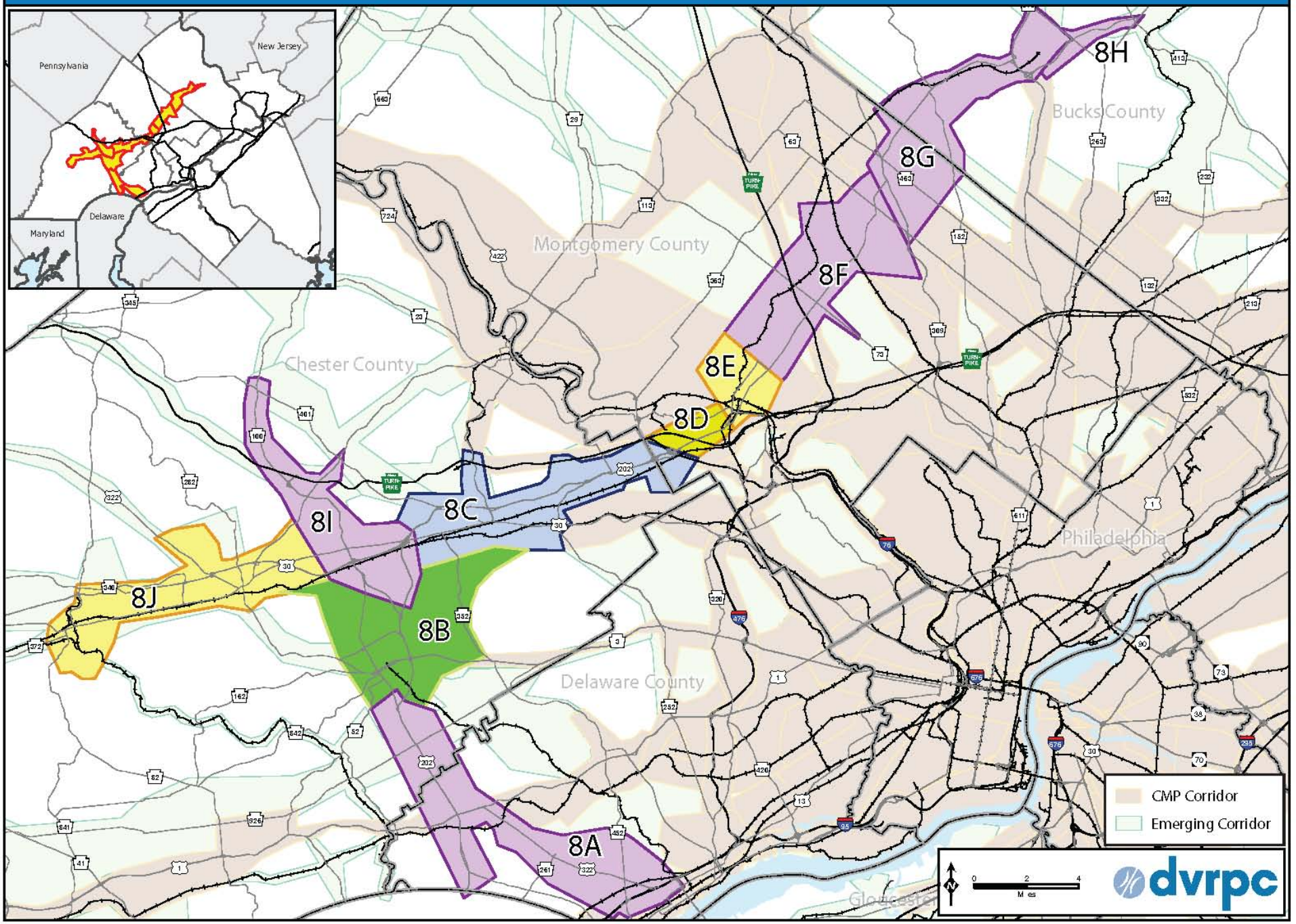
- Closed Loop Computerized Traffic Signals
- Parking Operations
- County and Local Road Connectivity
- Passenger Intermodal Center or Garage for Transit Riders
- Transit-Oriented Development (TOD)
- Transportation Services for Specific Populations

Strategy Notes

While Growth Management and Smart Growth and Access Management are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios in the future based on regional travel modeling. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one.

PA Corridor 8 - US 202, US 322, US 30, & PA 100

Figure 27



Corridor ID	Corridor Name	Corridor Notes
8	US 202, US 322, US 30, and PA 100	The focus is US 202. Other related, generally similar corridors extending from it were included, such as US 322, the western part of US 30, and PA 100.
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	US 202 Section 100 (Delaware to Matlack Street) and US 322 broad corridor	From the State of Delaware through Delaware County to Matlock Street in the vicinity of West Chester (Chester County), US 202 is generally four lanes, signalized, with uncontrolled access (US202.com). This subcorridor also includes the intersection with US 1, and US 322 between US 1 and the interchange with I-95. Subcorridor characteristics include: high future VC; high change in VC, 2005 to 2035.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Planning and Design for Nonmotorized Transportation
- Channelization
- County and Local Road Connectivity
- Extensions or Changes in Bus Routes

Strategy Notes

While Access Management (both engineering and policy strategies) and Improvements for Pedestrians and Bicyclists are appropriate everywhere, they are specifically recommended in the US 202 Section 100 Land Use Implementation Study. While Growth Management and Smart Growth, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios and high V/C ratios in the future. There are currently five capacity-adding projects planned for this subcorridor. Along with the levels of future congestion, General Purpose Lanes and New Transit Capacity are appropriate strategies in this subcorridor, if strategies further up the list cannot adequately address problems without also mixing in new capacity.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
15385	US 202 (Section 100 Design)(ES1)
57780	Rt. 322/Comm Barry Bridge/I-95 2nd St. Interchange
69816	US 322, US 1 to Featherbed Lane
69817	US 322, Featherbed Lane to I-95 (Cherry Tree Road
79329	Bridgewater Road Extension

Corridor Studies Include (also see Bibliography)

PA 100 Corridor Study (DVRPC 98002, 1998), Route 322 Land Use Strategies Study (DVRPC Report 02022, 2002) and Route 202 Section 100 Land Use Strategies Study (DVRPC Report 01024, 2001), I-95/US 322 Interchange Traffic Study (DVRPC 08024, 2008), US Route 202 Section 100 Land Use Implementation and Coordination (DVRPC 08004, 2008), Revitalization Plan Area I (Delaware County Planning Department, Update Underway), Revitalization Plan Area 2 (Delaware County Planning Department, Update Underway), Marcus Hook TOD Master Plan (KSK, 2003)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	US 202 Section 200 (Matlack Street-US 30) and West Chester area. Includes former subcorridor 8K: Borough of Malvern, US 30	US 202 is generally a four-lane, limited-access expressway with close interchanges in this section (US202.com). This subcorridor includes the broad developed area, including West Chester, PA 3, PA 352, and US 322 areas. In an effort to simplify, former 8K was combined with 8B in October 2008 per Chester County. This brings in the additional centers along US 30, including the Malvern and Paoli R5 stations. Subcorridor characteristics include: high change in VC, 2005 to 2035; two or more times the regional average of people in poverty; two or more times the regional average of elderly people (over age 75); two or more times the regional average of Hispanic people; two or more times the regional average of limited English proficiency; two or more times the average regional density of households or employment. Characteristics of former 8K are rail station with 500 or more passenger boardings per weekday; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Planning and Design for Nonmotorized Transportation
- Expanded Parking/Improved Access to Stations (all modes)
- Park-and-Ride Lots

Strategy Notes

While Growth Management and Smart Growth and Access Management are appropriate everywhere, they are especially important in this subcorridor likely to experience high growth in V/C ratios in the future. While Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing sucesses in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
13945	US 202, PA 252 to US 30 (Sec. 300 Design)

Corridor Studies Include (also see Bibliography)

US 322/202 Interchange Completion Study (DVRPC 08009, 2008), US 202 Section 200 Chester County Transportation Operation Audit (DVRPC 10041, scheduled for release in 2010)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	US 202 Section 300 (US 30 to North Valley Road) area north to turnpike. This includes	US 202 is generally a four-lane limited access expressway (US202.com) with extensive development. This subcorridor includes the area north of US 202, including PA 29 up to the PA Turnpike, and the Great Valley area. In an effort to simplify, former

	former subcorridor 8D: US 202 Section 400 (King of Prussia/Valley Forge area) except Paoli	8D was combined with 8C in October 2008 per Chester County. Former 8D was the section of US 202 between North Valley Road and Gulph Road with the I-76 and US 422 interchanges. It is the highest volume section of US 202 (US202.com). Subcorridor characteristics include: high change in VC, 2005 to 2035. Characteristics of former 8D additionally include high current VC, and high future VC.

Very Appropriate Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Incident Management
- Traveler Information Services
- Expanded Parking/Improved Access to Stations (all modes)
- Passenger Intermodal Center or Garage for Transit Riders
- Park-and-Ride Lots
- Major Reconstruction with Minor Capacity

Strategy Notes

Includes strategies from Section 300 CMS Coordination Project and PA CMS: PA 100 Study segment 1. While Marketing/Outreach for Transit and TDM Services and Improvements for Bicyclists are appropriate everywhere, they are specifically recommended in the Phoenixville Intermodal Study. While Growth Management and Smart Growth, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in this subcorridor with high VC ratios now and in the 2035 regional travel modeling. Given the levels of current and future congestion, General Purpose Lanes and transit capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. The I-76 (PA Tunpike) Electronic Interchange at PA 29 (LRP ID: 47) is listed as a Major Regional Project in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
13945	US 202, PA 252 to US 30 (Sec. 300 Design)
64494	US 202, Swedesford Rd. - Rt. 29 (Sec. 320 Mainln)
64498	US 202, Exton Bypass to Rt. 29 (Sec. 330- Mainln)

Corridor Studies Include (also see Bibliography)

US 202 Section 300 CMS Coordination Project (PennDOT, Chester County, 1999), also covered in PA 100 Corridor Study (DVRPC 98002, 1998), Phoenixville Area Intermodal Transportation Study (DVRPC 03001, 2003), US 202 Section 400 documents (PennDOT), Schuykill Crossing Traffic Study (DVRPC 07040, 2008).

Subcorridor ID	Subcorridor Name	Subcorridor Notes
D	US 202 Section 500-Highway (Gulph Road-PA 23) except Norristown area. This was formerly subcorridor 8E.	In this section, US 202 is primarily a four-lane arterial highway (US202.com). PennDOT's section 500 is broken in two parts for the CMP. Section 500 continues past PA 23 through Norristown to Johnson Highway. In an effort to simplify, some subcorridors were combined per Chester County; this subcorridor was changed from 8E to 8D in October 2008.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Transit First Policy
- More Frequent Transit or More Hours of Service

Corridor Studies Include (also see Bibliography)

Schuylkill Crossings Traffic Study (DVRPC 07040, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
E	Norristown part of US 202 Section 500. This was formerly subcorridor 8F.	US 202 in the borough is Dekalb Street (US 202 N) and Markley Street (US 202 S). This subcorridor includes the local street grid of Norristown. Subcorridor characteristics include: high change in VC, 2005 to 2035; rail station with 500 or more passenger boardings per weekday; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment. In an effort to simplify, some subcorridors were combined per Chester County; this subcorridor was changed from 8F to 8E in October 2008.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Parking Operations
- County and Local Road Connectivity
- Transit-Oriented Development (TOD)
- Transportation Services for Specific Populations

Strategy Notes

While Growth Management and Smart Growth and Access Management are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios in the future based on regional travel modeling. Similarly, while Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. There are currently more than five capacity-adding projects planned for this subcorridor. Given the levels of current and future congestion, General Purpose Lanes and New Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. The R6 Regional Rail Extension from Norristown to Wyomissing, Berks County (LRP ID: O) is listed as a Major Regional Project in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
16665	US 202 South Bound (Section 500), Markley St.
48172	PA 23 Relocation at Allendale Rd. and Beidler Rd.
57858	Lafayette St. Extension

79863	Lafayette St- Ford Street to Conshohocken Rd.
79864	Lafayette St - Barbados St. to Ford St.
79928	Lafayette St./US 202 Dannehower Bridge Interchange
80021	US 202 - Markley St Improvements (Section 510)
80022	US 202 - Markley St. Improvements (Section 520)

Corridor Studies Include (also see Bibliography)

US202.com, Schuylkill Crossings Traffic Study (DVRPC 07040, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
F	US 202 Section 600 (Johnson Highway-Hancock Road) area. This was formerly subcorridor 8G.	US 202 in this subcorridor is largely two lanes wide, with medium/high-density development and commercial uses (US202.com). The subcorridor extends slightly east to PA 63. PA 73, Sumneytown Pike, and the SEPTA R5 Rail Line cross US 202 in this subcorridor. It includes surrounding developed areas. Subcorridor characteristics include: high change in VC, 2005 to 2035; rail station with 500 or more passenger boardings per weekday. In an effort to simplify, some subcorridors were combined per Chester County; this subcorridor was changed from 8G to 8F in October 2008.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Extensions or Changes in Bus Routes

Strategy Notes

Additional capacity is recommended in the US 202 Section 600 CMS report. While Improvements for Pedestrians and Bicyclists and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are specifically recommended in the Developing Around Transit Study. While Growth Management and Smart Growth and Access Management are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios in the future based on regional travel modeling. There are currently greater than five major SOV capacity-adding projects planned for this subcorridor in the TIP. Given the levels of current and future congestion, General Purpose Lanes and New Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
16477	PA 309, Welsh Rd. to Highland Ave.
16731	US 202 Parkway, PA 63 to 463 (Section 701)
47396	US 202 Parkway, PA 463 to Pickertown Rd (Sec. 711)
50364	US 202, Dekalb Pike, Section 610
63486	US 202, Johnson Hwy. to Twp. Line Rd. (61S)
63490	US 202, Twp. Line Rd. to Morris Rd. (Sec 61N)
63491	US 202, Morris Rd. to PA 63 (Sec 65S)
63492	US 202, Swedesford Rd. to PA 309 (Section 65N)
64017	Sumneytown Pike

Corridor Studies Include (also see Bibliography)

US 202 Section 600 Congestion Management System Program (DVRPC, 1995), Schuylkill Crossings Traffic Study (DVRPC 07040, 2008), Developing Around Transit (DVRPC 06034, 2006)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
G	US 202 Section 700 area (PA 63 to PA 611). This was formerly subcorridor 8H.	US 202 from Hancock Road and PA 63 to PA 611 is generally two lanes wide, with medium-density development. It connects Montgomeryville and Doylestown (Bucks County) (US202.com). Subcorridor characteristics include: two or more times the regional average of people with physical disabilities; two or more times the regional average of elderly people (over age 75); two or more times the average regional density of households or employment. In an effort to simplify, some subcorridors were combined per Chester County; this subcorridor was changed from 8H to 8G in October 2008.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Extensions or Changes in Bus Routes

Strategy Notes

Additional capacity is recommended in the US 202 Section 700 CMS report. Walking and Bicycling are appropriate everywhere and should be incorporated in this densely developed subcorridor. There are currently greater than five capacity-adding projects planned in the TIP for this subcorridor. Given the CMS Study and number of projects approved, General Purpose Lanes and New Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. Widening and reconstruction of County Line Road from PA 309 to PA 611 (LRP ID: 34) is listed as a Major Regional Project in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
12923	Bristol Road Extension
16477	PA 309, Welsh Rd. to Highland Ave.
16731	US 202 Parkway, PA 63 to 463 (Section 701)
47395	US 202 Parkway, Pickertown Rd to PA 611 (Sec. 721)
47396	US 202 Parkway, PA 463 to Pickertown Rd (Sec. 711)
57623	County Line Rd. Widening
64779	County Line Road Widening
64811	PA 463 Horsham Rd.

Corridor Studies Include (also see Bibliography)

US 202 Section 700 Community Task Force Report (September, 2005), US 202 Section 700 Congestion Management System Program (DVRPC, 1995), Bristol Road Extension Traffic Study (DVRPC 08032, 2008), US 202 Section 700 Traffic Study (DVRPC 07009, 2007)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
H	US 202 north of Section 700 (PA 611-PA 413) area. This was formerly subcorridor 8I.	This subcorridor is crossed by PA 313 and PA 413. East of PA 413, it becomes an emerging/regionally significant corridor. It is the section closest to the New Jersey border. In an effort to simplify, some subcorridors were combined per Chester County; this subcorridor was changed from 8I to 8H in October 2008.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Extensions or Changes in Bus Routes

Strategy Notes

While Safety Improvements and Programs, Signage, Intersection Improvements of a Limited Scale, and Improvements for Pedestrians and Bicyclists are appropriate everywhere, they are specifically recommended in the US 202/PA 179 Study.

Corridor Studies Include (also see Bibliography)

Pennsylvania Congestion Management System - PA 413 Corridor (DVRPC 03016, 2003), US 202/PA 179 Corridor Study (DVRPC 07033, 2007)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
I	PA 100 north of US 30 area. This was formerly subcorridor 8L.	Intersection of US 202 and PA 100, to Exton Bypass, to just north of PA 401. Subcorridor characteristics include: rail station with 500 or more passenger boardings per weekday. In an effort to simplify, some subcorridors were combined per Chester County; this subcorridor was changed from 8L to 8I in October 2008.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Planning and Design for Nonmotorized Transportation
- Channelization
- County and Local Road Connectivity
- Extensions or Changes in Bus Routes

Strategy Notes

PA CMS: PA 100 Corridor Study segments 3,4,5,6,8,10. PA 100 CMS Study recommends capacity additions in areas of MPMS 14515 and MPMS 62863. General Purpose Lanes were an appropriate strategy in the 2006 CMP. MPMS 70240 remains consitent with the CMP for continuity. While Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. I-76 (PA Turnpike) Widening from Downingtown to Valley Forge (LRP ID: 40) is listed as a Major Regional Project in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
14515	PA 100

62863	PA 100 Vanguard Improvement
70240	US 30 Business

Corridor Studies Include (also see Bibliography)

Pennsylvania Congestion Management System: PA 100 Corridor Study (DVRPC Publication 02009, 2002), PA 100 Corridor Study (DVRPC Publication 98002, 1998)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
J	US 30 communities west of PA 100. This was formerly subcorridor 8M.	Downingtown and Coatesville; area west of intersection of PA 100, US 30, and US 30 Business. Subcorridor characteristics include: multiple rail stations with SEPTA R5 and Amtrak service; two or more times the regional average of non-Hispanic minorities; two or more times the regional average of female head of household with child; two or more times the regional average of Hispanic people; two or more times the regional average of limited English proficiency. In an effort to simplify, some subcorridors were combined per Chester County; this subcorridor was changed from 8M to 8J in October 2008.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- County and Local Road Connectivity
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- Transportation Services for Specific Populations

Strategy Notes

While Revision of Existing Land Use/Transportation Regulations, Growth Management and Smart Growth, Improvements for Pedestrians and Bicyclists, Signage, Access Management (both engineering and policy strategies), and Basic Upgrading of Traffic Signals are appropriate everywhere, they are specifically recommended in the Guiding Transportation Investments and Land Use Decisions study. TOD is specifically recommended for the Thorndale Station in the Implementing TOD Study. While Bottleneck Improvements of a Limited Scale are appropriate everywhere, they are specifically recommended in the PA 100 CMS. While Improvements for Pedestrians and Bicyclists are appropriate everywhere, they are specifically recommended in the Implementing TOD Study. Revision of Existing Land Use/Transportation Regulations is specifically recommended in the R5 Extension Study. While Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. The US 30 Business Widening from US 202 to the Exton Mall (LRP ID: 46), the US 30/Coatesville-Downingtown Bypass (LRP ID: 48), and the R5 Regional Rail Extension from Thorndale to Atglen (LRP ID: W), are listed as Major Regional Projects in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

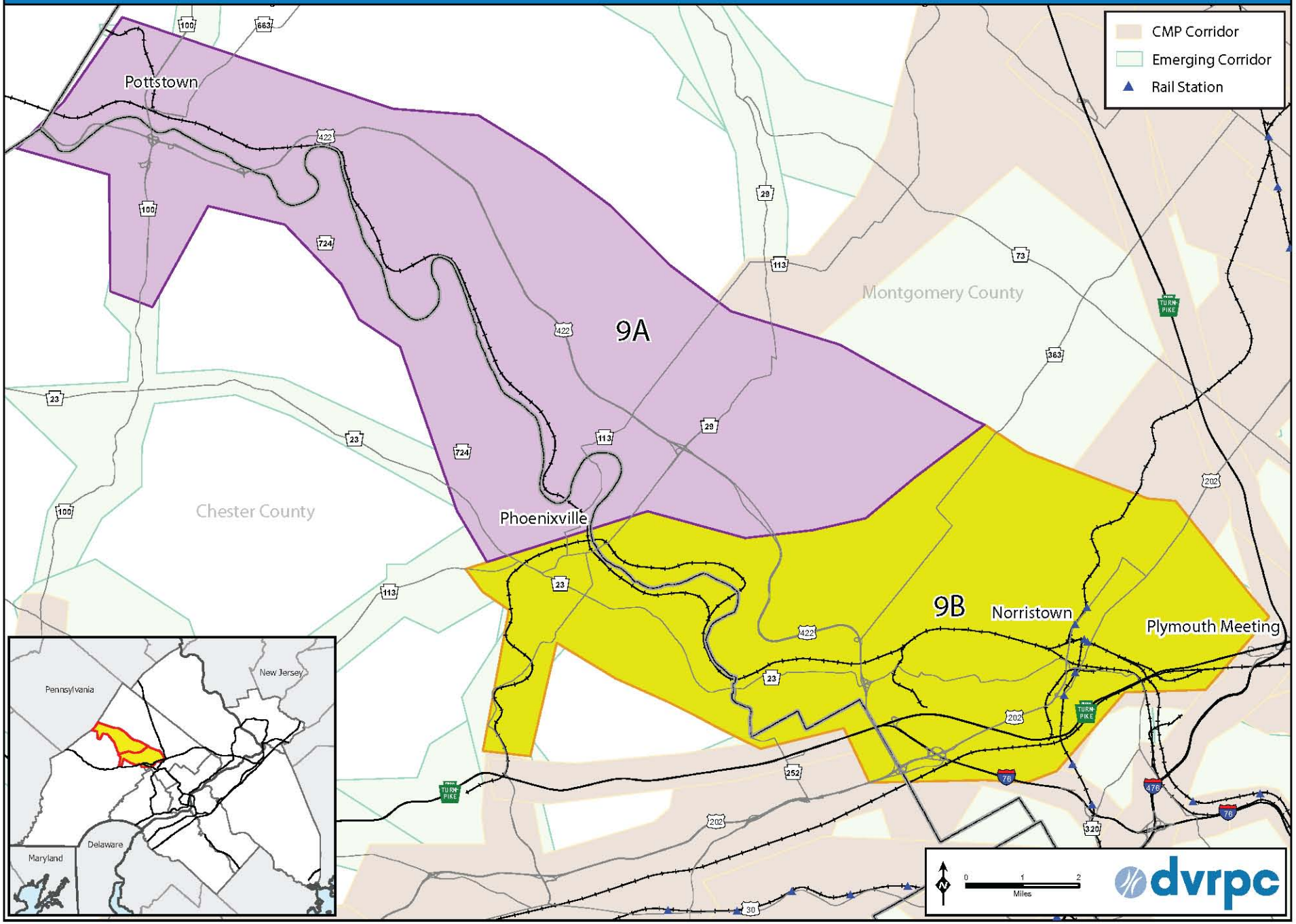
TIP MPMS	Project Name
14572	US 30 Bypass at PA 113 (Uwchlan Ave.)
83710	Boot Road Extension Bridge

Corridor Studies Include (also see Bibliography)

PA 100 Corridor Study (DVRPC 98002, 1998), Pennsylvania Congestion Management System: PA 100 Corridor Study (DVRPC Publication 02009, 2002), Implementing Transit-Oriented Development (DVRPC 04044, 2004), US 30 Coatesville-Downingtown Bypass Traffic Study (DVRPC 08099, 2008), Needs and Opportunities Study for the R5 Extension West of Thorndale (DVRPC 07021, 2007), Guiding Transportation Investments and Land Use Decisions Along US 322 - Chester County (DVRPC 09063, 2010), Closed Loop Traffic Signal Systems Analysis: US 30 Business in Chester County, Pennsylvania (DVRPC 10038, scheduled for release in 2010)

PA Corridor 9 - US 422

Figure 28



Corridor ID	Corridor Name	Corridor Notes
9	US 422	North-South broader corridor to King of Prussia and turnpike
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	Oaks - Pottstown area	This subcorridor starts just north of Egypt Road. US 422 itself is a freeway, but the predominant character of this subcorridor is people driving to each destination, often on roads designed for through traffic that have experienced extensive commercial development, and this is reflected in the strategies. Subcorridor characteristics include: high change in VC, 2005 to 2035; high concentrations of numerous transportation-disadvantaged populations; 50 percent or more of the subcorridor is environmentally sensitive or protected land; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- County and Local Road Connectivity
- Transit First Policy
- Extensions or Changes in Bus Routes
- Local Fixed Rail Service (New, Extensions, or Added Stations)

Strategy Notes

While Revision of Existing Land Use/Transportation Regulations, Growth Management and Smart Growth, Improvements for Pedestrians and Bicyclists, and Access Management Policies and Projects are appropriate everywhere, they are specifically recommended in the US 422 Corridor Master Plan. While Access Management Projects, Signage, and Safety Improvements and Programs, and Intersection Improvements of a Limited Scale are appropriate everywhere, they are specifically recommended in the PA 724 Study. Access Management Policies and Improvements for Bicyclists are specifically recommended in the Phoenixville Intermodal Study and are also important in densely developed areas, as can be found in this subcorridor. While Growth Management and Smart Growth and Access Management are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios in the future based on regional travel modeling. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. This is an area with a high density of households and jobs where Improvements for Walking and Bicycling, though appropriate everywhere, should be especially considered. Any future consideration of adding road capacity should be carefully examined, as 50 percent or more of this subcorridor is in sensitive environmental areas. The R6 Regional Rail Extension from Norristown to Wyomissing, Berks County (LRP ID: O) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

US 422 Corridor Master Plan (DVRPC 09035, 2009), Intercounty Relief Route: Schuylkill, East Pikeland, Phoenixville, Upper Providence (DVRPC 06024, 2006), PA 724 Corridor Study (DVRPC 04021, 2004), Phoenixville Area Intermodal Transportation Study (DVRPC 03001, 2003), Pottstown Bypass (US 422) Reconstruction Traffic Study (DVRPC 02043, 2002)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	US 202-Oaks	This subcorridor includes part of Lower Merion Township, US 202, and the Schuylkill River crossings. The northern boundary is the Egypt Road/Oaks area. US 422 itself is a freeway, but the predominant character of this subcorridor is people driving to each destination, often on roads designed for through traffic that have experienced extensive commercial development, and this is reflected in the strategies. Subcorridor characteristics include: high current VC; high future VC, and high growth in VC; rail station with 500 or more passenger boardings per weekday; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- More Frequent Transit or More Hours of Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

Strategy Notes

While Revision of Existing Land Use/Transportation Regulations, Growth Management and Smart Growth, Improvements for Pedestrians and Bicyclists, and Access Management Policies and Projects are appropriate everywhere, they are specifically recommended in the US 422 Corridor Master Plan. While Access Management Policies and Improvements for Bicyclists are appropriate everywhere, they are specifically recommended in the Phoenixville Intermodal Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, but they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. There are currently greater than five capacity-adding projects planned for this subcorridor. Given the levels of current and future congestion, General Purpose Lanes, Interchange with Related Road Segments, and New Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. The Norristown High Speed Line extension from Hughes Park to the King of Prussia Mall (LRP ID: Q), R6 Regional Rail Extension from Norristown to Wyomissing, Berks County (LRP ID: O), US 422 Mainline Widening (River Crossing) from US 202 to PA 363 (LRP ID: 98), and US 422 Bridge and PA 23 Interchange (River Crossing) Bridge Replacement/Widening and Intersection/Interchange Improvements (LRP ID: 96), are listed as Major Regional Projects in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
16211	I-76 Ramps Phase 3, Henderson/Gulph Rds. Widening
16665	US 202 South Bound (Section 500), Markley St.

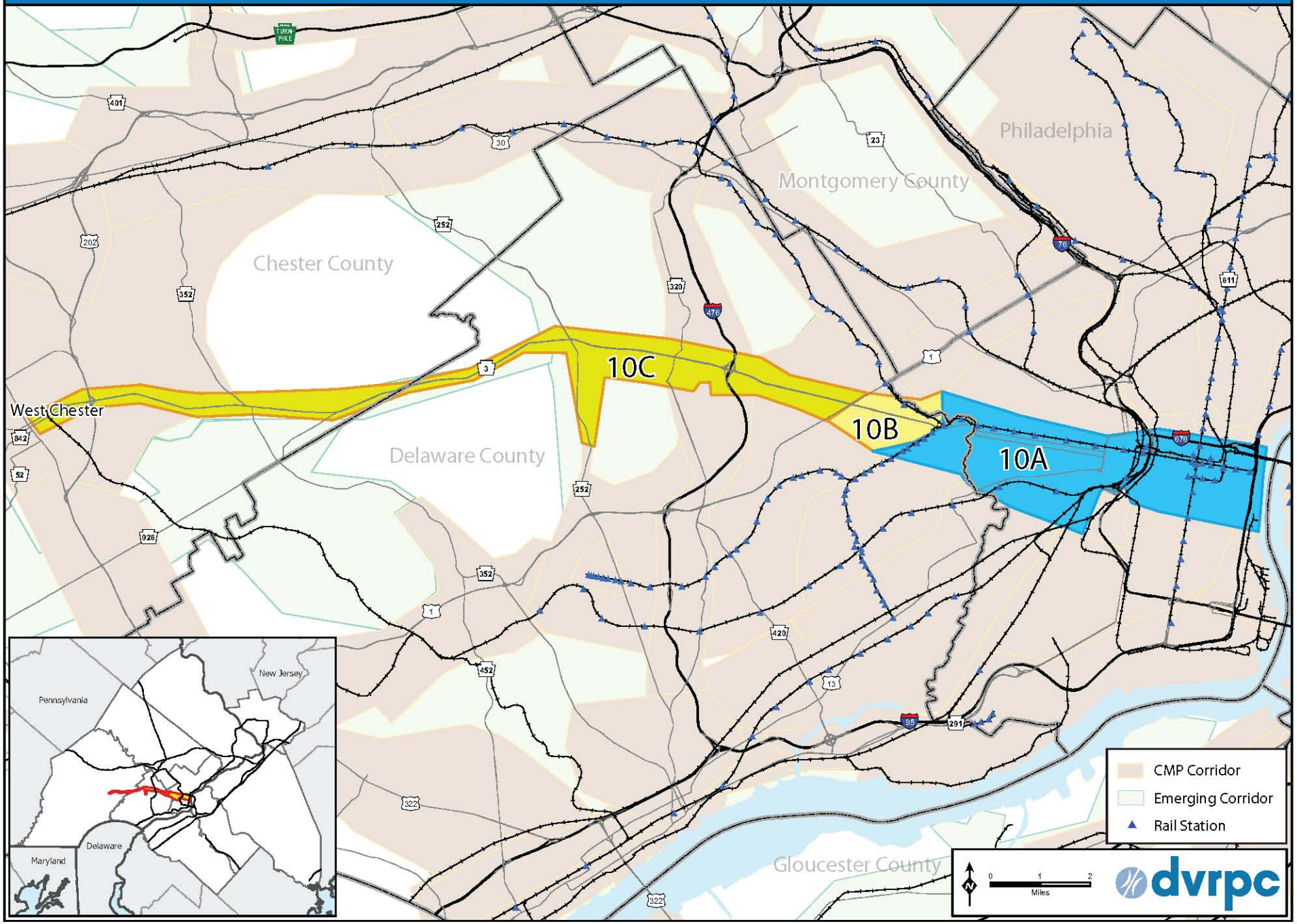
48172	PA 23 Relocation at Allendale Rd. and Beidler Rd.
48187	I-76 Ramps Phase 2 - Henderson/Gulph Road Widen
50364	US 202, Dekalb Pike, Section 610
57659	French Creek Parkway
57858	Lafayette St. Extension
63486	US 202, Johnson Hwy. to Twp. Line Rd. (61S)
64796	US 422/PA 363 Interchange
68064	I-76 West Ramps Phase1- Henderson/Gulph Road Widen
70197	US 422 (New) Exwy Bridge Over Schuylkill River
79863	Lafayette St- Ford Street to Conshohocken Rd.
79864	Lafayette St - Barbados St. to Ford St.
79928	Lafayette St./US 202 Dannehower Bridge Interchange
80021	US 202 - Markley St Improvements (Section 510)
80022	US 202 - Markley St. Improvements (Section 520)

Corridor Studies Include (also see Bibliography)

US 422 Corridor Master Plan (DVRPC 09035, 2009), Interim Improvements to Help Relieve US 422 Westbound Evening Traffic Problems (2005), Montgomery County Transportation Plan (2005); InterCounty Relief Route: Schuylkill, East Pikeland, Phoenixville, Upper Providence (DVRPC 06024, 2006), Phoenixville Area Intermodal Transportation Study (DVRPC 03001, 2003), Schuylkill Crossings Traffic Study (DVRPC 07040, 2008)

PA Corridor 10 - PA 3 & Center City

Figure 29



Corridor ID	Corridor Name	Corridor Notes
10	PA 3 and Center City	Penns Landing to west through Center City, south of I-676, extended to vicinity of PA 3 and US 1
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	Center City, University City	Penns Landing west to Cobbs Creek Expressway; from Callowhill Street south including large, densely developed part of south Philadelphia to vicinity of Woodland Avenue and 58th Street. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Enhanced Transit Amenities and Safety
- Expanded Parking/Improved Access to Stations (all modes)
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

The Philadelphia Streets Department states: “Chestnut and Walnut streets do not have electronic controllers with fiber optic interconnect and are not compatible with ITS. There is a need for parking areas on the parallel rail lines (trolley and El). People are parking in neighborhoods and using trains," (Denny, 10/17/08). Includes South Street Bridge Reconstruction Project, 2005 CAMP focus area at 34th Street, Grays Ferry Road, and East Coast Greenway. While Improvements for Pedestrians and Bicyclists, Basic Upgrading of Traffic Signals, and Access Management (both engineering and policy strategies) are appropriate everywhere, they are specifically recommended in the Baltimore Avenue Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. While Bottleneck Removal for Passenger Rail is appropriate everywhere, it has been discussed as a significant issue for the region in this area. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. While Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. Given the levels of current and future congestion, General Purpose Lanes and Transit Capacity are appropriate strategies in this subcorridor, if strategies further up the list cannot adequately address problems without also mixing in new capacity. The Seamless Regional Transit Acess Study recommends extending some NJ Transit bus lines to 30th Street Station.

Corridor Studies Include (also see Bibliography)

Congestion and Accident Mitigation (CAMP) Program Report (DVRPC, 2005); PA CMS US 1/Baltimore Pike (DVRPC, 2000), Baltimore Avenue Corridor Revitalization Plan (DVRPC 07051B, 2007), Seamless Regional Transit Access (DVRPC 08069, 2008), Revitalization Plan Area 5 (Delaware County Planning Department, Update Underway), Darby Creek Greenway Study (Delaware County Planning Department, Currently Underway)

Source of Philadelphia Streets Department comments is e-mail from Charles Denny (10/17/08)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	PA 3 from Cobbs Creek to US 1	Includes vicinity of 69th Street Boulevard. Subcorridor characteristics include: bus ridership is 6,000 or more per day; transit usage approaching a lane of traffic.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Parking Operations
- County and Local Road Connectivity
- Transit-Oriented Development (TOD)
- Transportation Services for Specific Populations

Strategy Notes

While Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one.

Corridor Studies Include (also see Bibliography)

Feasibility Analysis of West Chester Busway 69th Street Terminal to I-476 (DVRPC 07001, 2007), Pennsylvania Congestion Management System - US 1/Baltimore Pike Corridor (DVRPC 00009, 2000), Revitalization Plan Area 5 (Delaware County Planning Department, Update Underway), Darby Creek Greenway Study (Delaware County Planning Department, Currently Underway), Transit Advantage: Transit Signal Priority on PA Route 3 (Chester County TMA, June 2007)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	PA 3 (PA 476 to US 202)	US 1 to just west of PA 252 (Newtown Road). Subcorridor characteristics include: Bus ridership is 6,000 or more per day.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- More Frequent Transit or More Hours of Service

Strategy Notes

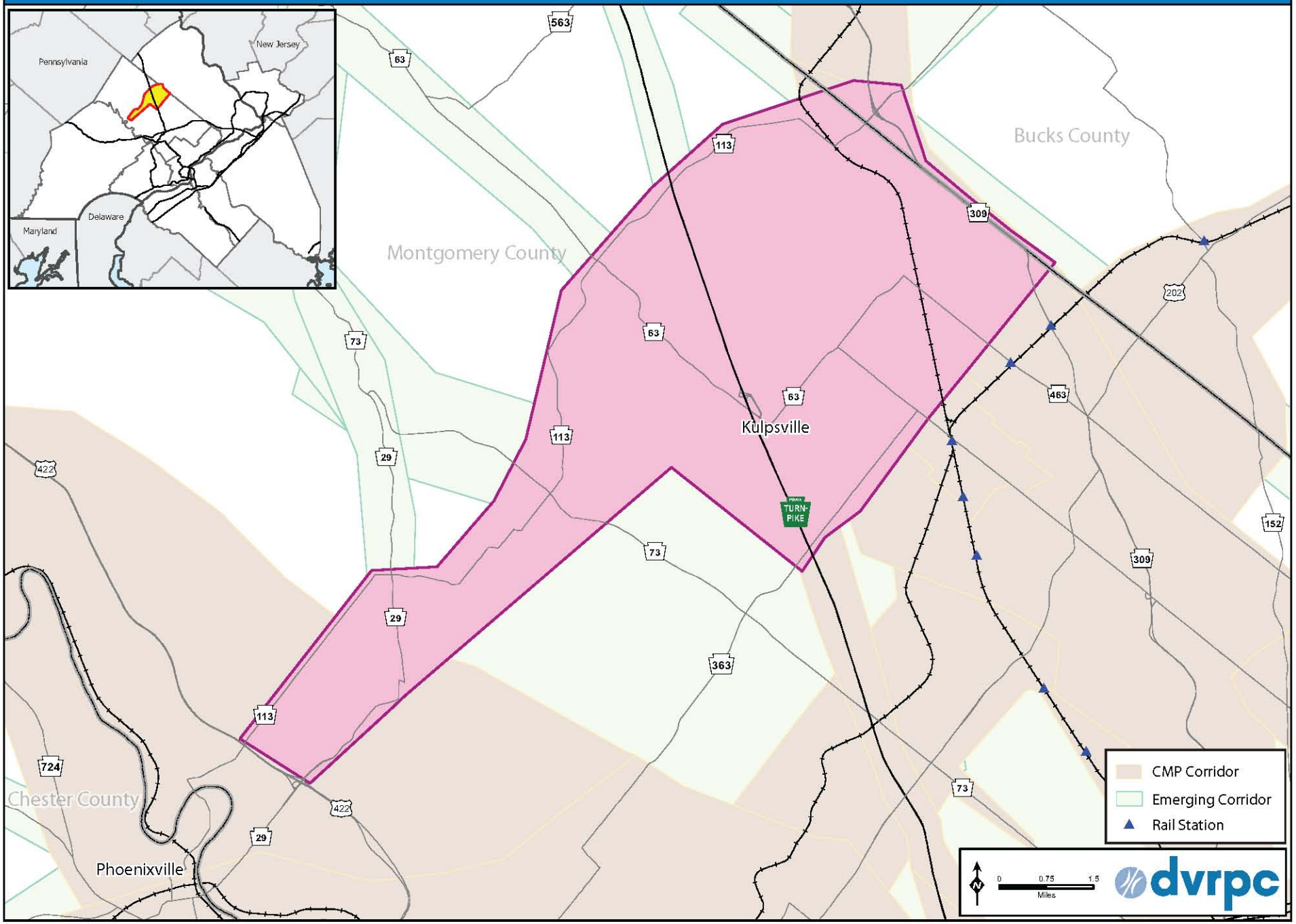
While Access Management (both engineering and policy strategies), Growth Management, and Smart Growth are appropriate everywhere, they are specifically recommended in the Route 3 Study. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one.

Corridor Studies Include (also see Bibliography)

Pennsylvania Congestion Management System - US 1/Baltimore Pike Corridor (DVRPC 00009, 2000), Route 3 West Chester Pike Land Use and Access Management Strategies, Phase 1 (DVRPC 05029, 2006), Feasibility Analysis of West Chester Busway 69th Street Terminal to I-476 (DVRPC 07001, 2007), Darby Creek Greenway Study (Delaware County Planning Department, Currently Underway), Transit Advantage: Transit Signal Priority on PA Route 3 (Chester County TMA, June 2007)

PA Corridor 11 - PA 113 Area

Figure 30



Corridor ID	Corridor Name	Corridor Notes
11	PA 113 area	This corridor was developed based primarily on TIP projects, and secondarily on analysis indicating east-west congestion
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	PA 113 (Souderton-Harleysville Pike) area, between US 422 and PA 309/vicinity of Montgomery/Bucks county line	Commuters seem to be the source of transportation issues. Hatfield Meat Packing Plant generates a lot of truck traffic and also commuters cut through going between PA 309 and NE Extension. This area includes intersections with PA 29, PA 73, PA 63, the intersection of Sumneytown Pike and I-476, PA 463, and County Line Road. Subcorridor characteristics include: two or more times the regional average of elderly people (over age 75); two or more times the regional average of limited English proficiency.

Very Appropriate Strategies

- Channelization
- County and Local Road Connectivity
- Park-and-Ride Lots
- Demand Response Transit Services
- Transportation Services for Specific Populations

Strategy Notes

While Growth Management and Smart Growth and Intersection Improvements of a Limited Scale are appropriate everywhere, these strategies were specifically recommended in the PA 113 Study. General Pupose Lanes were appropriate strategies in the the 2006 CMP for this subcorridor. MPMS 71174 and 16438 remain consistent with the CMP.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

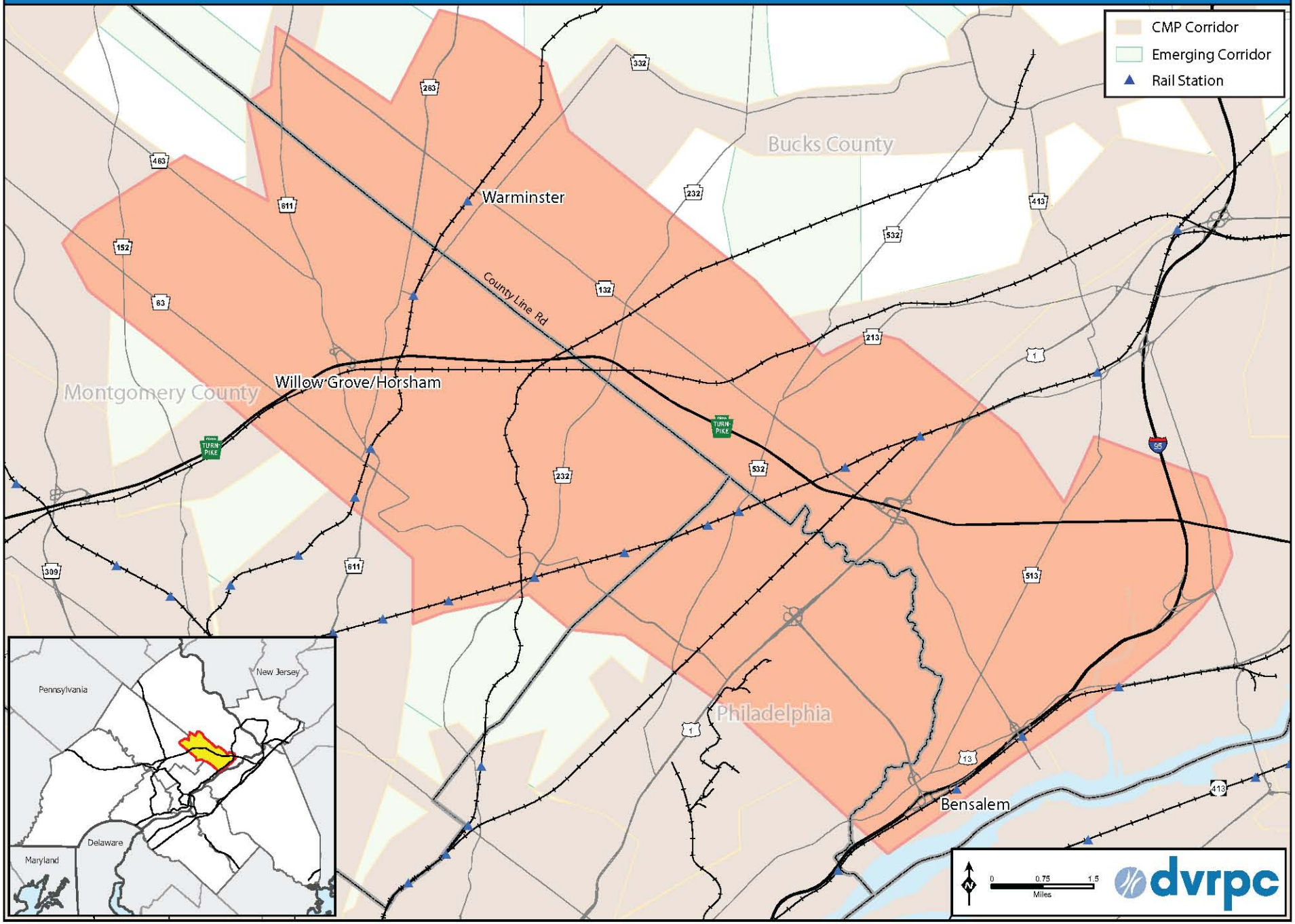
TIP MPMS	Project Name
16438	PA 309 Connector Project-Phase I

Corridor Studies Include (also see Bibliography)

PA 113 Heritage Corridor Transportation and Land Use Study (McMahon Associates, 2005)

PA Corridor 12 - PA 132, PA 63, & County Line Road

Figure 31



Corridor ID	Corridor Name	Corridor Notes
12	PA 132, PA 63, and County Line Road interrelated area	This is more of an area than a corridor. It includes the parallel roads north of the turnpike, following Street Road (PA 132) and Woodhaven (PA 63) to I-95
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	PA 132, PA 63, and County Line Road developed area straddling Bucks, Montgomery, and Philadelphia counties	This subcorridor includes major office parks, an air base, and bedroom (commuter) development. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Parking Supply-and-Demand Management (such as by transportation allowances)
- Shuttle Service to Stations

Strategy Notes

While Improvements for Pedestrians and Bicyclists and Access Management (both engineering and policy strategies) are appropriate everywhere, they are specifically recommended in the Developing Around Transit Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. Given the levels of current and future congestion, General Purpose Lanes and New Transit Capacity are appropriate strategies in this subcorridor, if strategies further up the list cannot adequately address problems without also mixing in new capacity. Widening and reconstruction of County Line Road from PA 309 to PA 611 (LRP ID: 34) is listed as a Major Regional Project in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

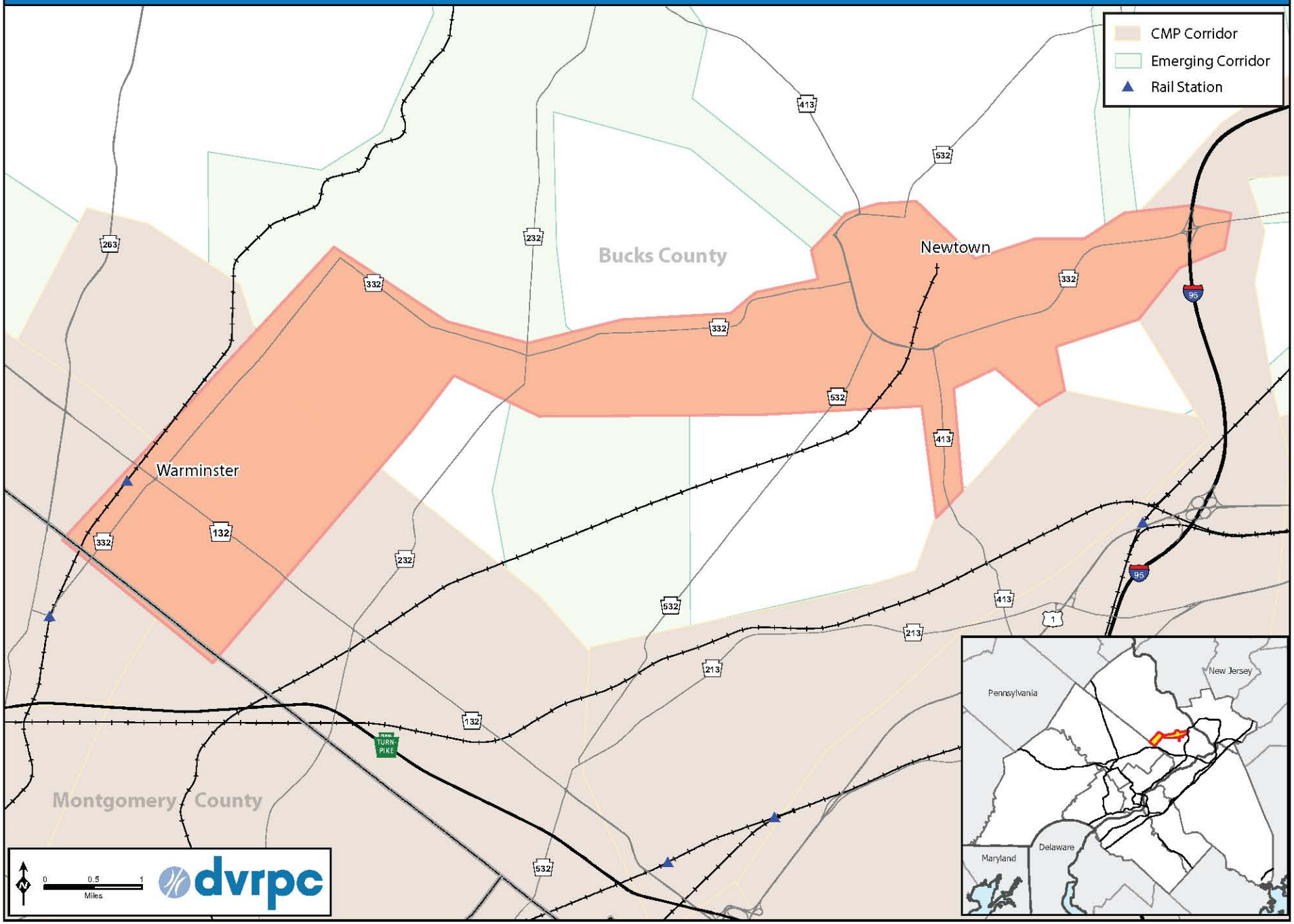
TIP MPMS	Project Name
13347	I-95 / PA Turnpike Interchange
13549	US 1 (Bridges)
57629	County Line Road Extension

Corridor Studies Include (also see Bibliography)

Congestion Management System Analysis: The Woodhaven Road Project (McCormick, Taylor & Assoc., 1997), Assessment of Land Use and Transportation Solutions for the Route 413/513 Corridor (DVRPC Publication 04014, 2004), Pennsylvania Congestion Management System - PA 413 Corridor (DVRPC 03016, 2003), Developing Around Transit (DVRPC 06034, 2006)

PA Corridor 13 - PA 332 (Newtown Bypass) Area

Figure 32



Corridor ID	Corridor Name	Corridor Notes
13	PA 332 (Newtown Bypass) Area	Movement to and from I-95; may be less important when the I-276 and I-95 interchange opens
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	PA 332 area between Bucks/Montgomery county line and the I-95 interchange	This subcorridor includes several big office parks. Subcorridor characteristics include: rail station with 500 or more passenger boardings per weekday; high concentrations of numerous transportation-disadvantaged populations.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Parking Supply-and-Demand Management (such as by transportation allowances)
- Shuttle Service to Stations

Strategy Notes

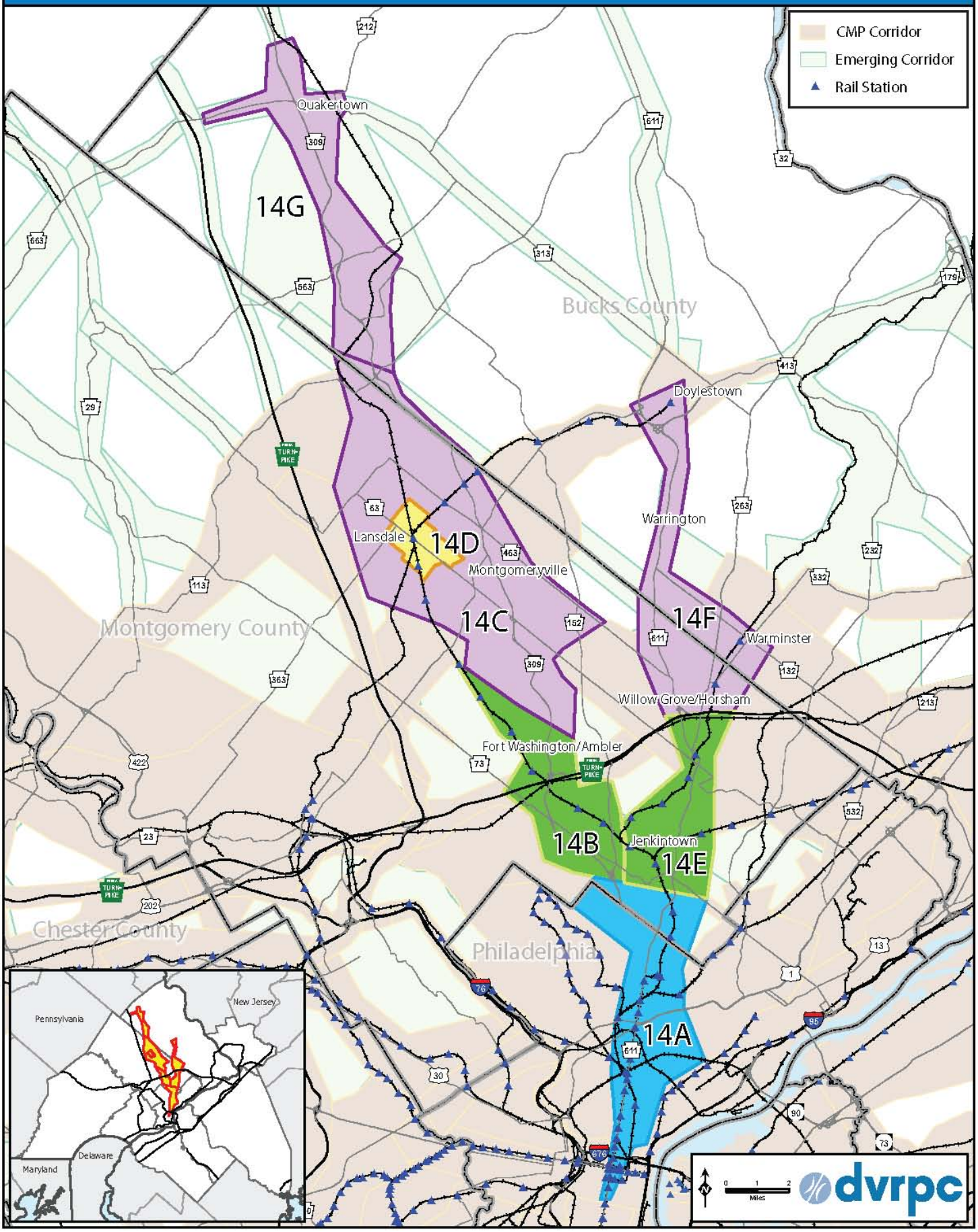
In the Route 413/513 Study, Recommendation Area 9 focused on where PA 413 connects to the Newtown Bypass. The PA 413 Access Management Case Study reviews the intersection of PA 413 and 332. While Improvements for Pedestrians and Bicyclists and Access Management (both engineering and policy strategies) are appropriate everywhere, they are specifically recommended in the Developing Around Transit Study. Access Management (both engineering and policy strategies) is also recommended in the PA 413 Access Management Case Study. While Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations.

Corridor Studies Include (also see Bibliography)

Assessment of Land Use and Transportation Solutions for the Route 413/513 Corridor (DVRPC 04014, 2004), Pennsylvania Congestion Management System-PA 413 Corridor (DVRPC 03016, 2003), Developing Around Transit (DVRPC 06034, 2006), Highway Access Management Case Study Corridor: Durham Road PA 413 (DVRPC 08098, 2008)

Corridor 14 - PA 611 & PA 309

Figure 33



Corridor ID	Corridor Name	Corridor Notes
14	PA 611 & PA 309	Broad Street in Center City extending north to follow PA 309 to Lansdale Borough
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	PA 611/309 from Center City to vicinity of Philadelphia/ Montgomery county line	Washington Avenue (south Philadelphia) to where PA 309 splits from being Cheltenham Avenue just north of the Philadelphia/Montgomery line. Subcorridor characteristics include: high change in VC, 2005 to 2035; bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Expanded Parking/Improved Access to Stations (all modes)
- Economic Development Oriented Transportation Policies
- Transit-Oriented Development (TOD)
- More Frequent Transit or More Hours of Service

Strategy Notes

The Philadelphia Streets Departments states: “Broad Street north of Grange and Old York Road does not have electronic controllers with fiber optic interconnect and are not compatible with ITS. Electronic controllers would allow the system to be responsive to traffic volumes. Cheltenham Avenue has some electronic controllers, but does not have fiber optic interconnect and therefore cannot be responsive to changes in traffic volumes. Many bus routes use Cheltenham Avenue, Broad Street and Old York Road. Electronic controllers can provide transit priority. Broad and Olney is a major transfer point from bus routes to the subway system. Parallel regional rail lines to both 611 and 309 need more parking to allow diversion onto rails. The Fern Rock subway station needs additional parking for diversion onto the Subway,” (Denny, 10/17/08). 57874: I-95/Vine Street Interchange does not add major new capacity, but is a big project. While Signage and Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they are specifically recommended in the Implementing TOD Study. Improvements for Pedestrians and Bicyclists and Revision of Existing Land Use/Transportation Regulations are specifically recommended in the 611 and 263 Corridor Study. While Growth Management and Smart Growth and Access Management are appropriate everywhere, they are especially important in this subcorridor, which is likely to experience high growth in V/C ratios in the future based on regional travel modeling. Similarly, while Marketing/Outreach for Transit and TDM and Improvements for Walking and Bicycling strategies are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations.

Corridor Studies Include (also see Bibliography)

Implementing Transit-Oriented Development (DVRPC 04044, 2004), Routes 611 and 263 Corridor Study - Phase 1 Report (DVRPC 08045B, 2008)
Philadelphia Streets Department comments from e-mail from Charles Denny of 10/17/08

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	PA 309 north of turn from Cheltenham Avenue	This subcorridor is approximately half the area it was in the 2006 CMP, with the PA 611 part broken into a new subcorridor 14E. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Expanded Parking/Improved Access to Stations (all modes)
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)

Strategy Notes

While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. Given the levels of current and future congestion, General Purpose Lanes and New Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity.

Corridor Studies Include (also see Bibliography)

Increasing Intermodal Access to Transit, Phase III (DVRPC, 2006)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
C	PA 309 northern suburbs, vicinity of Butler Pike and Lower Gwynedd Township (Montgomery) north to vicinity of PA 313 and Quakertown Borough (Bucks County)	North of Ambler/Fort Washington. This subcorridor does not include Lansdale Borough (see 14D). Subcorridor characteristics include: rail station with 500 or more passenger boardings per weekday; two or more times the regional average of elderly people (over age 75); two or more times the regional average of limited English proficiency. Recommended for TOD in the Developing Around Transit Study (North Wales Station on SEPTA's R5 Line).

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes

Strategy Notes

MPMS 16731 part of US 202 Section 700. While Intersection Improvements of a Limited Scale are appropriate everywhere, they are specifically recommended in the Route 3 Study. Improvements for Pedestrians and Bicyclists and Revision of Existing Land Use/Transportation

Regulations are specifically recommended in the Developing Around Transit Study. While Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use (especially at rail stations) subcorridors like this one. There are currenlty greater than five capacity-adding projects planned in this subcorridor, supporting the need for capacity additions as a strategy. Given the levels of current and future congestion, General Purpose Lanes and New Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. The Quakertown Line, new passenger rail line from Landsdale to Shelly (LRP ID: N), and widening and reconstruction of County Line Road from PA 309 to PA 611 (LRP ID: 34), are listed as Major Regional Projects in the *Connections* plan.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
16438	PA 309 Connector Project-Phase I
16477	PA 309, Welsh Rd. to Highland Ave.
16731	US 202 Parkway, PA 63 to 463 (Section 701)
47396	US 202 Parkway, PA 463 to Pickertown Rd (Sec. 711)
49315	Portzer Road Connector
63491	US 202, Morris Rd. to PA 63 (Sec 65S)
63492	US 202, Swedesford Rd. to PA 309 (Section 65N)
64017	Sumneytown Pike
64811	PA 463 Horsham Rd.

Corridor Studies Include (also see Bibliography)

Access Management Along County Line Road/PA 309 (DVRPC 05020, 2005), Developing Around Transit (DVRPC 06034, 2006)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
D	Lansdale Borough	Lansdale is separated out, as appropriate strategies are different than for the surrounding area. Subcorridor characteristics include: rail station with 500 or more passenger boardings per weekday; two or more times the average regional density of households or employment. Recommended for TOD in the Implementing TOD Study.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Parking Operations
- County and Local Road Connectivity
- Transit-Oriented Development (TOD)
- Transportation Services for Specific Populations

Strategy Notes

While Revision of Existing Land Use/Transportation Guidelines is appropriate everywhere, it is specifically recommended in the Implementing TOD Study. While Marketing/Outreach for Transit and TDM and Improvements for Walking and Bicycling strategies are appropriate everywhere, they can build upon existing successes in high-transit use (especially rail), dense subcorridors like this one. The Quakertown Line, new passenger rail line from Landsdale to Shelly (LRP ID: N), is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

Implementing Transit-Oriented Development (DVRPC 04044, 2004)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
E	PA 611 north of turn from Cheltenham Avenue	This new subcorridor is approximately half of what was subcorridor 14B in the 2006 CMP, now focusing just on the PA 611 part. Subcorridor characteristics include: bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; two or more times the regional average of elderly people (over age 75); two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Planning and Design for Nonmotorized Transportation
- Expanded Parking/Improved Access to Stations (all modes)
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)

Strategy Notes

While Improvements for Pedestrians and Bicyclists and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are specifically recommended in the 611 and 263 Corridor Study. While Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use subcorridors like this one. Similarly, improvements for Pedestrians and Bicyclists are especially important in high densities of residences and employment, as can be found in this subcorridor. Noble and Willow Grove station areas are recommended for TOD in the 611 and 263 Corridor Study.

Corridor Studies Include (also see Bibliography)

Routes 611 and 263 Corridor Study - Phase 1 Report (DVRPC 08045B, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
F	PA 611 north of I-276	New subcorridor based on analysis of CMP criteria since the 2006 CMP. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; rail station with 500 or more passenger boardings per weekday; two or more times the regional average of female head of household with child; two or more times the regional average of Hispanic people; two or more times the regional average of limited English proficiency. Recommended for TOD in the Developing Around Transit Study (Warminster Station on SEPTA's R2 Line).

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes

Strategy Notes

While Improvements for Pedestrians and Bicyclists and Access Management (both engineering and policy strategies) are appropriate everywhere, they are specifically recommended in the

Developing Around Transit Study. Improvements for Pedestrians and Bicyclists, and Revision of Existing Land Use/Transportation Regulations are specifically recommended in the 611 and 263 Corridor Study. While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies are appropriate everywhere, they can build upon existing successes in high-transit use (especilly at rail stations) subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. Given the levels of current and future congestion, General Purpose Lanes and New Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity. Widening and reconstruction of County Line Road from PA 309 to PA 611 (LRP ID: 34) is listed as a Major Regional Project in the *Connections* plan.

Corridor Studies Include (also see Bibliography)

Developing Around Transit (DVRPC 06034, 2006), Routes 611 and 263 Corridor Study - Phase 1 Report (DVRPC 08045B, 2008)

Subcorridor ID	Subcorridor Name	Subcorridor Notes
G	PA 309 north of the Montgomery/Bucks county line to Quakertown	The character of the PA 309 corridor changes north of the Montgomery/Bucks line. PA 309 becomes a divided limited-access highway. As PA 309 enters Quakertown, it is a busy commercial area. This subcorridor also contains PA 313 (Broad Street) and PA 663 in Quakertown.

Very Appropriate Strategies

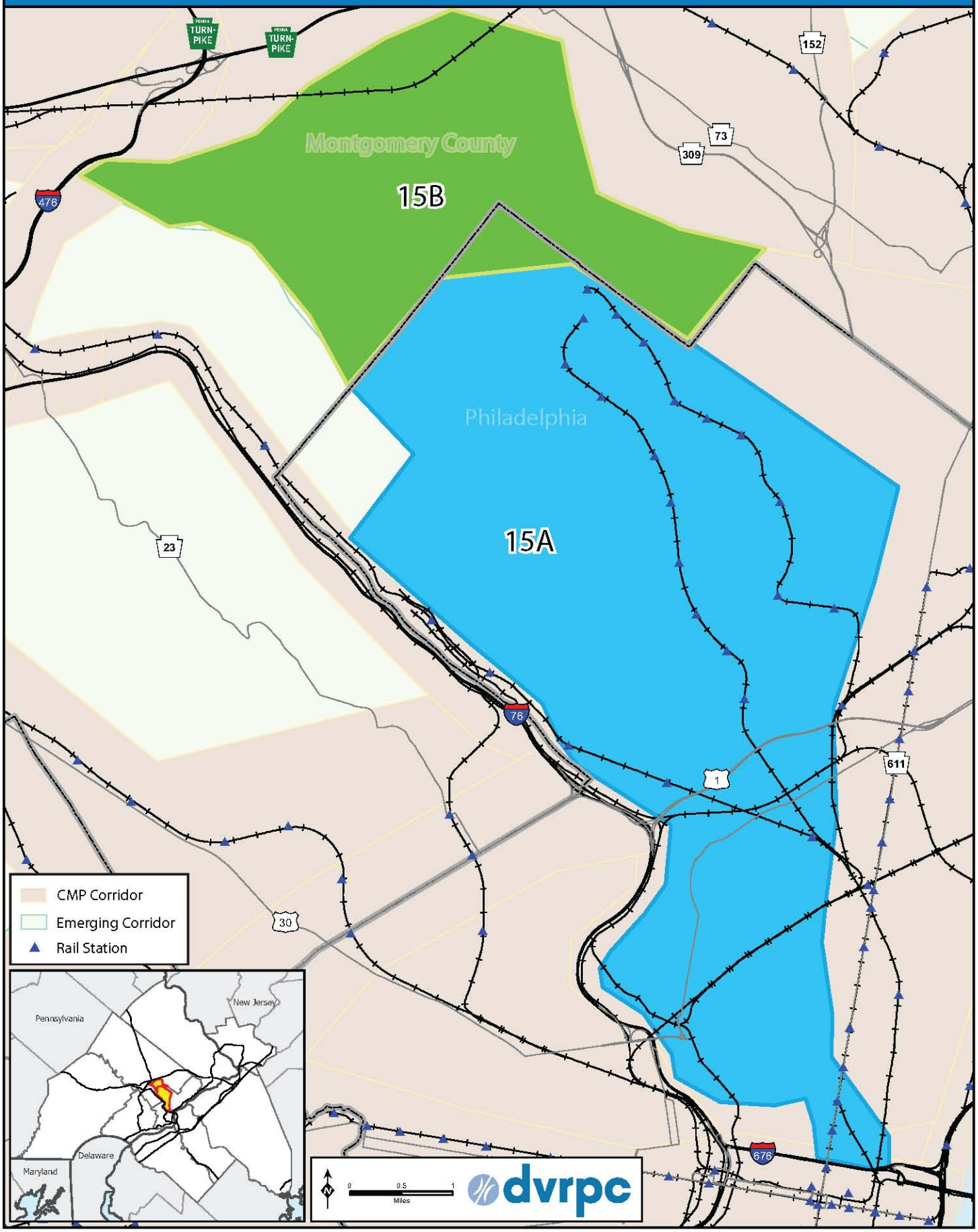
- Closed Loop Computerized Traffic Signals
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Extensions or Changes in Bus Routes

Strategy Notes

The Quakertown Line, new passenger rail line from Landsdale to Shelly (LRP ID: N), is listed as a Major Regional Project in the *Connections* plan.

Corridor 15 - Ridge-Lincoln-Cheltenham Area

Figure 34



Corridor ID	Corridor Name	Corridor Notes
15	Ridge-Lincoln-Cheltenham area	Pie-shaped area of generally similar land use from Ridge Avenue, across Lincoln Drive, Cheltenham Avenue, up toward I-276
Subcorridor ID	**Subcorridor Name**	**Subcorridor Notes**
A	Philadelphia residential communities around Ridge Road, Lincoln Drive, and Cheltenham area.	This subcorridor includes Mount Airy and Chestnut Hill communities. These are dense, older communities. Subcorridor characteristics include: high current VC, high future VC, and high growth in VC; bus ridership is 6,000 or more per day; rail station with 500 or more passenger boardings per weekday; transit usage approaching a lane of traffic; high concentrations of numerous transportation-disadvantaged populations; two or more times the average regional density of households or employment.

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Transit Signal Priority (TSP)
- Enhanced Transit Amenities and Safety
- Expanded Parking/Improved Access to Stations (all modes)
- Economic Development Oriented Transportation Policies
- More Frequent Transit or More Hours of Service

Strategy Notes

The Philadelphia Streets Department states: "Many of the parallel streets in this area do not have electronic controllers with fiber optic interconnect and are not compatible with ITS. Regional rail stations in this area need more parking to allow diversion onto rails," (Denny, 10/15/08). The Philadelphia City Planning Commission also addressed safety of vehicles left when people take trains; this emphasizes an element of Enhanced Transit Amenities and Safety (Schaaf, 10/20/08). While Growth Management and Smart Growth strategies, Access Management, Bottleneck Improvements of a Limited Scale, and Revision of Existing Land Use/Transportation Regulations are appropriate everywhere, they are especially important in corridors with high V/C ratios now and in the 2035 travel model. Similarly, while Marketing/Outreach for Transit and TDM strategies and Improvements for Walking and Bicycling are appropriate everywhere, they can build upon existing successes in high-transit use, dense subcorridors like this one. A variety of strategies, including Accessibility and Environmental Justice, should be used in order to meet the needs of the people in the many high concentrations of transportation-disadvantaged populations. Given the levels of current and future congestion, General Purpose Lanes and New Transit Capacity are appropriate strategies in this subcorridor if strategies further up the list cannot adequately address problems without also mixing in new capacity.

Corridor Studies Include (also see Bibliography)

Notes from Philadelphia Streets Department come from e-mail, Charles Denny, 10/17/08, and from Philadelphia City Planning Commission from e-mail, Debbie Scheef, 10/20/08.

Subcorridor ID	Subcorridor Name	Subcorridor Notes
B	Montgomery County side of Ridge Road, Lincoln Drive, and Cheltenham Avenue, including Springfield and	Less dense, but developing. Through traffic is reported to be an issue. This area includes Ridge Pike, Stenton Avenue, and Willow Grove Avenue. Subcorridor characteristics include: two or more times the regional average of elderly people (over age 75); 50 percent or more of the subcorridor is environmentally sensitive or protected land.

	Whitemarsh Townships	

Very Appropriate Strategies

- Closed Loop Computerized Traffic Signals
- Planning and Design for Nonmotorized Transportation
- Expanded Parking/Improved Access to Stations (all modes)
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)

Strategy Notes

MPMS 16577: Ridge Pike, Butler Pike to Philadelphia Line Reconstruction with added capacity was not reviewed as major SOV capacity due to project description issues, but is under review to be included by specific reference. Any future consideration of adding road capacity should be carefully examined as 50 percent or more of this subcorridor is in sensitive environmental areas.

Major Single-Occupancy Vehicles Capacity-Adding TIP Projects as of July 2009

See the TIP for more current and complete information at www.dvrpc.org/TIP

TIP MPMS	Project Name
16577	Ridge Pike, Butler Pike to Phila Line

Corridor Studies Include (also see Bibliography)

Schuylkill Crossings Traffic Study (DVRPC 07040, 2008)

CHAPTER 5

Next Steps

Completing the CMP Report is not a last step, but just one in an ongoing cycle. There are several steps currently underway, or just getting started. These include how the CMP is used to minimize congestion, how it is made available for use by the transportation community, how it is coordinated with the long-range plan and the TIP, and starting the next cycle of updating it. Specific next steps include:

- Using a short set of priority subcorridors – Using CMP analysis and work with involved counties, a short set of 2009 priority subcorridors was prepared and approved by the CMP Advisory Committee. The priority subcorridors provide a focused set of subcorridors for further attention. This focused set includes 12 subcorridors in New Jersey and 20 in Pennsylvania. In New Jersey, DVRPC has used these priority subcorridors as a consideration in selecting corridor studies, making NJDOT Study and Development recommendations, and providing input to select a corridor for in-depth performance measurement by NJDOT. In Pennsylvania, DVRPC considered them in selecting locations for access management case studies.
- Coordinating with the TIP – DVRPC continues to review submitted TIP projects for consistency with the CMP and to reach out to managers of projects that will likely add major SOV capacity. An element of this is preparing the annual Status of Supplemental Projects memorandum.
- How DVRPC continues to incorporate the CMP internally and in its work with others is outlined in DVRPC CMP Tasks, Table 9.
- What other agencies/governmental bodies are asked and/or required to do to implement the CMP is included as the brief Table 10: CMP Responsibilities of Agencies/Governmental Bodies.
- An overview of Potential Funding Sources is included in Table 11. It is intended as a starting point when thinking about implementing strategies and to provide a sense of the wide range of ways to go about funding projects. It includes agencies to contact for further information and online resources.

An essential part of any process is reflecting on how the previous go-around worked and making notes of ideas for the next time. This is summarized in a section on Conclusions and Potential Future Refinements.

Table 9: DVRPC CMP Tasks

Task	Lead Section of DVRPC
Maintain CMP fields in TIP database as projects are updated or added.	Congestion Management
Continue to use the CMP and long-range plan in the TIP project evaluation process and prioritize funding of projects that advance regional goals.	Capital Programming
Use priority subcorridors along with other management systems and work with counties and others to develop a set of priority additions to the TIP or for other funding sources. Draw upon analysis, major studies, and other sources.	Congestion Management and Capital Programming
Provide data to corridor and other studies, plans, and projects.	Congestion Management
Participate in and coordinate with current and future regional efforts. This includes efforts led by DVRPC, such as the regional performance measures. It also includes efforts run by other agencies, such as the PennDOT Planning and NEPA effort, NJDOT CMS update, and coordination with other MPOs.	Congestion Management with others
Monitor changes to federal CMP regulations. Provide input to rulemaking as useful. Modify CMP to reflect any new requirements.	Congestion Management
Coordinate with schedule of DVRPC Long-Range Plan so that the CMP is updated in time to be useful.	Congestion Management & Long-Range Planning
Continue incorporating major corridor studies and plans in the CMP documentation for reference, strategy refinement, to encourage coordinated efforts, and to help with implementation. A requirement for plans prepared by other agencies to be incorporated in the CMP is that they are consistent with the long-range plan.	Congestion Management
Update CMP; prepare amendments if necessary.	Congestion Management
Enhance quantification of strategies so the potential effectiveness of strategies can be better evaluated for corridors and for the region.	Congestion Management
Prepare a study of at least one congested subcorridor for New Jersey and Pennsylvania that starts with the CMP strategies and results in a specific prioritized list of actions, with implementation steps that will minimize congestion and advance regional goals.	Corridor Planning

Table 9: DVRPC CMP Tasks (continued)

Do outreach and education efforts including: ■ Web site postings of CMP materials ■ Prepare appropriate additional material as needed ■ Include specific outreach to DOT project managers, including through meetings at DOTs. On-site meetings will be held elsewhere, as requested ■ Work from the bottom up as well as the top down, including through a newsletter series focusing on one priority subcorridor per year in Pennsylvania and New Jersey oriented to and distributed to community groups and local officials in that area. Usually this will be coordinated with corridor or regional transportation studies.	Congestion Management, Corridor Planning, Transportation Studies
Track supplemental projects, working with relevant agencies resulting in an annual report coordinated with the TIP update.	Congestion Management & Capital Programming

Source: DVRPC, 2010

Table 10: CMP Responsibilities of Agencies/Governmental Bodies

Task	Leadership
It is important that managers of TIP projects keep descriptions current as projects develop. Failing to do so can result in a rush of required CMP or air quality conformity activity that can delay projects or even the whole TIP.	Project Managers at DOTs and Counties
Any entity proposing TIP projects or other projects that add major SOV capacity is to provide a CMP contact person at their agency. Large agencies should provide a main contact and a list of other people for e-mails.	RTC members, TIP committees, Capital Programming and Congestion Management staff
Project managers should contact DVRPC early in the process—at a point when the project is still flexible—for CMP consultation. Waiting until late in the process could lead to a requirement for additional analysis. DVRPC will work with managers of studies and projects that may add SOV capacity on considering a range of appropriate strategies. As a policy, final engineering for major SOV capacity-adding projects will not be funded in the TIP without a table of supplemental strategies that has been approved by DVRPC.	Project managers, such as those at DOTs
NJDOT has requested specific prioritized input regarding congestion management. Currently, this is done through the NJ Problem Identification and Prioritization (PIP) process. NJDOT has agreed to respond in writing to such submittals.	NJDOT Systems Planning and NJDOT Project Planning
Agencies and governmental bodies should participate in CMP updates to share their knowledge and to be informed so they can take advantage of the benefits of the CMP.	Members of DVRPC and others as appropriate

Source: DVRPC, 2010

Table 11: Potential Funding Sources

Funding Programs with Citations	Uses	Contacts for Information
Regionwide		
Community Development Block Grant (CDBG) Program, 42 USC Sections 5301-5320	Grants and technical assistance for designated municipalities for many types of community development.	HUD, DVRPC, County Planning Commissions/Divisions
Congestion Mitigation and Air Quality Improvement Program (CMAQ) 23 USC Section 149	These funds may be used on a variety of projects that reduce emissions from highway sources, including bicyclist/pedestrian facilities, traffic flow improvements, and demand management programs.	DVRPC, PennDOT, NJDOT, FHWA
Demonstration Funds (DEMO)	Special federal funding from congressional earmarks provided under ISTEA, TEA-21, and SAFETEA-LU.	DVRPC, PennDOT, NJDOT, FHWA
Elderly Individuals and Individuals with Disabilities Program 49 USC Section 5310 & New Freedom Program 49 USC Section 5317	Funds are used to provide transportation services to meet the special needs of elderly individuals and individuals with disabilities. The New Freedom Program provides funds for programs that go beyond Americans with Disabilities Act requirements.	DVRPC, NJ Transit, SEPTA, FTA
Enterprise Zone Program 42 USC Section 11501	Grants to financially disadvantaged communities for preparing and implementing business development strategies within zones.	HUD, DVRPC, County Planning Commissions/Divisions
Federal Bridge Program	These funds are for highway bridges on or off of the federal aid network. Work may include bicyclist/pedestrian treatments for the bridge.	DVRPC, PennDOT, NJDOT, FHWA
Highway Safety Improvement Program (HSIP)	Federal funding for projects or strategies included in the State strategic highway safety plan that corrects or improves a hazardous road location or features or addresses a highway safety problem.	DVRPC, PennDOT, NJDOT, FHWA
Job Access and Reverse Commute Grants (JARC) 49 USC Section 5316	These funds can be used for a range of services, usually transit related, to help people overcome barriers to holding jobs.	DVRPC, NJ Transit, SEPTA, FTA
Metropolitan Planning (often abbreviated as Planning or PL) 23 USC Section 1107, 49 USC Section 5303	Planning studies in the DVRPC Work Program.	DVRPC, PennDOT, NJDOT, FHWA, County Planning Commissions/Divisions

Table 11: Potential Funding Sources (continued)

Funding Programs with Citations	Uses	Contacts for Information
National Highway System (NHS) 23 USC Section 1408	Acceptable uses include construction of carpool, related transit, bicycle and pedestrian walkways, ridesharing, and other demand management strategies in NHS corridors.	DVRPC, PennDOT, NJDOT, FHWA
Rail Highway Grade Crossing	Provides federal funding for safety improvement projects to reduce the number and severity of crashes at public highway-rail grade crossings.	DVRPC, PennDOT, NJDOT, FHWA, FTA
Ride-sharing and other transportation management activities	Transportation Management Associations (TMAs) coordinate an array of programs. Part of the funding is from 49 USC Section 3049.	TMAs, USDOT
Safe Routes to School	This program works with school districts and pedestrian/bicyclist safety advocates to make physical improvements that promote safe walking and biking passages to schools.	DVRPC, NJDOT, PennDOT, FHWA
State and Community Highway Safety Grants 23 USC Section 1402	Pedestrian and bicyclist safety improvements are eligible.	DVRPC, PennDOT, NJDOT, FHWA
Surface Transportation Program (STP) 23 USC Section 1108	STP funds are among the most flexible. They may be used for capital or planning projects, including roads, transit projects, construction of bicyclist/pedestrian facilities, or nonconstruction projects such as maps.	DVRPC, PennDOT, NJDOT, FHWA
Transit Capital Assistance Program 49 USC Section 5309	This includes the New Starts program, funding for alternatives analysis, and earmarks.	DVRPC, NJ Transit, SEPTA, FTA
Transit Urbanized Area Formula Grants 49 USC Section 5307	These funds can be used for improving bicyclist/pedestrian access to transit, and capital expenses of providing transit service.	DVRPC, NJ Transit, SEPTA, FTA
Transportation and Community Development Initiative (TCDI)	This program funds planning activities to enhance redevelopment and improve the efficiency of the regional transportation system in older developed communities.	DVRPC
Transportation, Community, and System Preservation (TCSP) Program 23 USC Section 1117	Transit and highway projects that enhance transit-oriented development are eligible, along with other projects that improve the efficiency of the transportation system and reduce its impacts on	DVRPC, PennDOT, NJDOT, FTA, FHWA

Table 11: Potential Funding Sources (continued)

Funding Programs with Citations	Uses	Contacts for Information
	the environment.	
Transportation Enhancement (TE) Program 23 USC Section 1202, Paragraph 35	These funds are used for enhancements to the transportation system, including bicyclist and pedestrian facilities, preservation of rail corridors, and mitigation of transportation impacts on communities and the environment.	DVRPC, PennDOT, NJDOT, FHWA
Pennsylvania		
Efficient Growth for Growing Suburbs (EGGS)	Provides grants to growing suburbs, to improve growth management and to optimize the efficiency of transportation networks through better linking land use and transportation planning. The EGGS Program is only available for eligible communities in Bucks, Chester, Delaware and Montgomery counties.	DVRPC, PennDOT, County Planning Commissions/Divisions
Pennsylvania Infrastructure Bank (PIB)	Provides low-interest loans to leverage state and federal funds, accelerate priority transportation projects, spur economic development, and assist local governments with their transportation needs.	PennDOT
Transit Research & Demonstration Program	Provides financial assistance for innovative projects that enhance the attractiveness of public transportation.	PennDOT Bureau of Public Transportation
Transportation Projects/Land Use Initiative	Competitive funding program for studies that coordinate transportation and land use.	PennDOT Center for Program Development and Management
New Jersey		
Local Aid for Municipalities and Counties	Funding from the Transportation Trust Fund for local governments to do road, bridge, and other transportation projects, such as Transit-Oriented Design/Transit Village projects.	NJDOT
Smart Growth Grants	Grants for Design Guidelines for Creating Places, Transfer of Development Rights (TDR), Greyfield Redevelopment, and other programs.	NJ Department of Community Affairs
Smart Moves for Business Challenge Grant Program	Awards grants to NJ employers to develop innovative commuter assistance services.	NJ Department of Community Affairs

Source: DVRPC, 2010

Sources of Funding for Transportation Projects

All cited reports are available from www.dvrpc.org/asp/publicationsearch

- DVRPC TIPs and Planning Work Program: www.dvrpc.org/TIP and www.dvrpc.org/WorkProgram.
- DVRPC “Options for Filling the Region’s Transportation Funding Gap” (DVRPC Publication Number 07045)
- DVRPC “Municipal Resource Guide – 2009” (DVRPC Publication Number 09061)
- DVRPC “Small Starts Feasibility – Regional Projects with Federal Small Starts Funding Potential” (DVRPC Publication Number 07016)
- DVRPC “Financing Mixed-Use Development in the Delaware Valley Region” (DVRPC Publication Number 08037)
- DVRPC “Brownfield Resource Guide: Funding and Technical Assistance for Remediation and Reuse” (DVRPC Publication Number 07052)
- NJ Department of Community Affairs: www.state.nj.us/dca
- NJ Office of Local Aid and Economic Development: www.nj.gov/transportation/business/localaid
- PennDOT (see Bureau of Planning and Research): www.dot.state.pa.us/Internet/Bureaus/pdPlanRes.nsf/PlanningAndResearchHomePage?OpenFrameset
- Pennsylvania Infrastructure Bank: www.dot.state.pa.us/penndot/bureaus/PIB.nsf/HomePagePIB
- Federal Transit Authority: www.fta.dot.gov
- Federal Highway Administration: www.fhwa.dot.gov/discretionary and www.fhwa.dot.gov/safetealu/factsheets.htm
- US Housing and Urban Development: www.hud.gov/offices/cpd/communitydevelopment/programs

Conclusions and Ideas for the Future

The CMP is functioning as a coherent mid-range approach. It addresses congestion in a manner that helps integrate transportation and land use planning, a basic tenet of DVRPC's work. It helps coordinate the long-range plan and the short-range TIP. The CMP is a consideration in the selection of corridor studies and contributes to other efforts that result in specific projects to address congestion.

The CMP has strengthened existing relationships and built new ones with a wide range of partners. It has been especially valuable to work more closely with DOT project managers to help coordinate across modes and help supplemental projects happen. All nine county partners are involved in the CMP Advisory Committee. County staff members seem to have especially complicated roles, trying to bring together the regional long-range plan goals they helped develop, their own county's goals, immediate transportation congestion, political pressures, and financial constraint. It is both a challenge to keep everyone relatively comfortable with the CMP, and an accomplishment to have gotten this far.

Communicating at different levels is essential. This cycle has included CMP newsletters for municipal officials and interested members of the public, the CMP Overview, this report, and updating the Procedures Memorandum. At the level of being very accessible, Pennsylvania Borough News published a lead article written by DVRPC's Congestion Management staff. At the other end of the scale, the next edition of the FHWA's Guidebook to the Congestion Management Process will include a technical case study on how the Delaware Valley conducts its CMP as one of six best practices. Communication occurs in a range of ways, including using the CMP web pages and through face-to-face meetings, such as the annual outreach meetings at DOTs.

The first cycle of the CMP in 2006 was a period of figuring out how to do the basics. Two areas that received extra attention were the policy goals of the CMP, resulting in the Board-approved "DVRPC Perspectives" pages included in that report and this one, and the corridors. This second cycle of the CMP included extra examination and minor revision of the criteria, especially to make them better represent growing suburban areas. The analysis is used to update the corridors. It turned out, however, that the corridors ended up extremely similar (see "Comparison of 2006 and 2009 CMP Corridors," page 20). Essentially, this validates the corridors. The third cycle of the CMP is being structured to focus more time on selection of strategies for each congested subcorridor as some CMP Advisory Committee members have requested.

Some additional areas that the next cycle of the CMP will further address are:

- Evaluating the anticipated effects of sets of strategies – This has been investigated and pursued in various ways with FHWA's help over the last several years, but there seem to be a few positive solutions on the horizon.
- Using operations data to analyze reliability – There is national emphasis on incorporating reliability measures and using operations data, but there are some extra challenges in the Delaware Valley. PennDOT and NJDOT are working together with various offices within DVRPC on a way to start doing this analysis, at least on a sample of the road network.
- Being effective – The CMP has analytic elements required by federal regulations and useful for various purposes, but the intent is for it to help get people and goods where they are going in a manner that advances regional goals. Two areas that will help make the CMP more effective are doing more with the priority subcorridors, and enhancing the linkage of the CMP (and other management systems) to the start of development of TIP projects.

APPENDIX A

CMP Criteria

Table 12: Criteria and Analysis-Based Strategy Guidance

Goal	Objective	Criteria	Points Possible	**How to Advance from Objectives and Criteria to Strategies –** This is based on where there are extremely high levels of relevant criteria; the levels are set in part to result in manageable numbers of subcorridors for refinement
Roads - Increase mobility and accessibility	Maintain and optimize **major roads**	NHS plus NHS multimodal connectors; top 5% of non-NHS roads by AADT	1	Review existing consistent Major SOV capacity-adding TIP projects to maintain fit with Very Appropriate (VA) or Secondary (S) strategies or notes. Do the four boxes below to assess data-driven capacity needs first. Then review with corridor and CMS studies. If a project has been found consistent in past but is no longer fitting with strategies, explain continuity in Notes box. If any subcorridors with five or more existing Major SOV projects don't have capacity strategies, consider adding road and transit capacity.
	Reduce growth in **current congestion**	V/C>=.85 - peak hour (representing a generalized LOS E across functional classes)	1	V/C>=2 suggests review of operations/capacity of transit and road systems, such as Closed Loop Signal System, Jughandles, Channelization, Center Turn Lane, Transit Amenities, and Making Transfers Easier. Add note emphasizing Growth Management and Smart Growth, Access Management, dealing with Bottlenecks of a Limited Scale, and Keeping Existing Land Use/Transportation Regulations Up-To-Date.
	Mitigate **future congestion**	V/C>=.85 - peak period in 2035, the horizon year of *Connections* (2035 demographics on 2009 network)	0.5	V/C>=2 suggests review of planning-related strategies and then review as above with the caution that a simulation is less reliable than data. Add note described above.
	Shape and prepare for **growth**	Road segments where comparison of the 2009 and 2035 travel models suggests 60% or greater growth in V/C ratios	0.5	Growth>=200% in V/C ratios between 2009 and 2035 suggests, at this time, same note as above.
				If a subcorridor has current V/C >=2 and also very high future V/C or rate of growth, road and transit capacity strategies may be added such as New Bus Route, General Purpose Lanes, BRT, Demand Responsive Transit
Transit - Make transit more competitive with driving alone	Support use of **transit where it already exists**	Transit with three or more runs in peak hour gets 1 point, as does all passenger train service. Buses serving suburban centers qualify at two runs per hour. The rest of transit gets .5 of a point. This includes fixed-route buses and shuttle services open to the public. Presence of passenger and freight rail lines is represented on roads within .5 mile of them.	1	Almost all subcorridors contain transit with three or more runs, so limits were used of 6,000 riders per weekday across transit routes or train stations with 500 boardings per day [clarification from 10/1/08 mtg]. In subcorridors with either high use condition, suggest Enhanced Transit Amenities and Safety for VA. For S: consider Making Transfers Easier, Express Bus Routes, Transit First Policy, Expanded Parking/Access to Stations (all modes), Shuttle to Station, More Frequent or More Hours of Service. Add note for Marketing/Outreach for Transit and TDM.
	In **key transit corridors**, reduce congestion experienced by the many people on buses and trolleys	Roads that carry close to the equivalent number of transit passengers as the capacity of a lane of traffic. Roads that carry enough transit ridership to qualify for FTA Very Small Starts programs get .5 point.	1	If point = 1, suggest Transit Signal Preemption and/or Advanced Transit System Management for VA. In addition to above box, consider New Service strategies such as New Bus Route, Transportation Services for Special Events, BRT, Local Fixed-Rail Service (new extensions or added Stations), and TOD.
	Invest where **transit is needed** and reward development that makes transit more feasible	Traffic Analysis Zones (TAZs) identified by the Transit Score as highly or medium-highly appropriate for transit in 2035 regardless of current transit, supplemented with train stations where many people gather to use transit or carpool (500 or more boardings per day in current data).	0.5	Review which EJ Degrees of Disadvantage are two or more times the regional average and include strategies to help with the transportation needs of these disadvantaged populations. A set relevant when there are five or more such populations seems to be: Multilingual and Nontraditional Communication, Transportation Services for Specific Populations, More Frequent Transit or More Hours of Service, Environmental Justice Outreach for Decision-Making, and Local Delivery Service. Add note about using a variety of EJ-based strategies and Improving Accessibility and EJ.
				Where adding capacity may be appropriate AND Key Transit=1, consider Passenger Intermodal Center and Local Fixed-Rail Service (new, extensions, or added stations) if appropriate. Review these subcorridors thoroughly.
Reliability - Increase system reliability for drivers and transit users;	Improve safety in **high crash rate areas** (which also reduces nonrecurring	Crash rate two or more times the rate for that functional class on that side of the Delaware River in the Delaware Valley. Because crashes on heavily used roads cause so	1	This is not operational yet, as there are high crash locations in almost every subcorridor, even at three or 3.5 times the average. At four times the average, there is an extreme drop to almost none. When there is a way to do so, add Safety Education and Enforcement. Add Note emphasizing Safety Improvements and

Table 12: Criteria and Analysis-Based Strategy Guidance (continued)

increase safety* *DVRPC remains interested in additional and/or better measures of reliability, and works closely with operations planning sources	delay)	much of the nonrecurring delay, this criteria has been modified to only crashes on the NHS and top 5% of non-NHS roads by AADT		Programs, and Incident Management.
	Study and smartly address where traffic counts are increasing the most (**minimize new bottlenecks** of recurring delay)*	High percent change at traffic count locations with three or more counts. This provides data over several years and allows for checking multiple data points for whether high growth may be an aberration. A refinement is these will only get the .5 point where there is limited capacity left in the road (V/C ratios of .5 and above).	0.5	This is not operational yet, as there are locations in most subcorridors. When there is a way to do this step, add note emphasizing Access Management Projects and Programs, and Bottleneck Removal.
Land use - Support the land use goals of the region	**Protect rural conservation lands** and the green space network	Within DVRPC LRP current or future development areas (covers a lot of area)	0.5	Question road capacity in subcorridors with 50% or more large areas of protected open space, conservation focus areas, or LRP greenspaces. Include Environmentally Friendly Transportation Strategies. Consider Traffic Calming, Complete Streets, and Context-Sensitive Design. Add note emphasizing Growth Management and Smart Growth.
	To manage transportation demand, **foster land use patterns that reduce the length of trips** and increase the number of reasonable modes	Areas where the density of residences or employment is two or more times the average for the region (geography-based areas with high correlation to Centers from LRP and major intermodal sites)	0.5	Needed eight times regional average and TAZs of 80 or more acres to get to a manageable number of subcorridors (vicinity of 20). Consider Planning and Design for Nonmotorized Transportation, Expanded Parking/Improved Access to Stations, More Frequent Transit or More Hours of Service, TOD, and Context-Sensitive Design. Add note emphasizing Improvements for Pedestrians and Bicyclists, and Marketing Transit and TDM.

Source: DVRPC, 2010. Potential total points remains same as in 2006 CMP: 8

Detailed CMP Analysis Criteria

1. **Major roads and intermodal facilities:**

Roads with very high AADT and major intermodal centers provide key service even if not congested

- National Highway System (NHS) roads
- Major intermodal passenger and NHS freight transfer sites
- Top 5% of non-NHS system roads by Average Annual Daily Traffic (AADT) for the Pennsylvania and New Jersey portions of the Delaware Valley.

2. **Current peak-hour congestion:**

This is the hour with the highest volume for each count rather than a specific time period.

- V/C>=.85 based on generalized Level of Service (LOS) E for various functional classes of roads. Precise capacities are not available, so capacities used in the travel model and modified through tests discussed with various DVRPC staff members were used.

3. **Future peak-period congestion:**

The travel model provides combined peak period congestion. The peak period includes 7 a.m. to 9 a.m. and 3 p.m. to 6 p.m. The simulation used 2035 demographics on the 2009 network due to uncertainty at the time about what projects would be funded.

- Simulated V/C>=.85 for 2035, the horizon year of *Connections*.

4. **High growth in congestion:**

Rapidly growing areas must be able to identify, shape, and prepare for growth

- Road segments where comparison of the 2009 and 2035 travel models suggests 60% or greater growth in V/C ratios.

5. **Existing transit service:**

Presence of passenger or freight rail lines is represented on roads within .5 mile of them

- All passenger rail receives 1 point
- Transit with three or more runs per hour during peak hours gets 1 point
- Transit serving suburban locations with two or more runs per hour during peak hours also gets 1 point
- All other transit including fixed-route buses and shuttle services open to the public get .5 point.

6. **Key transit corridors:**
- ➔ Roads that carry close to the equivalent number of transit passengers as the capacity of a lane of traffic get 1 point
- ➔ Roads that carry enough transit ridership to qualify for FTA Very Small Starts Programs get .5 point.

7. **Future transit:**
- ➔ Traffic Analysis Zones (TAZs) identified by the DVRPC Transit Score as highly or medium highly appropriate for transit in 2035 regardless of current transit, supplemented with train stations where many people gather to use transit or carpool (500 or more boardings per day in current data) get .5 point.

8. **Frequent crash-related congestion:**

Recurring nonrecurrent congestion. Because crashes on heavily used roads cause so much of the nonrecurring delay, this criteria was modified to include only the high crash locations on NHS and top 5% of non-NHS roads by AADT.
- ➔ Segments with a crash rate of two or more times the rate for that functional class of road on that side of the Delaware River in the Delaware Valley gets 1 point

9. **Emerging bottlenecks:**

High percent change at traffic count locations with three or more counts in a ten-year period
- ➔ Only those locations where there is high percentage change (3% or greater annual increase) and limited capacity left in the road (V/C ratios of .5 and above) get the .5 point.

10. **Land use:**

The CMP helps implement the goals of the long-range plan including for managing growth and protecting resources, because of the strong connection between development patterns and transportation demand.
- ➔ Land within the DVRPC Long-Range Plan current or future development areas gets .5 point. This includes greenspace network areas, but extra care should be exercised to select multimodal, context-sensitive strategies in such areas.
- ➔ Areas where the density of residences or employment is two or more times the average for the region get .5 point.

APPENDIX B

Secondary Strategies by Subcorridor

For each of the subcorridors on the following pages, the Strategies Appropriate Everywhere (see page 41) may be considered in addition to the Very Appropriate and Secondary strategies listed for the subcorridor.

NJ 1A Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transit Signal Priority (TSP)
- Transportation Security/Terrorism Prevention
- Making Transfers Easier for Passengers
- Making Intermodal Transfers Easier for Freight
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Enhanced Transit Amenities and Safety
- County and Local Road Connectivity
- Tolls/Congestion Pricing
- Local Delivery Service
- Environmentally Friendly Transportation Policies
- Interregional Transportation Coordination
- Transit-Oriented Development (TOD)
- More Frequent Transit or More Hours of Service
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

NJ 1B Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transportation Security/Terrorism Prevention
- Making Intermodal Transfers Easier for Freight
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- Multilingual and Nontraditional Communication
- County and Local Road Connectivity
- Tolls/Congestion Pricing
- Environmentally Friendly Transportation Policies
- Interregional Transportation Coordination
- Express Transit Routes
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

NJ 1C Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transportation Security/Terrorism Prevention
- Making Intermodal Transfers Easier for Freight
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- Multilingual and Nontraditional Communication
- County and Local Road Connectivity
- Tolls/Congestion Pricing
- Environmentally Friendly Transportation Policies
- Interregional Transportation Coordination
- Park-and-Ride Lots
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

NJ 2A Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transportation Security/Terrorism Prevention
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- County and Local Road Connectivity

- Tolls/Congestion Pricing
- Environmentally Friendly Transportation Policies
- Interregional Transportation Coordination
- Express Transit Routes
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

NJ 2B Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Street Circulation Patterns
- Automated Toll Collection Improvements
- Transit Signal Priority (TSP)
- Transportation Security/Terrorism Prevention
- Making Transfers Easier for Passengers
- Making Intermodal Transfers Easier for Freight
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Enhanced Transit Amenities and Safety
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Tolls/Congestion Pricing
- Local Delivery Service
- Interregional Transportation Coordination
- Transit-Oriented Development (TOD)
- More Frequent Transit or More Hours of Service
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

NJ 2C Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transportation Security/Terrorism Prevention
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- Enhanced Transit Amenities and Safety
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Tolls/Congestion Pricing
- Interregional Transportation Coordination
- Transit-Oriented Development (TOD)
- Express Transit Routes
- More Frequent Transit or More Hours of Service
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

NJ 3A Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transit Signal Priority (TSP)
- Transportation Security/Terrorism Prevention
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- Enhanced Transit Amenities and Safety
- Channelization
- Jughandles
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Tolls/Congestion Pricing
- Complete Streets
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Interregional Transportation Coordination
- Express Transit Routes
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

NJ 3B Secondary Strategies

- Road Diets
- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Jughandles
- Expanded Parking/Improved Access to Stations (all modes)
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Park-and-Ride Lots
- Transit First Policy
- Transit-Oriented Development (TOD)
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity
- New Bus Route
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments

NJ 3C Secondary Strategies

- Transit Signal Priority (TSP)
- Incident Management
- Making Transfers Easier for Passengers
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Passenger Intermodal Center or Garage for Transit Riders
- Complete Streets
- Economic Development Oriented Transportation Policies
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- General Purpose Lanes
- Frontage or Service Roads
- New Bus Route
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments

NJ 3D Secondary Strategies

- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Enhanced Transit Amenities and Safety
- Channelization
- County and Local Road Connectivity
- Context-Sensitive Design
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Frontage or Service Roads
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes

NJ 4A Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Road Diets
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- General Purpose Lanes
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 4B Secondary Strategies

- Transit Signal Priority (TSP)

- Making Transfers Easier for Passengers
- Enhanced Transit Amenities and Safety
- Channelization
- Jughandles
- County and Local Road Connectivity
- Passenger Intermodal Center or Garage for Transit Riders
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- General Purpose Lanes
- Frontage or Service Roads
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Arterial or Collector Road

NJ 4C Secondary Strategies

- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- County and Local Road Connectivity
- Context-Sensitive Design
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Frontage or Service Roads
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations

NJ 4D Secondary Strategies

- Traffic Calming
- Road Diets
- Transit Signal Priority (TSP)
- Enhanced Transit Amenities and Safety
- Center Turn Lanes
- Jughandles
- Roundabouts
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes
- More Frequent Transit or More Hours of Service
- Demand Response Transit Services
- Transportation Services for Specific Populations

NJ 4E Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Roundabouts
- County and Local Road Connectivity
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes
- Shuttle Service to Stations
- Transportation Services for Special Events
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 4F Secondary Strategies

- Traffic Calming
- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Enhanced Transit Amenities and Safety
- Center Turn Lanes
- Jughandles
- Roundabouts
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes

- More Frequent Transit or More Hours of Service
- Demand Response Transit Services
- Transportation Services for Specific Populations

NJ 5A Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Traffic Calming
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- General Purpose Lanes
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 5B Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Traffic Calming
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- General Purpose Lanes
- Major Reconstruction with Minor Capacity
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 5C Secondary Strategies

- Traffic Calming
- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Enhanced Transit Amenities and Safety
- Channelization
- Jughandles
- County and Local Road Connectivity
- Passenger Intermodal Center or Garage for Transit Riders
- Context-Sensitive Design
- Transit First Policy
- Express Transit Routes
- Extensions or Changes in Bus Routes
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Frontage or Service Roads
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations

NJ 6A Secondary Strategies

- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Jughandles
- Expanded Parking/Improved Access to Stations (all modes)
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Park-and-Ride Lots
- Transit First Policy
- Transit-Oriented Development (TOD)
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity
- New Bus Route

- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments

NJ 6B Secondary Strategies

- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Jughandles
- Expanded Parking/Improved Access to Stations (all modes)
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Park-and-Ride Lots
- Transit First Policy
- Transit-Oriented Development (TOD)
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity
- New Bus Route
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments

NJ 6C Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Shuttle Service to Stations
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 6D Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Channelization
- Center Turn Lanes
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 6E Secondary Strategies

- Transit Signal Priority (TSP)
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity
- Local Delivery Service
- Economic Development Oriented Transportation Policies
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 6F Secondary Strategies

- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity

- Economic Development Oriented Transportation Policies
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 6G Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Traveler Information Services
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Passenger Intermodal Center or Garage for Transit Riders
- Freight Intermodal Center/Yard
- Local Delivery Service
- Economic Development Oriented Transportation Policies
- Context-Sensitive Design
- More Frequent Transit or More Hours of Service
- General Purpose Lanes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Freight Rail (new or expanded)
- Interchange with Related Road Segments
- Limited Access Highway

NJ 6H Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Channelization
- Center Turn Lanes
- Passenger Intermodal Center or Garage for Transit Riders
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Express Transit Routes
- General Purpose Lanes
- New Bus Route
- Shuttle Service to Stations
- Transportation Services for Special Events
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 6I Secondary Strategies

- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity
- Economic Development Oriented Transportation Policies
- Context-Sensitive Design
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 6J Secondary Strategies

- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity

- Economic Development Oriented Transportation Policies
- Context-Sensitive Design
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- General Purpose Lanes
- Frontage or Service Roads
- New Bus Route
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 6K Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 6L Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Street Circulation Patterns
- Traveler Information Services
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- County and Local Road Connectivity
- Passenger Intermodal Center or Garage for Transit Riders
- Freight Intermodal Center/Yard
- Local Delivery Service
- Economic Development Oriented Transportation Policies
- Context-Sensitive Design
- Express Transit Routes
- General Purpose Lanes
- Frontage or Service Roads
- New Bus Route
- Transportation Services for Specific Populations
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments
- Limited Access Highway

NJ 7A Secondary Strategies

- Traffic Calming
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Roundabouts
- Economic Development Oriented Transportation Policies
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Flexible Routing/Route Deviation Service

NJ 7B Secondary Strategies

- Street Circulation Patterns
- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity
- New Bus Route

NJ 7C Secondary Strategies

- Street Circulation Patterns
- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers

- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity
- New Bus Route

NJ 7D Secondary Strategies

- Traffic Calming
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Roundabouts
- Economic Development Oriented Transportation Policies
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Flexible Routing/Route Deviation Service

NJ 7E Secondary Strategies

- Traffic Calming
- Transit Signal Priority (TSP)
- Enhanced Transit Amenities and Safety
- Center Turn Lanes
- Jughandles
- Roundabouts
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes
- More Frequent Transit or More Hours of Service
- Demand Response Transit Services
- Transportation Services for Specific Populations
- Regional or Intercity Rail Service

NJ 8A Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Road Diets
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Passenger Intermodal Center or Garage for Transit Riders
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Express Transit Routes
- General Purpose Lanes
- New Bus Route
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 8B Secondary Strategies

- Traffic Calming
- Transit Signal Priority (TSP)
- Enhanced Transit Amenities and Safety
- Center Turn Lanes
- Jughandles
- Roundabouts
- Expanded Parking/Improved Access to Stations (all modes)
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes
- More Frequent Transit or More Hours of Service
- Demand Response Transit Services
- Transportation Services for Specific Populations

NJ 8C Secondary Strategies

- Street Circulation Patterns
- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation

- Enhanced Transit Amenities and Safety
- Channelization
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit First Policy
- Express Transit Routes
- Extensions or Changes in Bus Routes
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- General Purpose Lanes
- Major Reconstruction with Minor Capacity
- New Bus Route
- Demand Response Transit Services

NJ 8D Secondary Strategies

- Traffic Calming
- Transit Signal Priority (TSP)
- Enhanced Transit Amenities and Safety
- Center Turn Lanes
- Jughandles
- Roundabouts
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes
- More Frequent Transit or More Hours of Service
- Demand Response Transit Services
- Transportation Services for Specific Populations

NJ 9A Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 9B Secondary Strategies

- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Enhanced Transit Amenities and Safety
- Channelization
- Jughandles
- County and Local Road Connectivity
- Context-Sensitive Design
- Transit First Policy
- Extensions or Changes in Bus Routes
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Frontage or Service Roads
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations

NJ 10A Secondary Strategies

- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity
- Economic Development Oriented Transportation Policies
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 10B Secondary Strategies

- Traffic Calming
- Transit Signal Priority (TSP)

- Making Transfers Easier for Passengers
- Enhanced Transit Amenities and Safety
- Channelization
- County and Local Road Connectivity
- Context-Sensitive Design
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Frontage or Service Roads
- Major Reconstruction with Minor Capacity
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 10C Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 11A Secondary Strategies

- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Jughandles
- Expanded Parking/Improved Access to Stations (all modes)
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Park-and-Ride Lots
- Transit First Policy
- Transit-Oriented Development (TOD)
- Flexible Routing/Route Deviation Service
- General Purpose Lanes
- Major Reconstruction with Minor Capacity
- New Bus Route
- Demand Response Transit Services
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments

NJ 12A Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Passenger Intermodal Center or Garage for Transit Riders
- Context-Sensitive Design
- Transit First Policy
- Extensions or Changes in Bus Routes
- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 12B Secondary Strategies

- Transit Signal Priority (TSP)
- Parking Operations
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity
- Economic Development Oriented Transportation Policies
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes

- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 13A Secondary Strategies

- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity
- Economic Development Oriented Transportation Policies
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 13B Secondary Strategies

- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Frontage or Service Roads
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations

NJ 13C Secondary Strategies

- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity
- Economic Development Oriented Transportation Policies
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 13D Secondary Strategies

- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity
- Economic Development Oriented Transportation Policies
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 14A Secondary Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Incident Management
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Jughandles
- Growth Management & Smart Growth
- Context-Sensitive Design

- Transit First Policy
- Transit-Oriented Development (TOD)
- General Purpose Lanes
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 14B Secondary Strategies

- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Traffic Calming
- Transit Signal Priority (TSP)
- Incident Management
- Enhanced Transit Amenities and Safety
- Center Turn Lanes
- Jughandles
- Roundabouts
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes
- More Frequent Transit or More Hours of Service
- Demand Response Transit Services
- Transportation Services for Specific Populations

NJ 15A Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Jughandles
- Trip Reduction Ordinances (TRO)
- Economic Development Oriented Transportation Policies
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Shuttle Service to Stations
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

NJ 15B Secondary Strategies

- Traffic Calming
- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Center Turn Lanes
- Jughandles
- Roundabouts
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes
- More Frequent Transit or More Hours of Service
- Demand Response Transit Services
- Transportation Services for Specific Populations

NJ 15C Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 1A Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transportation Security/Terrorism Prevention
- Making Transfers Easier for Passengers
- Making Intermodal Transfers Easier for Freight
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- County and Local Road Connectivity
- Tolls/Congestion Pricing
- Interregional Transportation Coordination
- Express Transit Routes
- More Frequent Transit or More Hours of Service
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Major Reconstruction with Minor Capacity
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

PA 2A Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transit Signal Priority (TSP)
- Transportation Security/Terrorism Prevention
- Making Transfers Easier for Passengers
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- County and Local Road Connectivity
- Tolls/Congestion Pricing
- Interregional Transportation Coordination
- Express Transit Routes
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- New Bus Route
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

PA 2B Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transportation Security/Terrorism Prevention
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- County and Local Road Connectivity
- Tolls/Congestion Pricing
- Interregional Transportation Coordination
- Extensions or Changes in Bus Routes
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- New Bus Route
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

PA 2C Secondary Strategies

- Ramp Metering
- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transportation Security/Terrorism Prevention
- Making Transfers Easier for Passengers
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- County and Local Road Connectivity
- Tolls/Congestion Pricing
- Interregional Transportation Coordination
- Express Transit Routes
- More Frequent Transit or More Hours of Service
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- New Bus Route
- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

PA 2D Secondary Strategies

- Ramp Metering
- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transit Signal Priority (TSP)
- Transportation Security/Terrorism Prevention
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- Environmental Justice Outreach for Decision-Making

- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Roundabouts
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Passenger Intermodal Center or Garage for Transit Riders
- Tolls/Congestion Pricing
- Local Delivery Service
- Pricing and Funding Policies
- Economic Development Oriented Transportation Policies
- Context-Sensitive Design
- Interregional Transportation Coordination
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- More Frequent Transit or More Hours of Service
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Transportation Services for Special Events
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Ferry Services
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

PA 3A Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transportation Security/Terrorism Prevention
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- County and Local Road Connectivity
- Tolls/Congestion Pricing
- Local Delivery Service
- Context-Sensitive Design
- Interregional Transportation Coordination
- Transit-Oriented Development (TOD)
- More Frequent Transit or More Hours of Service
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Transportation Services for Special Events
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

PA 3B Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transportation Security/Terrorism Prevention
- Making Transfers Easier for Passengers
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- County and Local Road Connectivity
- Tolls/Congestion Pricing
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Interregional Transportation Coordination
- Express Transit Routes
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

PA 3C Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transportation Security/Terrorism Prevention
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Tolls/Congestion Pricing
- Interregional Transportation Coordination
- Park-and-Ride Lots
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads

- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

PA 4A Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transportation Security/Terrorism Prevention
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Tolls/Congestion Pricing
- Interregional Transportation Coordination
- Express Transit Routes
- More Frequent Transit or More Hours of Service
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

PA 4B Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transit Signal Priority (TSP)
- Transportation Security/Terrorism Prevention
- Making Transfers Easier for Passengers
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- County and Local Road Connectivity
- Tolls/Congestion Pricing
- Local Delivery Service
- Context-Sensitive Design
- Interregional Transportation Coordination
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes
- More Frequent Transit or More Hours of Service
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

PA 4C Secondary Strategies

- Ramp Metering
- Closed Loop Computerized Traffic Signals
- Intelligent Transportation Systems (ITS)/Integrated Corridor Management for Freeways
- Transit Signal Priority (TSP)
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- County and Local Road Connectivity
- Passenger Intermodal Center or Garage for Transit Riders
- Freight Intermodal Center/Yard
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Pricing and Funding Policies
- Economic Development Oriented Transportation Policies
- Interregional Transportation Coordination
- Express Transit Routes
- More Frequent Transit or More Hours of Service
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Transportation Services for Special Events
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

- Ferry Services
- Freight Rail (new or expanded)
- Interchange with Related Road Segments
- Limited Access Highway

PA 4D Secondary Strategies

- Ramp Metering
- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transit Signal Priority (TSP)
- Transportation Security/Terrorism Prevention
- Making Transfers Easier for Passengers
- Making Intermodal Transfers Easier for Freight
- Commercial Vehicle Operations (CVO)
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Passenger Intermodal Center or Garage for Transit Riders
- Freight Intermodal Center/Yard
- Tolls/Congestion Pricing
- Local Delivery Service
- Economic Development Oriented Transportation Policies
- Context-Sensitive Design
- Interregional Transportation Coordination
- Transit-Oriented Development (TOD)
- Express Transit Routes
- More Frequent Transit or More Hours of Service
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Transportation Services for Special Events
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Ferry Services
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

PA 5A Secondary Strategies

- Traffic Calming
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Roundabouts
- Trip Reduction Ordinances (TRO)
- Railroad Right-of-Way Preservation
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity
- New Bus Route
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Arterial or Collector Road

PA 5B Secondary Strategies

- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Jughandles
- Roundabouts
- Expanded Parking/Improved Access to Stations (all modes)
- Trip Reduction Ordinances (TRO)
- Railroad Right-of-Way Preservation
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit First Policy
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity
- New Bus Route
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments

PA 5C Secondary Strategies

- Traffic Calming
- Street Circulation Patterns

- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Parking Operations
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- At-Grade Rail Crossing Safety Improvements
- Channelization
- County and Local Road Connectivity
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Express Transit Routes
- Extensions or Changes in Bus Routes
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Frontage or Service Roads
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 5D Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Traffic Calming
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Roundabouts
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 5E Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Traffic Calming
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Safety Education and Enforcement (nonauto)
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- At-Grade Rail Crossing Safety Improvements
- Channelization
- Center Turn Lanes
- Roundabouts
- Expanded Parking/Improved Access to Stations (all modes)
- Passenger Intermodal Center or Garage for Transit Riders
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Context-Sensitive Design
- Transit First Policy
- Express Transit Routes
- Extensions or Changes in Bus Routes
- General Purpose Lanes
- Shuttle Service to Stations
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 5F Secondary Strategies

- Making Transfers Easier for Passengers
- Environmental Justice Outreach for Decision-Making
- Planning and Design for Nonmotorized Transportation
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Economic Development Oriented Transportation Policies
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- General Purpose Lanes
- Transportation Services for Specific Populations

- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 5G Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes
- General Purpose Lanes
- Major Reconstruction with Minor Capacity
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 5H Secondary Strategies

- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Enhanced Transit Amenities and Safety
- Channelization
- County and Local Road Connectivity
- Expanded Parking/Improved Access to Stations (all modes)
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Extensions or Changes in Bus Routes
- Flexible Routing/Route Deviation Service
- Frontage or Service Roads
- Major Reconstruction with Minor Capacity
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations

PA 5I Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Traffic Calming
- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity
- Economic Development Oriented Transportation Policies
- Context-Sensitive Design
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- Frontage or Service Roads
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 6A Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Jughandles
- County and Local Road Connectivity
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- Frontage or Service Roads
- Shuttle Service to Stations

- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 6B Secondary Strategies

- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity
- Economic Development Oriented Transportation Policies
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 6C Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 7A Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 7B Secondary Strategies

- Traffic Calming
- Street Circulation Patterns
- Making Transfers Easier for Passengers
- Parking Operations
- Safety Education and Enforcement (nonauto)
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Local Delivery Service
- Context-Sensitive Design
- Park-and-Ride Lots
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Frontage or Service Roads
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes

PA 7C Secondary Strategies

- Traffic Calming

- Street Circulation Patterns
- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Expanded Parking/Improved Access to Stations (all modes)
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity
- New Bus Route
- Shuttle Service to Stations

PA 8A Secondary Strategies

- Transit Signal Priority (TSP)
- Maintenance Management
- Safety Education and Enforcement (nonauto)
- Enhanced Transit Amenities and Safety
- At-Grade Rail Crossing Safety Improvements
- Center Turn Lanes
- Jughandles
- Roundabouts
- Expanded Parking/Improved Access to Stations (all modes)
- Trip Reduction Ordinances (TRO)
- Railroad Right-of-Way Preservation
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Interregional Transportation Coordination
- Park-and-Ride Lots
- Transit First Policy
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Flexible Routing/Route Deviation Service
- General Purpose Lanes
- Major Reconstruction with Minor Capacity
- New Bus Route
- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments
- Arterial or Collector Road

PA 8B Secondary Strategies

- Street Circulation Patterns
- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Maintenance Management
- Parking Operations
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Enhanced Transit Amenities and Safety
- Channelization
- County and Local Road Connectivity
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Frontage or Service Roads
- Major Reconstruction with Minor Capacity
- New Bus Route
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 8C Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Automated Toll Collection Improvements
- Transit Signal Priority (TSP)
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Channelization
- County and Local Road Connectivity
- Tolls/Congestion Pricing
- Interregional Transportation Coordination
- Express Transit Routes
- More Frequent Transit or More Hours of Service
- HOV Treatments
- General Purpose Lanes
- Frontage or Service Roads
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Freight Rail (new or expanded)
- Interchange with Related Road Segments

PA 8D Secondary Strategies

- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity
- Economic Development Oriented Transportation Policies
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 8E Secondary Strategies

- Street Circulation Patterns
- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Local Delivery Service
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- General Purpose Lanes
- Major Reconstruction with Minor Capacity
- New Bus Route
- Shuttle Service to Stations
- Interchange with Related Road Segments

PA 8F Secondary Strategies

- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Jughandles
- Expanded Parking/Improved Access to Stations (all modes)
- Trip Reduction Ordinances (TRO)
- Economic Development Oriented Transportation Policies
- Environmentally Friendly Transportation Policies
- Park-and-Ride Lots
- Transit First Policy
- Transit-Oriented Development (TOD)
- Flexible Routing/Route Deviation Service
- General Purpose Lanes
- Major Reconstruction with Minor Capacity
- New Bus Route
- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments

PA 8G Secondary Strategies

- Transit Signal Priority (TSP)
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Jughandles
- Expanded Parking/Improved Access to Stations (all modes)
- Local Delivery Service
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Park-and-Ride Lots
- Transit First Policy
- Transit-Oriented Development (TOD)
- Flexible Routing/Route Deviation Service
- General Purpose Lanes
- Major Reconstruction with Minor Capacity
- New Bus Route
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments
- Arterial or Collector Road

PA 8H Secondary Strategies

- Transit Signal Priority (TSP)

- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Jughandles
- Roundabouts
- Expanded Parking/Improved Access to Stations (all modes)
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Park-and-Ride Lots
- Transit First Policy
- Transit-Oriented Development (TOD)
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity
- New Bus Route
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments

PA 8I Secondary Strategies

- Transit Signal Priority (TSP)
- Enhanced Transit Amenities and Safety
- Center Turn Lanes
- Jughandles
- Expanded Parking/Improved Access to Stations (all modes)
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Park-and-Ride Lots
- Transit First Policy
- Transit-Oriented Development (TOD)
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity
- New Bus Route
- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments

PA 8J Secondary Strategies

- Traffic Calming
- Street Circulation Patterns
- Transit Signal Priority (TSP)
- Incident Management
- Making Transfers Easier for Passengers
- Maintenance Management
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Local Delivery Service
- Economic Development Oriented Transportation Policies
- Context-Sensitive Design
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- General Purpose Lanes
- Frontage or Service Roads
- Major Reconstruction with Minor Capacity
- New Bus Route
- Shuttle Service to Stations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments
- Arterial or Collector Road

PA 9A Secondary Strategies

- Automated Toll Collection Improvements
- Transit Signal Priority (TSP)
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Center Turn Lanes
- Jughandles
- Expanded Parking/Improved Access to Stations (all modes)
- Tolls/Congestion Pricing
- Local Delivery Service
- Trip Reduction Ordinances (TRO)
- Complete Streets
- Economic Development Oriented Transportation Policies
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)

- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity
- New Bus Route
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Interchange with Related Road Segments
- Arterial or Collector Road

PA 9B Secondary Strategies

- Automated Toll Collection Improvements
- Transit Signal Priority (TSP)
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Jughandles
- County and Local Road Connectivity
- Tolls/Congestion Pricing
- Local Delivery Service
- Complete Streets
- Economic Development Oriented Transportation Policies
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit First Policy
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- General Purpose Lanes
- Frontage or Service Roads
- Major Reconstruction with Minor Capacity
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Interchange with Related Road Segments

PA 10A Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Traffic Calming
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Parking Operations
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Safety Education and Enforcement (nonauto)
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Channelization
- Center Turn Lanes
- Passenger Intermodal Center or Garage for Transit Riders
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- General Purpose Lanes
- Shuttle Service to Stations
- Transportation Services for Special Events
- Transportation Services for Specific Populations
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 10B Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Traffic Calming
- Street Circulation Patterns
- Making Transfers Easier for Passengers
- Maintenance Management
- Safety Education and Enforcement (nonauto)
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Expanded Parking/Improved Access to Stations (all modes)
- Passenger Intermodal Center or Garage for Transit Riders
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Local Delivery Service
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit First Policy
- Express Transit Routes
- Extensions or Changes in Bus Routes

- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity
- New Bus Route
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes

PA 10C Secondary Strategies

- Traffic Calming
- Street Circulation Patterns
- Making Transfers Easier for Passengers
- Parking Operations
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Jughandles
- Roundabouts
- Expanded Parking/Improved Access to Stations (all modes)
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Local Delivery Service
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit First Policy
- Transit-Oriented Development (TOD)
- Express Transit Routes
- Extensions or Changes in Bus Routes
- Frontage or Service Roads
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 11A Secondary Strategies

- Closed Loop Computerized Traffic Signals
- Traffic Calming
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Center Turn Lanes
- Roundabouts
- Economic Development Oriented Transportation Policies
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Flexible Routing/Route Deviation Service

PA 12A Secondary Strategies

- Traffic Calming
- Making Transfers Easier for Passengers
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Jughandles
- Roundabouts
- Passenger Intermodal Center or Garage for Transit Riders
- Local Delivery Service
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes
- More Frequent Transit or More Hours of Service
- General Purpose Lanes
- New Bus Route
- Demand Response Transit Services
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 13A Secondary Strategies

- Traffic Calming
- Transit Signal Priority (TSP)
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Center Turn Lanes
- Jughandles
- Roundabouts
- Local Delivery Service
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies

- Context-Sensitive Design
- Park-and-Ride Lots
- Transit-Oriented Development (TOD)
- Extensions or Changes in Bus Routes
- More Frequent Transit or More Hours of Service
- Demand Response Transit Services
- Transportation Services for Specific Populations

PA 14A Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Parking Operations
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Shuttle Service to Stations
- Transportation Services for Special Events
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 14B Secondary Strategies

- Making Transfers Easier for Passengers
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Context-Sensitive Design
- Transit First Policy
- Express Transit Routes
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- General Purpose Lanes
- Frontage or Service Roads
- New Bus Route
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 14C Secondary Strategies

- Making Transfers Easier for Passengers
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Jughandles
- Expanded Parking/Improved Access to Stations (all modes)
- Trip Reduction Ordinances (TRO)
- Economic Development Oriented Transportation Policies
- Environmentally Friendly Transportation Policies
- Park-and-Ride Lots
- Transit First Policy
- Flexible Routing/Route Deviation Service
- General Purpose Lanes
- Frontage or Service Roads
- Major Reconstruction with Minor Capacity
- New Bus Route
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments

PA 14D Secondary Strategies

- Street Circulation Patterns
- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Maintenance Management
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- Expanded Parking/Improved Access to Stations (all modes)
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity

- New Bus Route

PA 14E Secondary Strategies

- Traffic Calming
- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Context-Sensitive Design
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Frontage or Service Roads
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations

PA 14F Secondary Strategies

- Traffic Calming
- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Jughandles
- Expanded Parking/Improved Access to Stations (all modes)
- Parking Supply-and-Demand Managment (such as by transportation allowances)
- Local Delivery Service
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Park-and-Ride Lots
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- General Purpose Lanes
- Major Reconstruction with Minor Capacity
- New Bus Route
- Transportation Services for Specific Populations
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments

PA 14G Secondary Strategies

- Planning and Design for Nonmotorized Transportation
- Enhanced Transit Amenities and Safety
- Jughandles
- Expanded Parking/Improved Access to Stations (all modes)
- Trip Reduction Ordinances (TRO)
- Environmentally Friendly Transportation Policies
- Park-and-Ride Lots
- Transit First Policy
- Transit-Oriented Development (TOD)
- Flexible Routing/Route Deviation Service
- Major Reconstruction with Minor Capacity
- New Bus Route
- Bus Rapid Transit (BRT) or Exclusive Right-of-Way Bus Lanes
- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)
- Interchange with Related Road Segments

PA 15A Secondary Strategies

- Vehicle Use Limitations and Restrictions
- Street Circulation Patterns
- Traveler Information Services
- Making Transfers Easier for Passengers
- Maintenance Management
- Parking Operations
- Environmental Justice Outreach for Decision-Making
- Multilingual and Nontraditional Communication
- Planning and Design for Nonmotorized Transportation
- Advanced Transit System Management
- Channelization
- Center Turn Lanes
- Local Delivery Service
- Context-Sensitive Design
- Transit First Policy
- Transit-Oriented Development (TOD)
- General Purpose Lanes
- Shuttle Service to Stations
- Transportation Services for Special Events
- Transportation Services for Specific Populations

- Regional or Intercity Rail Service
- Local Fixed Rail Service (New, Extensions, or Added Stations)

PA 15B Secondary Strategies

- Transit Signal Priority (TSP)
- Making Transfers Easier for Passengers
- Enhanced Transit Amenities and Safety
- Channelization
- Center Turn Lanes
- County and Local Road Connectivity
- Environmentally Friendly Transportation Policies
- Context-Sensitive Design
- Transit First Policy
- More Frequent Transit or More Hours of Service
- Flexible Routing/Route Deviation Service
- Frontage or Service Roads
- Demand Response Transit Services
- Shuttle Service to Stations
- Transportation Services for Specific Populations

APPENDIX C

CMP Newsletter

The newsletter on the following pages was prepared as a general overview and introduction to the CMP. It was distributed with outreach material for the long-range plan update, which went out to over 2,500 organizations and individuals interested in planning in the Delaware Valley, and remains in use. The newsletter template is also used for two focused newsletters per year, one on a corridor in New Jersey and one in Pennsylvania. Most commonly, these are prepared where a corridor or area study will be done, and are intended to educate participants at a kick-off meeting.

Quick Introductions:

Congestion Management Process (CMP)

A CMP is a systematic process for managing congestion. It provides information on transportation system performance and a range of strategies to minimize congestion and enhance the mobility of people and goods. The CMP advances the goals of DVRPC's Long-Range Plan and strengthens the connection between the Plan, the Transportation Improvement Program (TIP), and other Commission efforts.

Long-Range Plan

The *Destination 2030 Long-Range Plan* is currently being updated. The Long-Range Plan helps DVRPC carry out its defined mission to plan for the orderly growth and development of the region. Metropolitan Planning Organizations like DVRPC are key actors in regions across the country, responsible for coordinated, comprehensive, and continuing transportation planning. For more information, visit http://www.dvrpc.org/connections

Transportation Improvement Program (TIP)

The TIP is the regionally agreed-upon list of priority projects, as required by federal law. The TIP must list all projects that intend to use federal funds, along with non federally funded projects that are regionally significant. Projects address highway, transit, bicyclist, pedestrian, and freight-related needs.

DVRPC Corridor Study

A corridor study is conducted each year in both New Jersey and Pennsylvania by DVRPC. In addition, a CMP newsletter is produced to highlight and introduce each corridor study.
For the latest newsletters, please visit:
http://www.dvrpc.org/transportation/longrange/cmp/next.htm

Publication No.: NL09007
Abstract: The CMP newsletter series focuses on congested subcorridors in the Delaware Valley. This edition introduces the basic concepts of the CMP.

For more information about any of these programs, please visit www.dvrpc.org

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

CONGESTION MANAGEMENT PROCESS

LET US KNOW what YOU think!

To help make updates of this newsletter even more useful, send comments to Zoe Neaderland, Manager, Congestion Management Process at 215.238.2839 or zneaderland@dvrpc.org

DVRPC

The Delaware Valley Regional Planning Commission is dedicated to uniting the region's elected officials, planning professionals and the public with a common vision of making a great region even greater. Shaping the way we live, work and play, DVRPC builds consensus on improving transportation, promoting smart growth, protecting the environment and enhancing the economy. We serve a diverse region of nine counties: Bucks, Chester, Delaware, Montgomery and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester and Mercer in New Jersey. DVRPC is the federally designated Metropolitan Planning Organization for the Greater Philadelphia Region - leading the way to a better future.

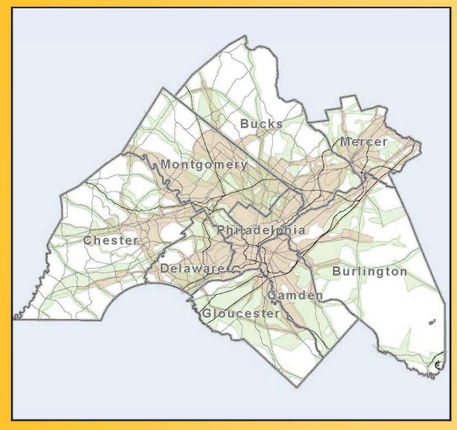
DVRPC fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. DVRPC documents and publications can be translated into alternate formats or languages, if requested. ***For more information, visit the DVRPC website at www.dvrpc.org or call Jane Meconi at 215.238.2371.***

December 2008

Introduction to the Congestion Management Process (CMP)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

Can We Reduce Congestion in the Delaware Valley?



The Answer is Yes!

Together, we can make your community and the region a better place to live and work! The Congestion Management Process (CMP) helps people and goods get to where they need to go. It uses all modes of transportation in coordination with land use planning to move the region toward a better future.

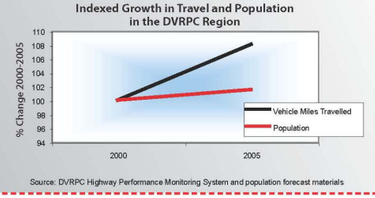
How does the CMP help?

- It provides the data and analysis that we all need.
- It results in agreed-upon corridors to focus work and investment toward achieving regional goals.
- It helps select projects to fund in the Transportation Improvement Program (TIP).
- It makes investments as effective as possible by requiring that any project that may use federal funds to add Single Occupancy Vehicle (SOV) capacity must be consistent with the CMP.

You can make a difference! Several ways are listed below.

What Can I Do as a Citizen?

- Combine trips when you can, take transit or use park-and-ride facilities, carpool, or join a local ridesharing program.
- Take advantage of local shopping and recreation opportunities, especially when accessible by transit, walking, or biking.
- Participate in local transportation and land use planning.
- Educate and express yourself when it comes to planning at all levels – public comment periods and DVRPC's Regional Citizens Committee meetings are great ways to get involved. *To request a DVRPC Citizen's Guide and learn how to get involved, call Jane Meconi, Public Outreach Manager, at 215.238.2871.*



Source: DVRPC Highway Performance Monitoring System and population forecast materials

What Can I Do as a Municipal Official or Employee?

- Be aware of the long- and short-term opportunities to shape your locale.
- Review your community's comprehensive plan, zoning, and regulations to ensure that they reinforce each other and work toward common goals – DVRPC can help.
- Coordinate with surrounding municipalities and county studies.
- Communicate with your county representatives on the DVRPC Board *(see "About Us" at www.dvrpc.org to find the name of your representative).*
- Think creatively - there may be more ways to fund transportation and land use improvements than you realize. The DVRPC Municipal Resource Guide *(Publication 06043)* and DVRPC's Options for Filling the Region's Transportation Funding Gap *(Publication 07045)* are great sources of information. *To request a copy of either publication, call 215.592.1800.*

Potential

Strategies for Congested Corridors

Range of Potential Strategies

The CMP uses strategies in the order of priority listed below. Adding new roads is a last resort and must be accompanied by supplemental strategies from the other categories.

Operational Improvements, Transportation System Management (TSM), and Intelligent Transportation Systems (ITS) – Projects that maintain, optimize, and modernize the existing transportation system (roads, transit, and other) including maintaining and improving safety.

Transportation Demand Management (TDM) – Programs and projects that encourage the use of alternative modes of transportation other than driving alone and that otherwise focus on the demand side of trip making.

Policy Approaches – Appropriate policy changes, new policies, regulations, and follow-through on existing agreements to foster land use patterns and other changes that reduce the need for and length of trips.

Smart Transportation – These specific strategies provide better conditions for walking, bicycling, and other alternative modes of transportation to automobile travel, and they can assist in developing more livable communities.

Public Transit Improvements – Programs and projects to increase the capacity of existing services and facilities, such as adding more service on existing routes.

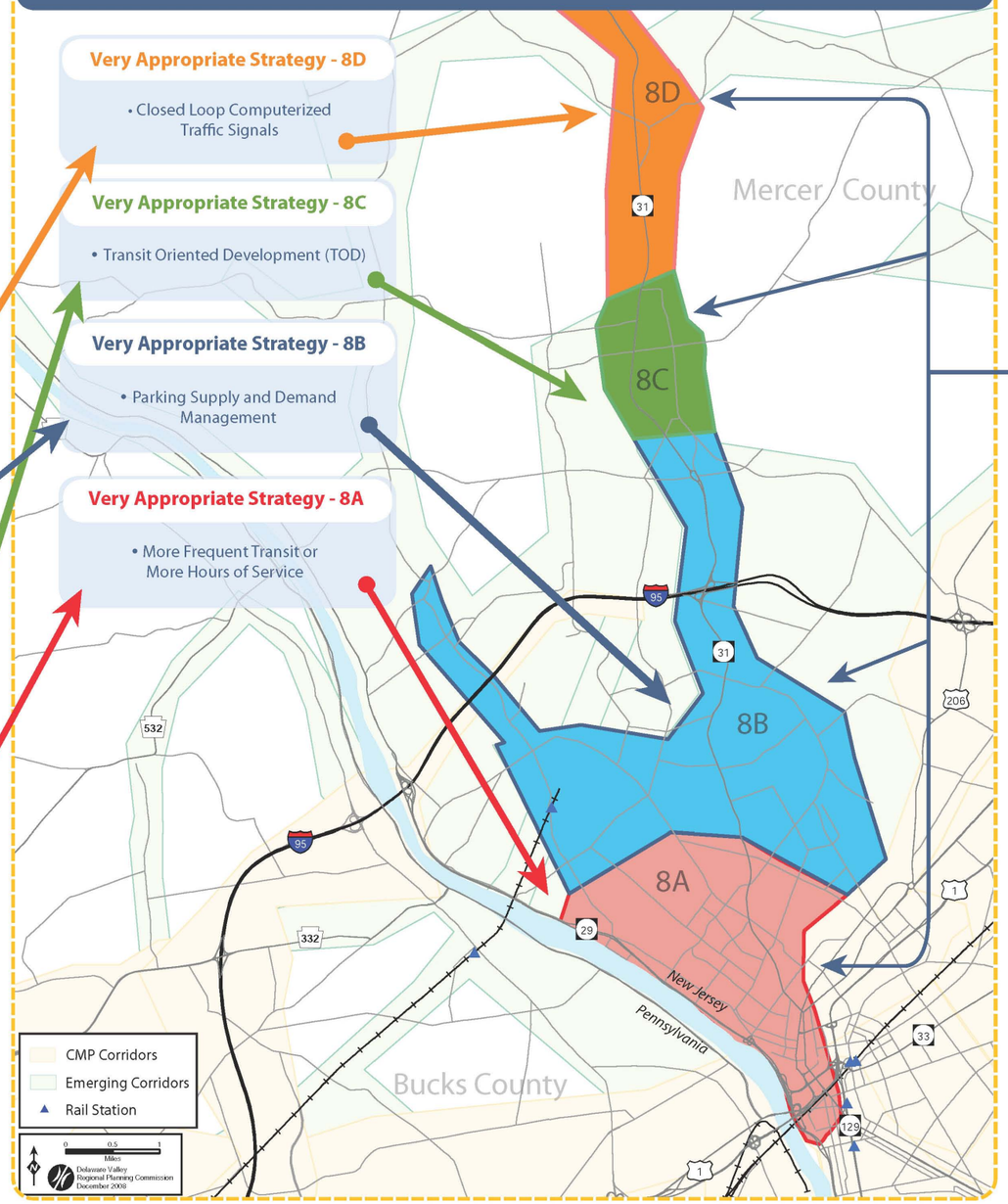
Road Improvements – Projects that increase the capacity of existing roads, such as adding lanes.

New Public Transit – Strategies to add new transit capacity, such as new bus or rail lines.

Goods Movement – Policies, strategies, and projects to maintain and optimize the safe and efficient movement of freight.

New Roads – Capital projects that add major new capacity, such as new roads.

Sample CMP Corridor: NJ Corridor 8 - Route 31



Inexpensive Strategies that Help Almost Everywhere:

(Definitions of these strategies and dozens more are in the CMP)

- Safety Improvements and Programs
- Signage
- Improvements for Pedestrians and Bicyclists as appropriate
- Basic Upgrading of Traffic Signals
- Signal Prioritization for Emergency Vehicles where needed
- Intersection Improvements of a Limited Scale
- Bottleneck Improvements of a Limited Scale, Vehicle or Rail
- Accessibility and Environmental Justice
- Access Management (both engineering and policy strategies)
- Marketing/Outreach for Transit and TDM Services where applicable (including carpool, vanpool, and ridesharing programs, alternate work hours, telecommuting, guaranteed ride home, TransitChek, carsharing, and one-less-car programs)
- Revision of Existing Land Use/Transportation Regulations
- Growth Management and Smart Growth

What Does the Map Show?

- Congested corridors are broken into smaller sections, where a similar range of strategies is appropriate. Each subcorridor has a set of strategies tailored for it. One example from the set of Very Appropriate strategies for each subcorridor is shown on the map.
- Emerging/regionally significant corridors are areas likely to become congested if strategies like the ones above are not used. They also protect the key road and rail links that connect our region to the nation.
- For much more about the CMP, visit our website at **http://www.dvrpc.org/transportation/longrange/cmp.htm**. There, you will find detailed information about each subcorridor, including interactive maps that allow viewers to zoom to specific locations, choose viewable layers, and see strategies and TIP projects for the subcorridor.

APPENDIX D

CMP Bibliography

The following list of corridor studies includes all those that were used to help refine the sets of CMP Strategies for each subcorridor.

Table 13: Referenced Corridor Studies

State	Route	CMP Subcorridor(s)	Report Title	Publication/Author Information	Summary
Both	Various	Various	Increasing Intermodal Access to Transit: Phase III	DVRPC Publication 06011, August 2006	Phase III of this continuing project assessed non-motorized (pedestrian and bicycle) accessibility to six rail stations in the region. Three Burlington County RiverLINE stations (Beverly/Edgewater Park, Burlington Town Center, and Riverton) and three SEPTA rail stations (Cynwyd, Eastwick, and Oreland) were analyzed using PLOS and BLOS model software. Field measurements and observations provided data for this analysis, which was supplemented by a qualitative examination of access conditions in the immediate vicinity of each station. A summary of recommended enhancements was prepared for each station, noting strategies that would address specific problem areas. Generally, Phase III analysis found that PLOS scores tended to be somewhat higher for the New Jersey station areas studied than the Pennsylvania stations, and that PLOS scores were higher overall than BLOS scores. In many cases, comparatively minor investments in station sites and their immediate vicinity (such as bicycle racks, painted crosswalks, and signage) have the ability to markedly improve and encourage nonmotorized station access.
Both	Various	Various	DVRPC Long-Range Vision for Transit	DVRPC Publication 08068, October 2008	This Long-Range Vision for Transit highlights the potential benefits of an improved transit network to the DVRPC region in the coming decades. The region's current transit assets already represent a significant competitive advantage amid rising energy costs and concerns about climate change. That said, the region is not yet one in which transit can be taken for granted by passengers throughout the region as a fact of life, where riding is easy, seamless, and accessible. The purpose of this Transit Vision report is to highlight the long-term benefits of a modernized, integrated transit network that is coordinated with land development.
Both	Various	Various	The Automobile at Rest - Toward Better Parking Policies in the Delaware Valley	DVRPC Publication 08081A, September 2008	*The Automobile at Rest: Toward Better Parking Policies in the Delaware Valley* presents an overview of parking policies and requirements in the Delaware Valley region, along with strategies for managing and designing parking better. Each of the region's 353 municipalities set their own parking requirements within their municipal zoning ordinance, usually based on national standards from the Institute of Transportation Engineers and/or the Urban Land Institute. These requirements are detailed in a separately published Appendix titled Municipal Parking Standards Inventory. These standards often assume that all trips will be made by car and that destination will be isolated and single use in character. The standards fail to recognize the different types of parking provisions that may be desirable or cost appropriate for different contexts, such as downtowns, suburban shopping districts or rural areas. Municipal parking ordinances therefore often result in too much parking or requirements that are not flexible for mixed-use settings. These requirements have a strong influence on the built and natural environment and how the community grows or redevelops. The report also examines ways to reduce parking demand and improve parking supply where appropriate or necessary through parking management strategies such as pricing, car-sharing, and shared parking, among others. Different types of parking are examined, from surface parking to underground parking to bicycle parking, along with innovative design treatments. The report also examines the environmental impacts of parking with a focus on the critical issue of stormwater. Lastly, the relationship between parking and transit is considered, particularly park-and-rides and transit-oriented development. This report provides planners, local leadership, and citizens with information about best practices for designing, managing, and regulating parking.
Both	Various	NJ 6D, 6E, 7A; PA 4A, 4B, 4C, 4D, 5G, 10A	Seamless Regional Transit Access: an Evaluation of New Interstate Links and Connections	DVRPC Publication 08069, September 2008	This report explores the feasibility of several specific transit connections proposed by DVRPC's Regional Citizens Committee (RCC) to improve interstate service and enhance system connectivity. Six potential services were examined: extending New Jersey Transit buses that currently terminate in Center City to 30th Street Station; connecting the PATCO terminus at 15th/16th and Locust streets to 30th Street Station; providing service from Frankford Transportation Center in Philadelphia to Palmyra Station on the RiverLINE via an extension of SEPTA Route 8; extending New Jersey Transit Route 413 from its current terminus at Burlington Station (RiverLINE) to Bristol Station on SEPTA's R7 Trenton line; providing the Trenton - New Hope corridor with service; and establishing a shuttle between Philadelphia and the Pureland Industrial Complex in Logan Township, Gloucester County (via Chester). Each project was analyzed by estimating the costs and benefits for the proposed service.
Both	Various	NJ 12A; PA 8M, 14A, 14D	Implementing Transit-Oriented Development: Four TOD Plans for Girard, Lansdale, Thorndale,	DVRPC Publication 04044, December 2004	This document, Implementing Transit-Oriented Development: Four TOD Plans, grew out of the multiyear study, Linking Transit, Communities, and Development: Regional Inventory of Transit-Oriented Development Sites. Volume One: Executive Summary (August 2003) details the study process, inventory selection criteria, TOD benefits and barriers, and recommendations for funding and implementation. Volume Two: Station Area Profiles (December 2003) presents profiles of 45 transit stations in the nine-county region. Implementing Transit-Oriented Development: Four TOD Plans offers in-depth station area plans for four of the inventoried stations.

Table 13: Referenced Corridor Studies (continued)

State	Route	CMP Subcorridor(s)	Report Title	Publication/Author Information	Summary
			and Woodbury		These include the Girard station along SEPTA's Broad Street Subway, Broad-Ridge Spur, and Route 15 light rail in Philadelphia; Lansdale station, along SEPTA's Regional Rail R5 to Doylestown, in Lansdale, Montgomery County, Pennsylvania; Thorndale station, along SEPTA's Regional Rail R5 to Thorndale/Paoli, in Caln Township, Chester County, Pennsylvania; and Woodbury, home to six NJ Transit bus routes, in Woodbury, Gloucester County, New Jersey. These four case studies represent multiple transit modes (subway, light rail, heavy regional rail, and busy), the states of New Jersey and Pennsylvania, and a variety of community types, including urban, suburban, small town, and exurban.
Both	CR 638 (NJ); SR 3017 (PA)	NJ 14B; PA 7A	Taming Traffic: Context-Sensitive Solutions in the DVRPC Region	DVRPC Publication 07054, October 2007	This report focuses on the application of context-sensitive solutions (CSS) principles and best practices, including traffic calming, focusing on two case study sites within the DVRPC region -- Clarksville Road, West Windsor Township, Mercer County, New Jersey and Parkside Avenue, Philadelphia, Pennsylvania. CSS is a means to link land use and transportation planning and implementation. Pennsylvania and New Jersey case studies are included, with recommendations and before and after photo simulations. The study includes an explanation of traffic calming and related terms and a discussion of policy at the state level and in the Delaware Valley region.
NJ	CR 561; CR 603	NJ 5C; NJ 6D	2005 Regional Congestion and Accident Mitigation Program	DVRPC Publication 05035, September 2005	This report represents a planning effort to support the local counties and municipalities in both New Jersey and Pennsylvania in addressing the safety and mobility issues along their arterial road network. This network can typically experience congested conditions due to high traffic volumes and or limited capacity. Accidents occurring along these congested facilities not only result in injuries but also add to the congestion. The goal is to identify potential cost effective improvement strategies, which will reduce congestion and accidents and improve the safety and mobility of goods and people. Working with the local county planning commissions, DVRPC selected six locations to study. For each of these locations, field views to review transportation problem locations were undertaken, and consequently technical analysis to quantify the identified transportation problem areas and document practical solutions. Level of service analyses and accident analyses were conducted for each selected area.
NJ	CR 571	15A, 15B, 15C	County Route 571 Corridor Study	DVRPC Publication 07037, July 2007	This study was based on priority areas identified by the Central Jersey communities within the corridor. Detailed field views and technical analyses were conducted to identify and quantify the transportation constraints and document practical solutions. A detailed write-up of the existing conditions and recommended improvement scenarios is presented. Improvements such as roadway realignment, signal timing, improved directional and regulatory signage, better pedestrian facilities and amenities, and transit improvements have been identified and documented.
NJ	CR 622, CR 636	8B	Ewing Township, Mercer County Congestion & Crash Site Analysis Program	DVRPC Publication 08053, June 2008	This document represents the findings and recommendations for the Mercer County Congestion and Crash Site Analysis project. This project represents an effort to improve the mobility and safety of the roadways in the DVRPC region. The goal of the program is to identify cost effective improvement strategies which will reduce congestion and crashes and improve the mobility and safety of all road users. Working with the Mercer County Planning and Engineering Departments, the intersection of North Olden Avenue (CR 622) and Parkside Avenue (CR 636) was chosen for analysis. This intersection was identified as having congestion and safety issues. An in-depth crash and level of service analysis was performed to quantify and gain an understanding of the issues. With input from local stakeholders improvement strategies were identified to address the issues. These strategies vary from signal timing adjustments, intersection geometry and circulation changes to a road diet application. As appropriate, proposed improvement strategies were tested for level of effectiveness.
NJ	CR 706	3B	Winslow Township, Camden County Congestion & Crash Site Analysis Program	DVRPC Publication 08041, May 2008	This document is the result an effort to improve the mobility and safety of the roadways in the DVRPC region. The goal of the program is to identify cost effective improvements strategies which will reduce congestion and crashes and improve mobility and safety of all road users. Working with the Camden County Engineering Department, the section of Erial Road between the intersections of Duke and Duchess Drives and Wiltons Landing Road was chosen for analysis. This section of Camden County has seen rapid residential growth over the last decade. The area was identified as experiencing a large number of crashes. An in-depth crash and level of service analysis was performed to quantify and gain an understanding of the issues. With input from local stakeholders improvement strategies were identified to address the issues. These vary from employing select traffic calming measures to a road diet application. As appropriate, proposed improvement strategies were tested for level of effectiveness.
NJ	Hartford Rd	10B	Hartford Road Traffic Assessment Study	DVRPC Publication 04013, April 2004	This is a traffic assessment study for the section of Hartford Road in Moorestown and Mount Laurel Townships in Burlington County NJ. As development increases, there has been a corresponding increase in traffic volumes. This has led to congestion at several major intersections and arterial sections along Hartford Road. Three intersections, Hartford Road at Elbo Lane, Union Mill Road, and Borton Landing Road, were analyzed to determine their operational conditions within the traffic stream, by using Level of Service analysis. Arterial segments between Elbo Lane and Garwood Road were also studied and levels of service analyzed. A signal warrant analysis was conducted at the intersection of Hartford Road and Salem Road to determine whether peak volumes warrant the construction of a traffic signal. An improvement plan was developed which identifies necessary improvements to the highway infrastructure that would improve mobility and reduce congestion.
NJ	I-295; US 130	2A, 2B, 6J	I-295/US 130 Riverfront	DVRPC Publication 02037, October 2002	This is a transportation corridor study, which provides an analysis of the I-295/US 130 corridor in Gloucester County. Undertaken at the request of Gloucester County Planning Department, the study identifies and addresses the transportation needs facing the riverfront

Table 13: Referenced Corridor Studies (continued)

State	Route	CMP Subcorridor(s)	Report Title	Publication/Author Information	Summary
			Transportation Corridor Study		communities. At the request of the county priority is given to identifying the transit needs and potential service enhancements in the corridor. The study also takes a look at localized problem areas in the highway network and provides recommendations that address these needs.
NJ	I-676; US 30	2C, 5A, 6H, 6L	Central Gateway Traffic Circulation Improvement Project, City of Camden	McCormick and Taylor for NJDOT, February 2007	Not available.
NJ	NJ 168	3D	NJ 168 Corridor Study	DVRPC Publication 04042, September 2004	This document presents a transportation improvement plan for the NJ 168 Corridor in Camden and Gloucester Counties. The corridor planning effort undertakes the traditional examinations of an existing transportation/circulation system, in this case NJ 168 and surrounding facilities, identifying safety and functional or operational problems and recommending potential solutions, as appropriate. This plan takes a comprehensive look at the transportation needs of the corridor and identifies which project locations are in need of immediate attention, and identifies who is responsible for advancing these projects to the next step.
NJ	NJ 168, NJ 42, US 322	3D, 6H, 6I, 6J, 6L	Black Horse Pike: Making It work	DVRPC Publication 06039, October 2006	The Black Horse Pike Study was undertaken as part of the Delaware Valley Regional Planning Commission's Strategies for Older Suburbs initiative which examines the potential for City/Suburban collaboration between the Cities of Philadelphia and Camden and their surrounding neighborhoods. The Black Horse Pike Collaboration Study is one of three areas where the Delaware Valley Regional Planning Commission directed this initiative, with financial assistance from the William Penn Foundation. DVRPC would like to acknowledge and thank the many public officials and private citizens who contributed to this plan. Edward Fox, Camden County Planning Director, also assisted throughout the community outreach process. The consultant team of Brown & Keener Bressi, led by Mark Keener and Neil Desai, drafted the plan and the consultant team of Urban Partners, led by Jim Hartling, completed the market study. A task force of local municipal and business officials contributed to the development and vision of the plan. They include: Borough of Audubon Borough of Audubon Park Borough of Collingswood Borough of Mt. Ephraim (Tony Chambers) Borough of Oaklyn Borough of Woodlynne (Regina Burke, Mayor Jeraldo Fuentes) Camden County (Ed Fox, Andrew Levecchia) City of Camden (Ed Williams) DVRPC (Karen Cilurso, Kevin Murphy) Fairview Main Street (Sue Brennan) Haddon Township (Ellie Connell) NJDOT (Sansevalin Kumaresan) Barb's Harley-Davidson (Barb Borowiec)
NJ	NJ 27	4E	Route 27/Renaissance 2000 Corridor Study	Orth-Rodgers & Associates, May 1999	Not available.
NJ	NJ 29	4A	NJ 29 Waterfront Boulevard Study	NJDOT (ongoing as of publication)	Not available.
NJ	NJ 33	9B	NJ 33 Corridor Study	DVRPC Publication 06025, June 2006	This study was developed using a consensus-based approach with input from the corridor communities as well as state, county and regional agencies in the identification of transportation problems. Detailed field views and technical analysis were conducted to identify and quantify the transportation problem areas and document practical solutions. A detailed write-up of the existing conditions, identified problems and potential improvement scenarios is presented. Crash clusters were identified and analyzed, bicycle and pedestrian improvements recommended and land use policy improvements suggested. The present and future traffic conditions on selected arterials were analyzed using the DVRPC regional simulation model. 2025 traffic volumes on arterial segments in the corridor were developed using different road network scenarios.
NJ	NJ 38	10A, 10B, 10C	NJ 38 Corridor Study	DVRPC Publication 01023, August 2001	This document presents a transportation improvement plan for the NJ 38 Corridor in Burlington County and Camden County. The corridor planning effort undertakes the traditional examinations of an existing transportation/circulation system, in this case NJ 38 and surrounding facilities, identifying safety and functional or operational problems and recommending potential solutions, as appropriate. This plan takes a comprehensive look at the transportation needs of the corridor and identifies which project locations are in need of immediate attention and who is responsible to get these projects moving to the next step.
NJ	NJ 42	3D	NJ 42 & College Drive Land Use and Transportation Study	McCormick Taylor and Glatting Jackson , 2007	Not available.
NJ	NJ 42	3A, 3D	NJ 42 Corridor Study: A Plan of Action	DVRPC Publication 08046, August 2008	This study addresses the problem of congested roadways largely caused by rapid suburban development and a lack of alternatives to the single-occupant vehicle within the NJ 42 corridor. Land use policies that encourage sprawl are evident in this corridor and this has impacted the environmental stability of the area. This study attempts to address these needs by identifying immediate as well as long-term context sensitive solutions that can improve traffic mobility, circulation, and safety, while protecting the integrity of the environment. A detailed write-up of the existing conditions and recommended improvement scenarios is presented. Improvements such as access management, improvement to the road network, signal timing, better pedestrian facilities and amenities and transit improvements have been identified and documented.
NJ	NJ 45	12A, 12B	Route 45 Corridor	DVRPC Publication 05013,	This document presents a planning effort that links transportation and land use planning by managing growth appropriate to infrastructure

Table 13: Referenced Corridor Studies (continued)

State	Route	CMP Subcorridor(s)	Report Title	Publication/Author Information	Summary
			Study	March 2005	capacity and consistent with county, state, and regional plans to foster economic development. This study provides a set of suitable transportation improvements, land use and economic development strategies that address the needs of corridor residents and employers for Route 45 in Gloucester County. This study focuses on a transitional area at a stage of growth between first generation suburbs and a new regionalism community type, promoting economic development and transportation improvement strategies. The goal of the study is to enhance this region as a major transportation artery and economic center in the county, thereby encouraging urban redevelopment and infill development, and discouraging the continuing trend of sprawl.
NJ	NJ 55	3C, 3E	Route 55 - Deptford Traffic Study	DVRPC Publication 06027, December 2006	This is a traffic study of the retail area of Deptford Township in Gloucester county. It includes an origin-destination survey to determine travel characteristics at and around the regional retail center in the Deptford Mall area. It also includes future year analysis of the proposed Route 55 directly with Clements Bridge Road via Greenbriar Court. Short tem improvements to the highway infrastructure that could alleviate congestion at key locations were also identified.
NJ	NJ 70	13A, 13B, 13C	Final Concept Development Report for Route 70 (M.P. 0.00 to 8.33)	Baker, October 2004	Not available.
NJ	NJ 70	13A, 13B, 13C	NJ 70 Corridor Study	DVRPC Publication 06003, November 2005	This document presents a transportation improvement plan for the NJ 70 Corridor in Camden and Burlington Counties. The corridor planning effort undertakes the traditional examinations of an existing transportation/circulation system, in this case NJ 70 and surrounding facilities, identifying safety and functional or operational problems, and recommending potential solutions, as appropriate. This plan takes a comprehensive look at the transportation needs of the corridor and identifies which project locations are in need of immediate attention, and identifies who is responsible for advancing these projects to the next step.
NJ	NJ 73	5C, 6F, 6G, 6E, 14A, 14B, 13C	NJ 73 Corridor Study - Year 2020 Planning Corridors - Report 4	DVRPC Publication 00023, August 2000	This document presents a transportation improvement plan for the NJ 73 Corridor in Burlington County and Camden County. The corridor planning effort undertakes the traditional examinations of an existing transportation/circulation system, in this case NJ 73 and surrounding facilities, identifying safety and functional or operational problems and recommending potential solutions, as appropriate. This plan takes a comprehensive look at the transportation needs of the corridor and identifies which project locations are in need of immediate attention and who is responsible to get these projects moving to the next step.
NJ	NJ Turnpike	1B, 1C	The New Jersey Turnpike Exit 8A Area Transportation & Land Use Study	The Municipal Land Use Center at The College of New Jersey, Spring 2007	Not available.
NJ	US 1, US 206, North Olden Ave.	4A, 4D, 8A, 8B	Mercer Crossings Transportation Study: Building a Foundation for Redevelopment	DVRPC Publication 07039, April 2008	This report documents a transportation study of Mercer Crossings, an economically depressed area located at the intersection of Trenton City, Ewing, and Lawrence. Transportation improvements that would support redevelopment of Mercer Crossings have been identified and analyzed. The study topics derive, in part, from the recommendations of a previous Urban Land Institute study, *Mercer County New Jersey: A Strategy for Redevelopment*, and have been formulated in close consultation with Mercer County Planning Division, which chairs the study advisory committee. The transportation improvements considered reflect both a traditional focus on efficient traffic movement and a non-traditional concern with transformation of streetscapes. On N. Olden Avenue, intersection improvements to increase the performance and safety of the roadway have been proposed. On Spruce Street, a 4 lane to 3 lane conversion, i.e., road diet, has been evaluated. A proposed new facility, the Calhoun Street Extension (CSE), which is designed to improve the connectivity of the local street network, has also been analyzed. Travel demand on the CSE is modeled using manual traffic assignment. Its other impacts are delineated. Finally, large truck traffic in Mercer Crossings residential neighborhoods is investigated. Data on traffic volume and temporal distribution of trips have been collected at two major trip generators in the study area and several alternate routes are researched.
NJ	US 130	6E, 6B	Context Sensitive Vision Plan – Route 130 Corridor, Burlington County, New Jersey	Parsons Brinckerhoff, Anton Nelessen and Associates, CDM, May 2003	Not available.
NJ	US 130	6B, 6C, 6D	New Jersey Needs and Strategy Development Corridor - US 130 Corridor – Burlington County	DVRPC Publication 00011, June 2000	This is a systems level study, which provides a corridor wide analysis of the US 130 corridor in Burlington County. Undertaken at the request of New Jersey Department of Transportation, the study was conducted to determine the adaptability of the transportation management systems of the New Jersey Department of Transportation and the Delaware Valley Regional Planning Commission to the corridor planning process. The study identifies the transportation needs and deficiencies of the corridor and provides recommendations that address these needs.
NJ	US 130	6D, 6E	Route 130 Visioning	Parsons Brinckerhoff, August	*The Route 130 Visioning Study* is a joint planning effort led by the Delaware Valley Regional Planning Commission, the New Jersey

Table 13: Referenced Corridor Studies (continued)

State	Route	CMP Subcorridor(s)	Report Title	Publication/Author Information	Summary
			Study Transportation Planning Deficiency Analysis	2003	Department of Transportation, and Burlington County. The study is focused on Route 130 from Wood Street in Burlington City to the Pennsauken Creek in Cinnaminson Township and includes Kiem Boulevard between Route 130 and the Delaware River. The corridor passes through seven municipalities, including Burlington City, Burlington Township, Willingboro, Edgewater Park, Delanco, Delran, and Cinnaminson, all within Burlington County.
NJ	US 130, US 206	6B, 10B	Route 130/Delaware River Corridor Extension; Route 206/Farmbelt Corridor Transportation and Circulation Study	DVRPC Publication 03021, June 2003	This is the transportation and circulation element of a strategic plan for the northeastern region of Burlington County along the US 206 and US 130 corridors. This study was developed using a consensus-based, approach with input from the corridor communities as well as state, county and regional agencies in the identification of transportation problems. Detailed field views and technical analysis were conducted to identify and quantify the transportation problem areas and document practical solutions. A detailed write-up of the existing conditions, identified problems and potential improvement scenarios is presented. The present and future traffic conditions on selected arterials were analyzed using the DVRPC regional simulation model. 2025 traffic volumes on 41 arterial segments in the corridor were developed using different land use scenarios. An agricultural route network was identified which represents the preferred transportation network by farmers in the area to facilitate mobility of farm equipment between farms, as well as goods movement to and from farms. Current constraints and deficiencies to this route have been documented and necessary improvements identified. A strategic implementation plan was developed to be used as a dynamic long range tool for the systematic selection of projects to create a significantly improved transportation system within the study area.
NJ	US 30	5C, 5B	Inter-Municipal Cooperation: White Horse Pike Economic Development and Land Use Assessment	DVRPC Publication 03022, August 2003	As part of a continual project to foster inter-municipal cooperation, the Delaware Valley Regional Planning Commission (DVRPC) with the support of the Camden County Planning Department and White Horse Pike Redevelopment Coalition conducted an economic development and land use assessment of the White Horse Pike from Barrington Borough to Clementon Borough. The purpose of this assessment is to examine the White Horse Pike in terms of economic redevelopment potential and to address issues such as aesthetics, traffic, and commercial revitalization strategies. This assessment will act as the first phase of the revitalization of the White Horse Pike, and the Coalition will continue to work together to implement the recommended strategies within this report.
NJ	US 30	5A, 5B, 5C	US 30 Corridor Study	DVRPC Publication 02028, July 2002	This document presents a transportation improvement plan for the US 30 Corridor in Camden County. The corridor planning effort undertakes the traditional examinations of an existing transportation/circulation system, in this case US 30 and surrounding facilities, identifying safety and functional or operational problems and recommending potential solutions, as appropriate. This plan takes a comprehensive look at the transportation needs of the corridor and identifies which project locations are in need of immediate attention and who is responsible to get these projects moving to the next step.
NJ	US 30	5C	US 30 Corridor Study	DVRPC Publication 06036, September 2006	This document presents an analysis of the transportation issues of the US 30 Corridor in the eastern most portion of Camden County. The corridor planning effort undertakes the traditional examinations of an existing transportation/circulation system, in this case US 30 and surrounding facilities, identifying safety and functional or operational problems and recommending potential solutions, as appropriate.
NJ	US 206	4D, 4E, 4F	US 206 Corridor Study	DVRPC Publication 06031, June 2006	This study was developed using a consensus-based approach with input from the corridor communities as well as state, county and regional agencies in the identification of transportation problems. Detailed field views and technical analysis were conducted to identify and quantify the transportation problem areas and document practical solutions. A detailed write-up of the existing conditions, identified problems and potential improvement scenarios is presented. Current constraints and deficiencies to this route have been documented and necessary improvements identified. A strategic implementation plan was developed to be used as a dynamic long-range tool for the systematic selection of projects to create a significantly improved transportation system within the study area.
NJ	US 322	7A, 7C, 7D, 7E	Route 322 M.P. 4.80-14.90 Logan, Woolwich and Harrison Townships, Gloucester County, New Jersey: Tier 2 report	Urban Engineers, Inc., March 2003	This report is located within the townships of Logan, Woolwich and Harrison along the US Route 322 corridor in Gloucester County. This report is designed to identify a list of short-term, mid-term and long-term improvements to safety in the corridor.
NJ	US 322	7A, 7B, 7C, 7D, 7E	Managing Change along the US 322 Corridor: Land Use and Transportation Issues, Policies and Recommendations - Volume I	DVRPC Publication 06023, June 2006	The New Jersey Department of Transportation (NJDOT), through its Concept Development Program, is encouraging counties and municipalities to work cooperatively along key transportation corridors to assess land use and access management policies and to evaluate area growth potential, as defined in local zoning ordinances, and its transportation improvement and policy implications. The US 322 corridor assessment and the resulting implementation recommendations are intended to (1) preserve the State's investment in current or pending transportation investments; (2) promote the conditions to achieve multi-modal transportation solutions to help alleviate current corridor congestion and forecasted travel growth; and (3) to further the goals of coordinated land use and transportation planning both within municipalities and along multi-municipal corridors. Volume One documents the baseline conditions along the corridor and provides a municipal and corridor wide build out analysis. Volume Two will include land use and transportation recommendations as well as sample ordinances.

Table 13: Referenced Corridor Studies (continued)

State	Route	CMP Subcorridor(s)	Report Title	Publication/Author Information	Summary
NJ	Various	Various	Cordon Line Highway Survey for the Delaware Valley Region – Report No. 1; US1 and NJ 70 Cordon Stations in Burlington and Mercer Counties	DVRPC Publication 02029, June 2002	A cordon line survey of traffic entering and leaving the Delaware Valley region was conducted during the summer of 2001. This is a summary report describing the characteristics of traffic crossing the regional cordon line at 2 locations in New Jersey: US 1 and NJ 70. This includes information regarding the data collection, data summaries, and complete data tables in the Appendices.
NJ	Various	Various	New Jersey Project Identification & Prioritization - September 2006	DVRPC Publication 06014, March 2006	This report describes the methodology used to identify transportation needs of the four county New Jersey portion of the region which are not yet being addressed in the New jersey Project Development Process. The methodology used data from a wide variety of sources, including the long-range plan, the DVRPC Work Program, NJDOT's Congestion Management System, Pavement Management System and Bridge Management System. The management systems will be used as a base from which problem areas will be identified from. The other sources will then be used to supplement the inventory by adding other problem areas that were not identified by the management systems. The report contains a set of tables that list the identified problem areas for each county.
PA	Baltimore Avenue	5C, 5E	Baltimore Avenue Corridor Revitalization Plan	Philadelphia and Delaware County Planning(McCormick Taylor), March 2007	Not available.
PA	Baltimore Pike	6A, 6B	Baltimore Pike Corridor Revitalization Assessment Building a Case for Community and Economic Redevelopment	DVRPC Publication 01037, December 2001	As part of a continuing project to foster inter-municipal cooperation, the Delaware Valley Regional Planning Commission (DVRPC) with the support and cooperation of the Delaware County Planning Department (DCPD), Lansdowne, East Lansdowne and Yeadon boroughs (which comprise the Eastern Delaware County Council of Governments), Clifton Heights Borough and Upper Darby Township conducted a Revitalization Assessment of the Baltimore Pike Corridor. The purpose of this assessment is to identify issues and conflicts within the corridor study area and build a case for the need of economic and community redevelopment along the corridor, which will help the study area municipalities obtain funding for such activities. To this end, DVRPC analyzed existing conditions and trends in the study area, conducted a land use analysis and aesthetic assessment, reviewed PennDOT's transportation enhancement project along Baltimore Pike and developed a vision, recommendations and implementation strategies to guide future revitalization efforts. *Baltimore Pike Corridor Revitalization Assessment: Building a Case for Community and Economic Redevelopment* presents the outcome of these efforts.
PA	Chester City	2D, 4D, 6A	Amtrak Service at Chester Transportation Center Feasibility Study	DVRPC Publication 09003, September 2008	This study examines the feasibility of providing Amtrak service to the Chester Transportation Center. Elements of rail operations, parking and inter-state destination appeal were examined for issues impeding service as well as enabling solutions. While the addition of Amtrak station service is technically feasible, Northeast Corridor traffic scheduling would be affected. Comparisons with other stations suggest that a limited interstate station stop may not generate many boardings, especially in such close proximity to major Amtrak stations with full services. It was suggested that benefits would accrue through the provision of coach style buses providing direct service from established major interstate hubs such as 30th Street Station and the Philadelphia International Airport.
PA	Chester City	2D, 4D, 6A	Chester City Ramp Access Study	DVRPC Publication 03003, February 2003	This report documents a traffic analysis and 2027 traffic volume forecast for an area of Chester City in Delaware County as part of a regional effort to develop ramps for access to the Chester City waterfront. Updated traffic counts and socio-economic data necessary to prepare 2027 forecasts for the no-build and two build alternatives for the study area are presented. DVRPC's regional travel simulation model was used to estimate future traffic volumes for the alternatives. An analysis of the existing conditions, an review of the alternatives, and a brief discussion of the focused traffic simulation model used to develop the traffic projections are also included.
PA	Chester City	2D, 4D, 6A	Conceptual Access Plan for the City of Chester	DVRPC Publication 01025, October 2001	The objective of this report is to recommend an access plan to direct truck traffic to the Chester waterfront, and auto traffic to the CBD and waterfront from the regional highway system. A series of alternative routing schemes were evaluated as to their impact an feasibility. For the recommended access routes, detailed roadway and signing improvement as recommended.
PA	Marcus Hook	4D, 6A, 8A	Marcus Hook TOD	Kise Straw & Kolodner Publication, 2003	Not available.
PA	I-276, I-476	1A, 2B	Area Revitalization, Mobility & Industrial Corridor Reuse Study: Norristown, Plymouth & Conshohocken	DVRPC Publication 05006, March 2005	The purpose of this study is to evaluate the planning issues in adjoining sections of Norristown, Plymouth and Conshohocken and to recommend strategies that will address the needs and problems of the area. Proposed recommendations address the issues of commercial revitalization, industrial use, housing, roadway reconstruction and circulation, public transit accommodations, recreational amenities and streetscape improvements. This report completes the first phase of the two-phase project; an implementation phase related to the study recommendations will follow.
PA	I-422	9B	Interim Improvements to Help Relieve US 422 Westbound Evening Traffic	GVFTMA newsletter, 2005	This item describes the process and specifics of interim improvements for the River Crossing Complex where US 422 crosses over the Schuylkill River.

Table 13: Referenced Corridor Studies (continued)

State	Route	CMP Subcorridor(s)	Report Title	Publication/Author Information	Summary
			Problems		
PA	I-476	2A, 2B, 2C, 2D	I-476 Express Bus Feasibility Study	DVRPC Publication 03008, June 2003	This report explores the feasibility of express bus service operating on I-476, the Mid-County Expressway, between Chester City and mall centers at King of Prussia or Plymouth Meeting. Four service alternatives were assessed by study area demographics, comparative travel times, and ridership forecasts using DVRPC's transportation simulation model. Based on this data, express service was found to be faster than any current one-seat service, though low ridership forecasts make this a marginally feasible venture. Defined employee-employer matching, hours of operation, guaranteed ride home, and airport service were some of the issues to resolve. Transportation Management Associations may be best to examine and coordinate many of these points if a successful operation were to be developed.
PA	I-76	3C	Henderson Road/I-76 Westbound Ramps Traffic Study - Montgomery County, Pennsylvania	DVRPC Publication 03006, October 2003	This report presents 2010 and 2030 forecasts for the No-Build and Build Alternatives for the Henderson Road corridor and surrounding traffic study area. It was prepared at the request of the Pennsylvania Department of Transportation, which is conducting traffic alternatives analyses in support of providing new interchange ramps between Henderson Road and I-76 (Schuylkill Expressway). DVRPC's travel simulation model was utilized to estimate future traffic volumes for the No-Build and Build Alternatives. The Build Alternative assumes new ramp interchanges between Henderson Road and I-76 (Schuylkill Expressway) that are designed to improve traffic flows and enhance safety.
PA	I-76, I-95	4A, 4B, 4C	Pennsylvania Turnpike/Interstate 95 Interchange Project: Final Congestion Management System Evaluation	Greiner, Inc.; Kise, Franks & Shaw; Chilton Engineering; Barton Aerial Technologies, Inc., October 1995	The purpose of this evaluation is to evaluate feasible CMS strategies, singularly or combined, to determine if they meet the needs identified for the I-95/I-276 Interchange Project. Sixteen different strategies were evaluated to determine if congestion could be reduced in the traffic impact corridor enough to eliminate or reduce the need for a capacity adding project.
PA	I-95 (Ann Street to Frankford Creek)	PA 4B	I-95 Interchange Enhancement and Reconstruction I-95 Section AFC (Ann Street to Frankford Creek) Interchange Traffic Study	DVRPC Publication 06010, May 2005	This report presents traffic forecasts and analysis for the Delaware Expressway (I-95), Section AFC (Ann Street to Frankford Creek) and Allegheny Avenue. The report examines the impacts of 2025 traffic volumes on I-95, interchanges for Castor, Aramingo/Girard and Allegheny avenues, and also the local roadway system for a No-Build Alternative with and without Delaware Avenue Extension and seven Build Alternatives. The report also briefly describes the methodology used to develop the traffic forecasts.
PA	I-95, I-676	PA 4B	I-95 Interchange Enhancement and Reconstruction: I-95 Girard Avenue and I-676 Vine Expressway Interchanges, Section GIR Traffic Study	DVRPC Publication 05003, June 2005	This report presents traffic forecasts and analysis for the Girard Avenue and I-676 Vine Expressway Interchange complex along I-95 in the Northern Liberties and Penn Treaty sections of Philadelphia. The report examines the impacts of 2025 and 2005 traffic volumes on I-95, interchange ramps for Girard Avenue and I-676 Vine Expressway, and also the local roadway system for the No-Build (Base Case) Alternative and five different Build options. The “Base Case” or No-Build Alternative, eliminates the lane drop on I-95 southbound at Girard Avenue while adding a connection from the southbound Girard Avenue off-ramp to Aramingo Avenue, and five build options, which would reconfigure the I-95 on and off-ramps as well as make other improvements to the Aramingo Avenue/Girard Avenue Interchange. The report also briefly describes the methodology used to develop the traffic forecasts.
PA	I-95, PA 73	4B, 5G	I-95 Interchange Enhancement and Reconstruction Cottman/Princeton Interchange Traffic Study	DVRPC Publication 02025, June 2002	This report presents traffic forecasts and analysis for the I-95 Cottman/Princeton interchange complex in northeast Philadelphia. The report examines the impacts of 2025 traffic volumes on I-95, the interchange ramps, and the local roadway system of four improvement alternatives: the No Build alternative, which would encompass only minor changes to the system, and three Design Options, which would reconfigure the I-95 on and off-ramps as well as making other improvements to roadway in the ramps' vicinity. The report also briefly describes the methodology used to develop the traffic forecasts.
PA	I-95, US 322	4D, 8A	I-95/US 322 Interchange Traffic Study (Technical Memorandum)	DVRPC Publication 08024, April 2008	This report documents 2014 and 2034 traffic forecasts for the I-95 / US 322 Interchange and surrounding area in Delaware County. Average daily and AM and PM peak hour forecasts are provided for a No-Build and three Build alternatives and compared to current volumes.
PA	PA 100	8A, 8L, 8M	PA 100 Corridor Study	DVRPC Publication 98002, January 1998	This report documents a comprehensive land use and transportation evaluation of the 13 mile long PA 100 corridor in central Chester County, Pennsylvania. The work augments planning activities conducted independently by the five corridor municipalities through adoption of a multimodal corridor perspective, application of regional planning initiatives (PA Congestion Management Systems, Mobility Alternatives Programs, etc.) and use of regional evaluation procedures (the regional travel demand forecasting model). A total of 48 highway, public transportation, travel demand management and intelligent transportation systems improvements are enumerated to directly solve current and future mobility problems identified in and around the corridor. These are enveloped into a recommended Capital Improvement Plan for the corridor, totaling $635 million. The capital improvements recommendations are complemented with a comprehensive list of growth management and travel demand management actions which are required also necessary to maintain the

Table 13: Referenced Corridor Studies (continued)

State	Route	CMP Subcorridor(s)	Report Title	Publication/Author Information	Summary
					mobility in the corridor serviceability of the capital improvements.
PA	PA 100	8L	Pennsylvania Congestion Management System - PA 100 Corridor	DVRPC Publication 02009, June 2002	This report is part of the Pennsylvania Congestion Management System (CMS) and provides analysis of the PA 100 corridor in Chester County. Key intersections, arterial subcorridors and transportation systems were examined. Ten intersections experiencing significant delays were studied at greater detail and congestion mitigation strategies were developed. Level of Service was evaluated on 37 arterial subcorridors. Five subcorridors were rated at level of service F and six performed at level of service E. Strategies were given for improving poor levels of service. The 2025 Journey-to Work forecasts showed that private automobiles will be the predominant method of commuting in the study area. Growth pressures, increasing fuel prices and air quality concerns make transit an attractive method of reducing single occupant vehicle trips in the study area. Transit improvements were explored as a viable method of mitigating congestion. The report also suggests a number of Travel Demand Management (TDM) measures such as TransitChek and Mobility Alternative Programs as additional methods of reducing single occupant vehicle trips. Bicycle and pedestrian facilities were also examined to determine ways to promote their use.
PA	PA 3	5B, 10C	Route 3, West Chester Pike, Land Use and Access Management Strategies, Phase I	DVRPC Publication 05029, March 2006	Phase I of this report documents existing conditions and recommends local land use and access management strategies for the communities along the Routes 3 and 252 corridors in Delaware County. Future growth pressure and redevelopment opportunities coupled with traffic congestion problems make this area ripe for the employment of access management techniques. This study recommends land use control measures and proactive collaboration with the Pennsylvania Department of Transportation to maintain or improve mobility in the face of increased future population. This study also seeks to establish aesthetic consistency along the corridor through the modification of land use planning documents and local ordinances.
PA	PA 3, I-476	10B, 10C	Feasibility Analysis of West Chester Pike Busway 69th Street Terminal to I-476	DVRPC Publication 07001, January 2007	The purpose of this study is to conduct a feasibility analysis of using the West Chester Pike median between 69th Terminal and I-476 for a reversible busway. It takes a “fatal flaw” approach, trying to identify potential problems that would prevent conversion of the median. Areas examined included identification of physical obstructions in the median, transit ridership and the impact on transit operations, design issues related to a busway, and impact on traffic flow.
PA	PA 29, PA 113	9A, 9B	InterCounty Relief Route: Schuylkill, East Pikeland, Phoenixville, Upper Providence	DVRPC Publication 06024, August 2006	The Inter-County Relief Route is a proposed circumferential highway which would mimic the alignment of the previously proposed multilane Phoenixville Spur expressway (including a new bridge over the Schuylkill River) and benefit traffic conditions through the greater Phoenixville, region; but which could be provided in amore context-sensitive manner, since it would be comprised principally of existing at-grade, two lane roadways. Both the ICRR highway concept and this detailed study of the highway were recommendations of the Phoenixville Area Intermodal Transportation (DVRPC, January 2003)
PA	PA 113	11A	PA 113 Heritage Corridor Transportation and Land Use Study	McMahon Associates Publication, November 2005	Not available.
PA	PA 152, US 202	8H	Bristol Road Extension Traffic Study (Technical Memorandum)	DVRPC Publication 08032, May 2008	This report documents 2030 traffic forecasts for the Bristol Road Extension Traffic Study area. Average daily and AM, midday, and PM peak hour forecasts are provided for a No-Build and a Build alternative and compared to current volumes. The Build Alternative extends the terminus of Bristol Road from US 202 to Park Avenue and provides additional connections between US 202 and portions of Chalfont and New Britain boroughs.
PA	PA 309, County Line Road	14C	Access Management Along Pennsylvania Highways in the Delaware Valley - County Line Road / PA 309 Case Study Corridor	DVRPC Publication 05020, September 2005	This project was created in support of PENNDOT’s effort to establish model access management ordinances for use by municipalities statewide. Two corridors were selected as case studies to help PENNDOT illustrate the possible benefits of proactive access management implementation. This corridor report highlights County Line Road between North Wales Road and the Sellersville Bypass (the second case study focuses on City Avenue/US 1). The work was preformed with the help of member governments, regional transportation providers, and PENNDOT. The project began with the documentation of existing conditions along the County Line Road corridor. Access management related problem areas and specific issues were identified and studied in further detail. Recommendations to improve the congestion and safety concerns along the corridor were based on PENNDOT’s statewide model access management ordinances. A theoretical conceptual plan was prepared as a result of these recommendations and a map of these suggestions is included in this report. Additionally, this conceptual plan acted as a base for the interactive exercise that PENNDOT included in their access management model ordinance statewide training sessions.
PA	PA 413, PA 213	12A, 13A, 5I, 8I	Pennsylvania Congestion Management System - PA 413 Corridor	DVRPC Publication 03016, July 2003	This report is part of the Pennsylvania Congestion Management System (CMS) and provides an analysis of the PA 413 corridor in Bucks County, Pennsylvania. Through travel time surveys, conditions at intersections and arterial sections within the study network were evaluated during the peak periods. The most congested intersections and arterial sections were examined in detail and improvement measures to reduce congestion and delay were identified. Transit service was evaluated and changes were recommended to improve the attractiveness of this mode. Several Travel Demand Management (TDM) measures such as TransitChek and Mobility Alternative Programs were suggested as additional methods of reducing single occupant vehicle trips. Based on DVRPC’s 2025 forecast of Journey-To-Work travel patterns, the major destinations for highway person trips within the study area were determined. Based on the same

Table 13: Referenced Corridor Studies (continued)

State	Route	CMP Subcorridor(s)	Report Title	Publication/Author Information	Summary
					forecast, origins and destinations of transit person trips were also determined.
PA	PA 413, PA 513	5I, 13A	Assessment of Land Use and Transportation Solutions for the Route 413/513 Corridor	DVRPC Publication 04014, February 2004	The purpose of this study was to identify key land use and transportation issues and to propose associated recommendations for the Route 413/513 corridor, along with Business Route 1 and Main Street in Hulmeville, as it affects the four boroughs of Langhorne, Langhorne Manor, Penndel, and Hulmeville and a small portion of the township of Middletown. Recommendations address the issues of creating a pedestrian-friendly environment, improving roadways and public transit accommodations, balancing regional and local needs, strengthening existing commercial districts, and enhancing the aesthetic quality of the study area. This report completes Phase I of a two Fiscal Year project. It will be followed by an implementation phase related to the study recommendations.
PA	PA 413, PA 332	13A	Access Management Along Pennsylvania Highways in the Delaware Valley--Case Study Corridor: Durham Road (PA 413)	DVRPC Publication 08098, October 2008	The evaluations summarized in this report were performed in support of PennDOT's statewide effort to promote the establishment of formal access management ordinances for state and local highways. A case study of Durham Road (PA 413), between PA 232 and the Newtown Bypass, was conducted and a conceptual plan prepared for a segment of Durham Road as a tangible illustration of the benefits of planning and implementing access management strategies; and as a means of combating congestion and enhancing traffic safety. Principles and procedures outlined within PennDOT's Access Management Model Ordinances for Pennsylvania Municipalities Handbook, the Transportation Research Board's Access Management Manual, and the PennDOT/NJDOT Smart Transportation Guidebook were followed in developing the conceptual plan. The work was performed with the participation of staff from the Bucks County Planning Commission, PennDOT, and representatives from Wrightstown and Newtown townships. Broadly described, the safety and mobility improvements suggested for the corridor included eliminating turning movements (by closing driveways or restricting movements), reducing through travel interruptions by adding auxiliary turning lanes at traffic signals and providing a minimum of 1,000 feet between traffic signals), making vehicle entrances and exits to and from driveways and roadways more predictable (by supplying uniform spacing and better defined driveways, and provisions for shared access and integrated roadway, sidewalk and trail networks). Formal access management plans and codified ordinances are recommended, and close coordination with personnel from the PennDOT District 6-0 traffic Unit and the Bucks County Planning Commission to secure the vision and benefits fro PA 413 within Wrightstown and Newtown townships.
PA	PA 611, PA 263	14A, 14E, 14F	Routes 611/263 Corridor Study Phase 1 Report	DVRPC Publication 08045B, June 2008	This study provides a unique opportunity to identify ways in which transportation and land use can be coordinated in concert with environmental needs. It is hoped that this synergy will enhance the creation of economic development opportunities within the corridor. The study area was developed with the active involvement and cooperation of representatives from each of the study area communities, Montgomery County and the public. The study includes an assessment of existing corridor conditions, identification of strategic issues and identification and analysis of the corridors' vision, goals and objectives. The study is Phase I of a two-phase study process; the second phase will focus on implementing various Phase I recommendations, working with Montgomery County and the study corridor municipalities.
PA	PA 724	9A	PA 724 Corridor Study	DVRPC Publication 04021, September 2004	This report documents a study to identify efficient, low cost alternatives for improving the operation, capacity and safety of PA 724. Lack of capacity at key intersections, poor sight distance, uncontrolled access and inadequate signage were identified as safety and operational concerns on PA 724. Overall, the addition of turn lanes and signals, better access management, and improved roadside maintenance (e.g. regular pruning of roadside vegetation) were found to be the most feasible options. A task force was convened made up of representatives from North Coventry, East Coventry, East Vincent and East Pikeland townships as well as PennDOT, Tri County Chamber of Commerce and DVRPC staff. To improve traffic operations, task force members agreed that major widening of PA 724 was not an option. Turn lanes recommended in the study would require conversion of existing shoulders or expansion of PA 724 where right of way already exists. Recommended signal locations were based in large part on the location of proposed development. The recommendations in this report were based on field views, municipal and task force input, and Act 209 studies.
PA	Railroads	PA 2C, PA 2D	Delaware County Highway-Railroad Grade Crossing Study	DVRPC Publication 06007, October 2006	This study examines a grouping of eleven highway-railroad grade crossings along a major rail freight line in Delaware County, Pennsylvania. The purpose of the study is to document existing conditions at the crossings in the corridor, and to propose an improvement program which facilitates the flow of freight and mitigates the impacts of the trains on the surrounding communities. The report provides detailed information, maps, and aerial photographs about each of the corridor's eleven grade crossings. A range of options available to mitigate crossing conflicts are summarized and an analytic tool, GradeDec.Net, is employed to test various improvement scenarios. Drawing from a broad based steering committee, the report sets forth a broad corridor action plan, identifies those crossings with the greatest potential to be grade separated, and recommends a number of activities which will help integrate rail freight operations with community goals.
PA	Transit (SEPTA R5)	8M	Needs and Opportunities Study for the R5 Extension West of Thorndale	DVRPC Publication 07021, June 2007	This study examines the costs and benefits of extending previously discontinued service from Thorndale Station west to three stations in Chester County: Atglen, Parkesburg and Coatesville. The methods of analysis include evaluation of current service and parking levels, Year 2020 straight line ridership forecasts based on station sheds, an inventory of capital and operating costs and an assessment of cost recovery for varying ridership. The results of the analysis suggest three points: 1) the current mix of SEPTA and Amtrak service (including recent Amtrak rail upgrades) already provide a de facto western extension and should be promoted as Keystone Corridor service; 2) expensive capital improvements for rail, station, and parking improvements would be required for new service, though no

Table 13: Referenced Corridor Studies (continued)

State	Route	CMP Subcorridor(s)	Report Title	Publication/Author Information	Summary
					funding sources were identified; and 3) Year 2020 forecast ridership could support a service extension but would require strong transit orientation of residential and employment growth.
PA	US 1	5F	Access Management Along Pennsylvania Highways in the Delaware Valley - City Avenue/US 1 Case Study Corridor	DVRPC Publication 05019, September 2005	This project was created in support of PENNDOT's effort to establish model access management ordinances for use by municipalities statewide. Two corridors were selected as case studies to help PENNDOT illustrate the possible benefits of proactive access management implementation. This corridor report highlights US1 / City Avenue between 54th Street and the I-76 interchange ramps (the second case study focuses on PA 309 County Line Road). The work was preformed with the help of member governments, regional transportation providers, and PENNDOT. The project began with the documentation of existing conditions along the City Avenue corridor. Access management related problem areas and specific issues were identified and studied in further detail. Recommendations to improve the congestion and safety concerns along the corridor were based on PENNDOT's statewide model access management ordinances. A theoretical conceptual plan was prepared as a result of these recommendations and a map of these suggestions is included in this report. Additionally, this conceptual plan acted as a base for the interactive exercise that PENNDOT included in their access management model ordinance statewide training sessions.
PA	US 1	5G, 5H	US 1 - Roosevelt Boulevard Corridor Study	DVRPC Publication 07032, June 2007	This study was conducted as part of DVRPC's 2030 long-range plan for the region. The section of this corridor studied extends from Ninth Street in the south to Grant Avenue in the north and is approximately 8 miles in length. The extensive breadth of the corridor has become an obstacle for pedestrian traffic. The corridor has experienced numerous pedestrian fatalities over the years and also experiences heavy peak-hour vehicular congestion. This study attempts to identify the constraints and opportunities on the Boulevard and makes recommendations for its improvement as a travel corridor in terms of operational safety and mobility.
PA	US 1	5C, 5E, 10B, 10C	Pennsylvania Congestion Management System – US 1/Baltimore Pike Corridor	DVRPC Publication 00009, June 2000	As a component of the Pennsylvania Congestion Management System, this report provides an examination of congestion at key intersections and arterial segments within the US 1/Baltimore Pike Corridor in Delaware County, and identifies improvement strategies that are both practical and implementable. The 14 most congested intersections and selected corridors were examined in detail and proposed measures to be employed to alleviate current and future congestion were identified. The proposed congestion relief includes the following: signal coordination along major arteries to facilitate a progressive traffic flow; road widening on approaches to major intersections to increase traffic passing through the intersection; installing protected left turn signals; and restricting on-street parking within designated areas. Due to the high residential density and existence of a dense transit network within the corridor, the use of transit as a viable tool toward congestion mitigation in the corridor was also explored. Recommendations were made for improvements which would result in reduced transit travel time, increased accessibility, and increase in customer comfort and convenience.
PA	US 1	4A, 4B, 5H, 5I	US 1 Widening and Reconstruction Traffic Study (Technical Memorandum)	DVRPC Publication 08089, August 2008	This report documents 2015 and 2035 traffic forecasts for the US 1 Expressway corridor between the Philadelphia County Line and the US 1/I-95 interchange in Middletown Township. Average daily and AM and PM peak hour traffic forecasts are provided for a No-Build and two Build alternatives and compared to current volumes.
PA	US 1, PA 532	12A	Congestion Management System Analysis: The Woodhaven Road Project, Philadelphia, Pennsylvania	McCormick, Taylor & Associates, Inc., January 1997	The Congestion Management System (CMS) analysis for the Woodhaven Road Project evaluates travel demand reduction and operational management strategies that could be applied in the area. It is designed to meet project needs to include: the poor structural condition of the Byberry Bridge over the Conrail tracks, vehicular congestion and delay and traffic collection and distribution.
PA	US 1, US 202, US 322	8A, 5B	Route 322 Land Use Study	DVRPC Publication 02022, June 2002	This report recommends local land use strategies to accompany the route 322 improvements project proposed by the Pennsylvania Department of Transportation. This study seeks to create consistency between local land use plans and PennDOT's plans for the expansion of the highway, by encouraging access management and the modification of existing land use planning documents. The Route 322 Land Use Study included an extensive implementation phase that led to the drafting of specific zoning districts and comprehensive plan amendments. These documents are contained in the appendices of this report.
PA	US 13 (Baltimore Avenue)	10A, 5E	Baltimore Avenue Corridor Revitalization Plan (Executive Summary)	DVRPC Publication 07051A, November 2007	The Baltimore Avenue Revitalization Study is the first study produced under DVRPC's Strategies for Older Suburbs initiative. This report documents existing conditions along the multi-municipal Baltimore Avenue corridor from a land use, transportation, and economic/market standpoint, and articulates a cohesive vision for future growth, improvement, and revitalization. Recommendations are presented for specific implementation strategies that should be undertaken by a variety of stakeholders, including local municipalities, the City of Philadelphia, the Delaware County Planning Department, and SEPTA.
PA	US 13 (Baltimore Avenue)	10A, 5E	Baltimore Avenue Corridor Revitalization Plan	DVRPC Publication 07051B, November 2007	*The Baltimore Avenue Revitalization Study* is the first study produced under DVRPC's Strategies for Older Suburbs initiative. This report documents existing conditions along the multi-municipal Baltimore Avenue corridor from a land use, transportation, and economic/market standpoint, and articulates a cohesive vision for future growth, improvement, and revitalization. Recommendations are presented for specific implementation strategies that should be undertaken by a variety of stakeholders, including local municipalities, the City of Philadelphia, the Delaware County Planning Department, and SEPTA.

Table 13: Referenced Corridor Studies (continued)

State	Route	CMP Subcorridor(s)	Report Title	Publication/Author Information	Summary
PA	US 30, PA 113	8M	US 30 Coatesville-Downingtown Bypass Traffic Study	DVRPC Publication 08099, July 2008	This report documents 2010 and 2030 traffic forecasts for the US 30 Coatesville-Downingtown Bypass and surrounding area in Chester County. Average daily and AM and PM peak hour traffic forecasts are provided for a No-Build and three Build alternatives and compared to current volumes.
PA	US 202	8A	US Route 202 Section 100: Land Use Implementation & Coordination	DVRPC Publication 08004, March 2008	This document updates and builds on the analysis and recommendations included in *Route 202 Section 100 Land Use Strategies Study*, which was completed by DVRPC in 2001. Consistent with the Pennsylvania Department of Transportation's planned widening of the corridor, local land use and transportation strategies are explored and the coordination and implementation of "smart growth" planning techniques is encouraged. Recommendations included in this report cover such areas as multi-municipal planning, access management, bicycle and pedestrian infrastructure, transit-oriented development, and historic preservation. Applicable planning tools are identified and described, and sample ordinances are provided for local adoption.
PA	US 202	8C	US 202 (Section 300) Congestion Management System Report	DVRPC Publication 99014, July 1999	The Pennsylvania Department of Transportation has proposed widening US 202 (Section 300) from four to six lanes between US 30 and Valley Road. Federal requirements stipulate that any project which increases single-occupant vehicle capacity must result from a regional Congestion Management System (CMS). The Pennsylvania CMS Phase 2 Report serves as the CMS for the Pennsylvania portion of the DVRPC region. This document builds upon the preliminary findings of the PA CMS Phase 2 Report and is the project-level CMS analysis for the proposed improvements to US 202 (Section 300). This report includes a review of federal requirements and the regional CMS. It also documents and verifies levels of congestion noted in the PA CMS Phase 2 Report and performs a needs assessment. The needs assessment investigates the ability of Transportation Demand Management (TDM) and Transportation Control Measures (TCM) to meet the project needs in lieu of roadway widening. Finally, TDM and TCM strategies are analyzed and a set of commitments are recommended for implementation with project construction.
PA	US 202	8C, 8G, 8H	US 202 Congestion Management System (CMS) Reports/Programs	Section 300 (DVRPC Publication 99014, July 1999) Section 600 (DVRPC, July 27, 1995) Section 700 (DVRPC, July 27, 1995)	The Pennsylvania Department of Transportation has proposed widening US 202 (Section 300) from four to six lanes between US 30 and Valley Road. Federal requirements stipulate that any project which increases single-occupant vehicle capacity must result from a regional Congestion Management System (CMS). The Pennsylvania CMS Phase 2 Report serves as the CMS for the Pennsylvania portion of the DVRPC region. This document builds upon the preliminary findings of the PA CMS Phase 2 Report and is the project-level CMS analysis for the proposed improvements to US 202 (Section 300). This report includes a review of federal requirements and the regional CMS. It also documents and verifies levels of congestion noted in the PA CMS Phase 2 Report and performs a needs assessment. The needs assessment investigates the ability of Transportation Demand Management (TDM) and Transportation Control Measures (TCM) to meet the project needs in lieu of roadway widening. Finally, TDM and TCM strategies are analyzed and a set of commitments are recommended for implementation with project construction.
PA	US 202	8H	US 202 Section 700 - Traffic Study	DVRPC Publication 07009, April 2007	This report documents 2020 traffic forecasts for the US 202 Section 700 corridor in Bucks and Montgomery counties in Pennsylvania. Average daily and AM and PM peak hour forecasts are provided for a No-Build and three Build alternatives. The Build alternatives include a US 202 Parkway on a new alignment, Widening Upper State Road, and a Combination Alternative comprised of some Upper State Road widening and a portion of the new alignment Parkway.
PA	US 202, PA 179	8I	US 202/PA 179 Corridor Study	DVRPC Publication 07033, June 2007	This study was developed using a consensus-based approach with input from the corridor communities of Solebury and Buckingham townships and the Borough of New Hope, as well as state and county representatives in the identification of transportation issues. This study documents and describes the existing conditions along the corridor and identifies alternative concepts that address existing deficiencies. Operational improvements were suggested ranging from intersection redesign to improved regulatory signage and pavement markings. An access management plan was developed for the section of US 202 in the vicinity of Logan Square in Solebury Township. Access management techniques were recommended to improve the safety and efficiency of the corridor. In addition, pedestrian safety recommendations, such as improved crosswalks, sidewalks, and buffers were identified for areas in the vicinity of schools, shopping, and other areas with high pedestrian activity. A bicycle trail map was developed identifying existing and proposed bicycle trails within the corridor and showing their connectivity with other networks in surrounding communities.
PA	US 322, US 202	8B	US 322/202 Interchange Completion Study (Technical Memorandum)	DVRPC Publication 08009, January 2008	The West Chester Bypass (US 202/322) Interchange is located in West Goshen Township, Chester County, near the borough of West Chester. The existing partial interchange contains no direct ramp movements form US 202 southbound to US 322 westbound, or from US 322 eastbound to US 202 northbound. To determine the impact of completing this interchange on study area traffic patterns, DVRPC was asked to forecast year 2030 traffic volumes for the proposed ramps and selected study area roadways. DVRPC also evaluated the potential for land development induced as a result of increased accessibility provided by the proposed ramps.
PA	US 422	9A	Pottstown Bypass (US 422) Reconstruction Traffic Study	DVRPC Publication 02043, December 2002	This report presents 2006 and 2026 forecasts for the No-Build and Two Build Alternatives for the Pottstown Bypass (US 422) and surrounding study area. It was prepared at the request of the Pennsylvania Department of Transportation which is conducting traffic alternatives analyses in support of reconstructing the Pottstown Bypass . DVRPC's travel simulation model was used to estimate future traffic volumes for the No-Build and Build Alternatives. The build alternatives assume various reconfigurations of the Pottstown Bypass interchanges that are designed to improve traffic flows and enhance safety.
PA	US 422,	8C, 9A, 9B	Phoenixville Area	DVRPC Publication 03001,	This report documents the undertakings, findings and recommendations of a multi-municipal transportation planning study to

Table 13: Referenced Corridor Studies (continued)

State	Route	CMP Subcorridor(s)	Report Title	Publication/Author Information	Summary
	PA 23, PA 29		Intermodal Transportation Study	January 2003	accommodate regional development and travel in Greater Phoenixville to the year 2025. The work was performed with the direct participation of member governments and regional transportation providers. Public involvement was conducted formally and informally. Transportation strategies and improvements were identified and evaluated to reduce congestion and promote travel options to single occupant vehicles. Improvement recommendations, emanating from the evaluations, support or augment those determined independently within the study area by: adopting multi-modal and area-wide perspectives; applying regional planning initiatives (PA Congestion Management Systems, Mobility Alternatives Programs, etc.), and; using regional evaluation procedures (the regional travel demand forecasting model). A total of 66 highway, transit, travel demand management and multi-use trail improvement recommendations are enumerated to directly solve current and future mobility problems in the study area. Five technical studies are also recommended to promote intermodal opportunities and to strengthen transportation-land use linkages within the study area. The recommendations are enveloped into a staged Mobility Improvement Plan (MIP) totaling $173.5 million. As a complement to the MIP, the report also contains a comprehensive discussion of management measures which should be practiced to help deliver and maintain mobility throughout the study area.
PA	Various	Various	Speeding Up SEPTA: Finding Ways to Move Passengers Faster	DVRPC Publication 08066, August 2008	The final report of the Pennsylvania Transportation Funding and Reform Commission identified two key opportunities for SEPTA to enhance efficiency: to “reduce costs by improving average system speed” and to streamline and simplify its fare structure. This report explores the first opportunity through an examination of issues related to the improvement of SEPTA system speed. Section 1 of this report includes a table which consolidates and summarizes speed-related recommendations from prior studies, with those prior studies being further detailed in Appendix A. Sections 2 through 4 of this report include the results of three breakout analyses on Transit First in Philadelphia (Section 2), techniques to enhance the efficiency of suburban bus service, focusing on Transit Signal Priority (TSP) techniques (Section 3), and the SEPTA regional rail network (Section 4).
PA	Various	6E, 8G, 12A, 13A, 14C, 14F	Developing Around Transit: TOD Plans for Ellworth-Federal, North Wales, Warminster	DVRPC Publication 06034, September 2006	This document, Developing Around Transit: Transit-Oriented Development (TOD) Plans for SEPTA Broad Street Line Ellsworth-Federal, SEPTA R5 North Wales and SEPTA R2 Warminster, grew out of the work done on Linking Transit, Communities, and Development: Regional Inventory of Transit-Oriented Development Sites, published in 2003. The Regional Inventory determined a priority list of "Transit-Oriented Development (TOD) Opportunity Sites," in furtherance of the goals and policies of DVRPC's Destination 2030 Long Range Plan. Forty-five stations were chosen out of a universe of 340 as having the most potential for TOD. Three stations were chosen for more in-depth study, in South Philadelphia, North Wales Borough, and Warminster Township. Recommendations included in this study cover such areas as zoning, land use, comprehensive plans, access, and development opportunities. The study is oriented toward asset-based plans that build from the existing strengths of each community.
PA	Various	2D, 4C, 4D, 5C, 5E, 6A, 6B, 8A, 10A, 10B	Delaware County Revitalization Plan Area 1-5 and New Area Corridors	Delaware County Planning Department	Not available.
PA	Various	1A, 2A, 2B, 3B, 3C, 8D, 8E, 8F, 8G, 9B, 15B	Schuylkill Crossings Traffic Study	DVRPC Publication 07040, January 2008	This report documents 2030 traffic forecasts for the Schuylkill River bridges in the Conshohocken, Plymouth Meeting, Norristown, King of Prussia area. Average daily and AM and PM peak hour forecasts are provided for a No-Build and two Build alternatives and compared to current volumes. Average peak hour intersection delays and levels-of-service are also provided for current and future conditions.
PA	Various	3A, 4C, 6D, 6E	Stadium Area Transit Study	Kise Straw & Kolodner Publication, June 2004	Not available.

Source: DVRPC, 201

Publication Title:	DVRPC Congestion Management Process – Limiting Traffic Congestion and Achieving Regional Goals
Publication Number:	09028B
Date Published:	October 2010
Geographic Area Covered:	The nine-county Philadelphia metropolitan area which includes the counties of Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania and Burlington, Camden, Gloucester, and Mercer in New Jersey
Key Words:	Congestion Management Process (CMP), congestion, traffic, multimodal, goods movement, transportation, corridors, strategies, Single-Occupancy Vehicles (SOV), capacity, long-range plan, Transportation Improvement Program (TIP), regional transportation planning, criteria
Abstract:	A CMP is a systematic process to manage congestion. It identifies specific multimodal strategies for all locations in the region to minimize congestion and enhance the ability of people and goods to get where they need to go. The CMP advances the goals of the DVRPC Long-Range Plan and strengthens the connection between the Plan and the Transportation Improvement Program (TIP). The 2009 DVRPC CMP is an update of the 2006 CMP and was adopted by the DVRPC Board in December 2008.

Staff Contact:

Zoe Neaderland
Manager of Transportation Safety and Congestion Management
☏ (215) 238-2839
zneaderland@dvrpc.org

Delaware Valley Regional Planning Commission
190 N. Independence Mall West, 8th Floor
Philadelphia PA 19106
Phone: (215) 592-1800
Fax: (215) 592-9125
Internet: www.dvrpc.org

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

190 N. Independence Mall West – 8th Floor

Philadelphia, PA 19106-1520

P: 215-592-1800

F: 215-592-9125

www.dvrpc.org

For More Information

Zoe Neaderland, AICP

Manager, Office of Transportation
Safety and Congestion Management

215.238.2839

zneaderland@dvrpc.org

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