US 202 (Section 300)
CONGESTION MANAGEMENT SYSTEM REPORT

Delaware Valley Regional Planning Commission

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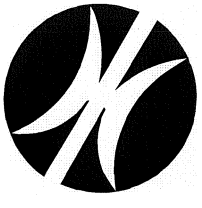
Created in 1965, the Delaware Valley Regional Planning Commission (DVRPC) is an interstate, intercounty and intercity agency which provides continuing, comprehensive and coordinated planning for the orderly growth and development of the Delaware Valley region. The region includes Bucks, Chester, Delaware, and Montgomery counties as well as the City of Philadelphia in Pennsylvania and Burlington, Camden, Gloucester, and Mercer counties in New Jersey. The Commission is an advisory agency which divides its planning and service functions between the Office of Executive Director, the Office of Public Affairs, and three line Divisions: Transportation Planning, Regional Planning, and Administration. DVRPC's mission for the 1990s is to emphasize technical assistance and services and to conduct high priority studies for member state and local governments, while determining and meeting the needs of the private sector.



The DVRPC logo is adapted from the official seal of the Commission 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 flowing through it. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey. The logo combines these elements to depict the areas served by DVRPC.

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

Publication Abstract

TITLE:	Date Published: July 1999
US 202 (Section 300) CONGESTION MANAGEMENT SYSTEM REPORT	Publication No.: 99014

Geographic Area Covered:

The US 202 (Section 300) corridor in Chester County, Pennsylvania.

Key Words:

US 202 (Section 300), Congestion Management System (CMS), traffic congestion, Intermodal Surface Transportation Efficiency Act (ISTEA), multi-modal strategies, 2020 corridors.

ABSTRACT

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.

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I. INTRODUCTION

US 202 stretches from Wilmington, Delaware to Bangor, Maine. In Pennsylvania, US 202 covers 61 miles, traversing four counties. It is a major commuter route and is a vital link for business and industry. For planning purposes, the Pennsylvania Department of Transportation (PennDOT) has divided US 202 into eight sections, primarily based upon roadway characteristics, traffic volumes and adjacent land use. Section 300 covers the stretch of roadway in Chester County between the US 30 interchange and North Valley Road.

Figure 1: Project Location Map

Section 300 is a four-lane, divided, limited access highway. Section 200, to the south, and Section 400, to the north, are also four-lane limited access facilities. Section 400 is currently in the midst of a multi-year improvement project that will add a travel lane in each direction and reconfigure interchanges. Section 300 travels through East Whiteland and Tredyffrin Townships in a high growth area of Chester County. At the southern limit of Section 300, US 30 splits into two roads – a four-lane principal arterial (Lincoln Highway) and a four-lane, limited access highway (Exton Bypass) – which link with US 202 at the same interchange. Other interchanges within Section 300 are located at PA 29 and PA 401, two major north-south routes in Chester County. Two other major thoroughfares, US 30 and Swedesford Road, generally parallel US 202 to the south and the north, respectively, providing alternative routes in this vicinity. SEPTA's R5 Regional Rail line to Center City Philadelphia or Downingtown runs adjacent to US 30. This portion of Chester County has undergone intense development over the past several decades and is home to several residential developments and large business parks, including Great Valley Corporate Center, which abut US 202.

Section 300 is subject to recurring traffic congestion and is predicted to become increasingly congested as a result of the recent opening of the Exton Bypass, improvements currently underway in US 202 (Section 400) and ongoing development and traffic growth affecting this portion of the region. PennDOT has proposed widening Section 300 to six lanes, adding a lane in each direction, to alleviate the bottleneck condition and congestion on US 202. The proposed project will widen approximately 6.7 miles of roadway, generally within the existing grass median, and modify several interchanges.

PennDOT employs a ten-step project development process for all major highway improvements in the Commonwealth. Its primary purpose is to establish standard statewide procedures that comply with various Federal Highway Administration (FHWA), National Environmental Protection Act (NEPA), and other regulatory requirements that need to be addressed when developing major transportation projects. CMS planning and commitments are an integral component of the ten-step process. This report functions as a documentation of the fulfilment of the requirements of the Congestion Management System (CMS). The report includes a review of CMS requirements and the regional CMS findings and a screening of appropriate congestion mitigation strategies. A project-level CMS analysis was performed and includes a needs assessment of the proposed widening and a set of recommended Transportation Control Measure (TCM) and Transportation Demand Management (TDM) commitments.

II. FEDERAL REQUIREMENTS

The Congestion Management System was established by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) to aid decision-makers in gauging system performance and needs, and selecting cost-efficient strategies and actions to improve and protect the investment in the nation's infrastructure. The Congestion Management System is defined in the federal regulations as a "systematic process that provides information on transportation system performance and alternative strategies to alleviate congestion and enhance the mobility of persons and goods". The federal guidance states that the CMS should evaluate and include strategies to reduce single occupant vehicle travel and improve the efficiency of the existing transportation infrastructure.

As of October 1, 1997, federal funds may not be programmed for any project that will result in a significant increase in carrying capacity of single occupant vehicles unless the project comes from a fully operational Congestion Management System. A project needs to be considered for inclusion in the CMS if it receives federal funds, is located in an air quality nonattainment area (the entire DVRPC region is designated a severe ozone nonattainment area) and results in the equivalent of one or more general purpose lanes in carrying capacity for single occupant vehicles. DVRPC, PennDOT and the Pennsylvania Division Office of the Federal Highway Administration have defined a significant capacity increase as a general purpose lane of a mile in length or longer. The Pennsylvania Congestion Management System Phase 2 Report, published by DVRPC in July 1997, serves as the operational CMS for the Pennsylvania portion of the DVRPC region.

III. THE DVRPC CMS FOR PENNSYLVANIA

DVRPC, in conjunction with its planning partners, developed the Congestion Management System for the Pennsylvania portion of the region in two phases. The first phase consisted of cataloging existing data and other information-gathering activities, identifying current and future congested facilities, and developing the CMS network. Phase 1 established a CMS network composed of

major highways and a passenger rail network. With over 13,000 miles of roads in the Pennsylvania portion of the region, a smaller network was required to focus attention and resources on the most critical transportation facilities for moving people and goods. The highway portion of the CMS network is based upon the following facility types:

- National Highway System (NHS) routes
- Congested principal arterials not on the NHS
- Streets with significant bus activity (200+ buses per day)
- Roads connecting the NHS with major passenger intermodal facilities and major freight intermodal facilities
- Roads impacted by special event generators (i.e., the sports complex or shore traffic)

The passenger rail network includes the following facilities:

- SEPTA's Regional Rail network
- SEPTA's Broad Street Subway, Market-Frankford Elevated, Norristown High Speed, and Media/Sharon Hill Light Rail lines
- PATCO High Speed Line
- Amtrak lines

Traffic congestion at the systems level (as opposed to spot or intersection congestion) for 1996 and 2005 was identified by a number of quantitative and qualitative methods including:

- Volume to capacity (V/C) ratios - derived from DVRPC's travel demand simulation model
- Development trends - by assessing 1996-2005 trip growth
- Discussions with county planning officials, PennDOT District 6-0 personnel, State Police, Metro Traffic, DVRPC's Goods Movement Task Force and Regional Citizens Committee (RCC)

The second phase identified causes of congestion and reviewed strategies to relieve congestion at the corridor level. The CMS corridors were based on the corridors established in DVRPC's *Year 2020 Long-Range Plan*. The *Year 2020 Long-Range Plan* serves as the official, adopted long-range plan for the metropolitan planning area. The Plan helps to direct regionwide transportation decision-making for the Delaware Valley over a period of twenty years. The Plan has a land use and a transportation element and is predicated on a decision-making process that incorporates a complete intermodal system of highway, public transportation, and alternative modes.

Each CMS corridor is typically organized around a major highway and parallel roads. Even though a corridor contains many other roads, and the CMS recommendations apply to the entire corridor, the primary focus is on the major highway(s). A total of 18 corridors were evaluated. To be more reflective of the transportation network, land use, and trip making patterns, corridors were divided

into subcorridors. In each subcorridor the location and severity of traffic congestion in the CMS network was evaluated along with the primary and secondary causes of congestion. Similarly, for the passenger rail network, all stations in the subcorridor were identified along with information on service frequency, parking availability, and connecting rail and feeder buses. This information is documented on individual corridor fact sheets and maps.

Over 50 improvement strategies were identified from a number of sources including the federal CMS regulations and PennDOT's guidance on single occupant vehicle capacity-adding (SOVCAP) projects. The strategies attempt to meet the three goals of the CMS: (1) easing traffic congestion through the reduction of single occupant vehicles; (2) optimizing the efficiency of existing transportation systems; and (3) improving access to and proficiency of the transportation network to relieve congestion and improve the mobility of goods and people. Conceptually, the strategies range from low-cost alternatives to driving, to moderate improvements to the transit and highway systems, and ultimately to significant SOV capacity improvements.

For each subcorridor, strategies were reviewed for applicability and effectiveness based upon the characteristics of the transportation network, the extent and cause of traffic congestion, and population, employment, and other characteristics inventoried in the *Year 2020 Plan* corridor analyses. A standard strategy matrix was developed that rated each strategy as either *very practical*, *practical* or *not practical* within a subcorridor. The criteria for evaluating practicality is shown below. After DVRPC's initial analysis, members of the Pennsylvania Subcommittee of the Regional Transportation Committee (RTC) and a subcommittee of the RCC made extensive modifications based upon their knowledge of and familiarity with the subcorridors.

CRITERIA FOR STRATEGY MATRIX EVALUATION

Very Practical
- Widely applicable
- Very effective
- Can be implemented by an appropriate agency with minimal difficulty

Practical
- Not widely applicable
- May not be fully effective for the subcorridor (i.e., employer-based ridesharing in a area that is primarily residential)
- Highly desirable yet entail some implementation obstacles

Not Practical
- Not applicable or effective
- Not feasible in terms of implementation

The detailed fact sheets and strategy matrices provide a comprehensive macro-level overview of the location and causes of congestion and improvement strategies. The corridor overviews summarize the existing transportation facilities in the subcorridors, the level of congestion and key causes, and presents a brief overview of the primary and secondary strategies to manage congestion. The *PA CMS Phase 2 Report* is considered a systems-level analysis because it examines generalized highway links and evaluates strategies that are applicable to larger areas. In the project development process the opposite is true; the focus is on a small study area. DVRPC revises the regional CMS by conducting corridor and project-level studies using performance measures to examine congestion levels and the effectiveness of improvement strategies. Periodically, amendments to the regional CMS will be issued reflecting these detailed studies.

Procedures for SOV Capacity-Adding Projects

The Pennsylvania Congestion Management System Phase 2 Report serves as the operational Congestion Management System for the Pennsylvania portion of the DVRPC region. It functions as a framework for future analysis. CMS analysis for specific locations or projects is performed where applicable using the guidelines set forth in the regional CMS. The *PA CMS Phase 2 Report* provides an initial assessment of the appropriateness of SOV widening within a particular corridor. Further study may be necessary to determine if SOV widening is warranted for a particular facility. Typically, a facility for which a SOV enhancement is proposed will be classified as congested in the *PA CMS Phase 2 Report*. However, there are a couple of conditions that preclude every congested facility from being identified. Because the *PA CMS Phase 2 Report* is a systems-level analysis, localized or spot congestion may not always be documented. Also, development is continuously affecting transportation facilities but not all future development is able to be accounted for in the travel demand simulation models. In many cases, DVRPC will perform an operations-level analysis, on roads for which SOV enhancement is proposed, to determine or verify if that facility is or will be congested.

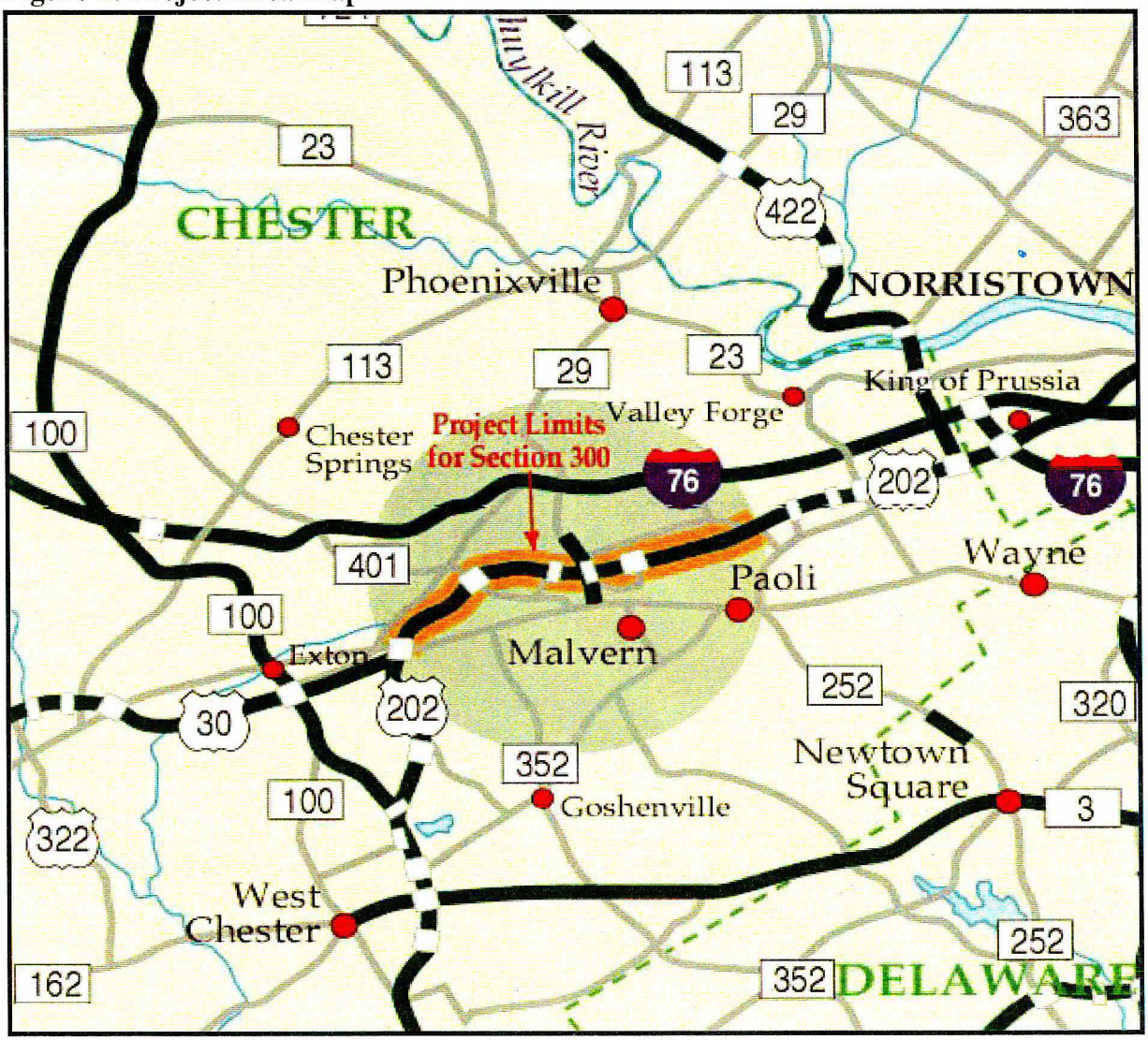
Generally, a project is said to result from the CMS if SOV widening is identified in the *PA CMS Phase 2 Report* as a practical strategy for the subcorridor. DVRPC will make a determination of whether a more detailed CMS study is required to identify appropriate travel demand reduction or operational management strategies. All regionally significant projects, such as US 202 (Section 300), which add a general purpose lane(s) of a mile in length or longer require further CMS study and commitments.

IV. PROJECT SETTING

US 202 (Section 300) is located within East Whiteland and Tredyffrin Townships in Chester County. The highway runs through the heart of an area that has and is projected to continue to undergo intensive development. Population within the corridor is estimated to increase by approximately 9%

between 1990 and 2020. Employment is forecast to surge by over 40% within the same time frame. The corridor is home to several large business parks, including Great Valley Corporate Center. The recently implemented Chester County Comprehensive Plan, *Landscapes: Managing Change in Chester County*, classifies the US 202 corridor as a Suburban Landscape with road capacity problems. The Comprehensive Plan calls for future development to be focused within existing Urban, Suburban and Suburban Center corridors. In particular, the Plan recommends "concentrating new residential development in Suburban Landscapes and concentrating industries and offices at locations adequately served by necessary infrastructure and accessible to employees". The Plan also establishes growth boundaries to curtail sprawl. US 202 (Section 300) lies within a growth boundary.

Figure 2: Project Area Map



US 202 (Section 300), and adjoining Sections 200 and 400, carry traffic between central Chester County and King of Prussia. King of Prussia is a major retail, office and transportation hub located at the confluence of the Pennsylvania Turnpike, Schuylkill Expressway, US 202 and US 422. Section 400 is currently being widened from four to six lanes and at the southern terminus, traffic is being channeled onto Section 300 from two limited access highways (the recently completed Exton Bypass and US 202 (Section 200)). Once improvements to Section 400 are complete, the result will be a physical and operational bottleneck within Section 300. PennDOT has proposed widening Section 300 from four to six lanes to eliminate the bottleneck condition and reduce congestion.

US 202 (Section 300) is a four-lane, limited access freeway traveling in an east-west direction through the study area and turning south at the southern limit of Section 300. Interchanges are located at US 30 (Bypass and Business Route), PA 401 and PA 29. PA 29 is served by two interchanges, one to the north and one to the south of PA 29. Route 202 is bordered by a variety of land uses. From US 30 to PA 401, adjacent land uses consist primarily of residential subdivisions, parks, and corporate office parks. From Route 401 to Swedesford Road, US 202 passes numerous residential subdivisions and many corporate office parks.

US 202 is the primary highway facility in the corridor. There are, however, a number of other key transportation facilities in the corridor, which are described below. A large number of the key roads listed below carry traffic to and from US 202. The majority of these roads are two-lane minor arterials that serve a large number of business parks, retail developments and residential subdivisions. As noted below, there are several open parcels bordering several roads, which given the rate of development in this area, will most likely be developed in coming years. Where available, Appendix C displays current and projected average daily traffic volumes for the roads referenced below.

US 30 - Exton Bypass is a four-lane, limited access freeway that opened to traffic in December 1995. This facility allows through traffic to bypass the retail development centered around US 30 Business and PA 100 in Exton. The road serves as a continuation of the Coatesville-Downingtown Bypass, thereby creating a continuous freeway link from western Chester County to US 202 and onward to the King of Prussia area.

US 30 Business - Lincoln Highway is an urban principal arterial running east-west, virtually parallel to Route 202 in most of the study area. US 30 Business is two lanes-by-direction with a center turn lane in the vicinity of the US 202 interchange. To the east and the west of the interchange, it is one lane-by-direction with a center turn lane. East of US 202, US 30 passes through mainly residential areas and downtown Paoli. Numerous roads intersect with US 30 in this section. Fairly high density, older suburban residential development flanks both sides of US 30 in Paoli and Malvern. US 30 also passes a hospital complex, a number of shopping centers, and several residential developments. West of US 202, the road primarily serves corporate office parks and shopping centers, including the Whiteland Business Park, the Exton Corporate Center and the

Oaklands Corporate Center. The Exton Square Mall and numerous smaller retail developments are located at the intersection of Route 100 and Business 30.

PA 401 is a north-south urban minor arterial, extending from US 30 to the Pennsylvania Turnpike and beyond. For most of its length, PA 401 is a non-divided, two-lane highway. It splits into a divided, four-lane highway at the US 202 interchange. Route 401 runs mainly through residential an undeveloped areas, and in between Routes 30 and 202, it is bordered mostly by subdivisions and the Great Valley Shopping Center.

PA 29, or Morehall Road, is a minor urban arterial running north from its intersection with US 30. En route to Phoenixville, it passes under the Pennsylvania Turnpike and meets Charlestown /Yellow Springs Road. PA 29 is five lanes wide at US 202 and through the Great Valley Corporate Center. South of US 202 and north of the Great Valley Corporate Center, PA 29 is a two-lane highway, with a center turn lane. PA 29 serves a number of corporate parks, including the Great Valley Corporate Center and the Valley Brook Corporate Center. Other adjacent properties include Penn State University at Great Valley Center and the Devault Industrial Park.

PA 352, or Sproul Road, is a minor urban arterial running southeast from an intersection with US 30. PA 352 is an undivided, two-lane highway for the entire section from US 30 to the Paoli Pike. PA 352 runs primarily through suburban residential areas, being bordered by numerous subdivisions between US 30 and the Paoli Pike.

Swedesford Road, primarily an undivided two-lane road, runs northeast-southwest, almost parallel to US 202. Swedesford Road expands into a four-lane, divided highway at the interchange with US 202 and near PA 29. Swedesford Road crosses US 202 twice, passing over near PA 29 and under near PA 252. It has access to US 202 at both these locations. Swedesford Road is classified as an urban collector passing through a variety of suburban areas, consisting mainly of residential subdivisions and corporate office parks.

I-76, the Pennsylvania Turnpike, is an Interstate Highway running east-west, about two miles north of US 30. It is a four-lane, divided toll road. The Turnpike carries through traffic and does not have any interchanges in the study area, even though slip ramps in the vicinity of PA 29 have recently been studied. The closest interchanges are Valley Forge to the east (near the terminus of US 202 (Section 400)) and PA 100 to the west.

SEPTA's R5 Regional Rail Line provides commuter rail service between Downingtown and Center City Philadelphia. This service parallels the Amtrak line between Philadelphia and Harrisburg and other points west. Both local and express service is provided. Headways for the AM and PM peak periods is approximately 20 minutes. Mid-day service is every 30 minutes and evening service is hourly. There is also comprehensive bus service within the corridor including several shuttle links between the R5 and employment centers.

V. FINDINGS OF THE *PENNSYLVANIA CMS PHASE 2 REPORT*

The *Pennsylvania CMS Phase 2 Report* found US 202 (Section 300) to be congested both now and in the future and recommends widening as a practical strategy. Due to its length, different sections of US 202 are covered by separate corridors in the *PA CMS Phase 2 Report*. Section 300 is part of the Coatesville to Center City corridor which highlights US 30 or, alternatively, US 30 to US 202 and I-76 between Coatesville and Center City. The contrasting nature of the US 30 routing, which is a suburban and urban principal arterial routing that travels through several small towns and business districts, and the US 30/US 202/I-76 routing, which is a limited access routing, results in very different causes of congestion and different strategy recommendations to alleviate the congestion. Therefore, the recommendations for this corridor tend to be very broad and inclusive in scope.

US 202 (Section 300) is part of the Exton to I-476 subcorridor and is projected to be congested for the length of the subcorridor by 2005. In 1996, congestion on US 202 reached as far south as PA 401. That is forecast to extend to US 30 by 2005. Congestion is more severe at the northern end of US 202 in both 1996 and 2005 with the segment between PA 29 and US 202 (Section 400) experiencing the most severe congestion in both years. Causes of congestion listed in the report include high traffic volume, a large number of business parks which exacerbate peak hour congestion, incidents and back-up queues caused by the King of Prussia Mall complex and the US 202/US 422/I-76 interchange complex - where US 202 changes from a limited access freeway to a suburban arterial at the junction of two expressways.

Strategies recommended in the *PA CMS Phase 2 Report* place a major emphasis on reducing vehicular trips in the subcorridor through measures such as park and ride lots, improvements to transit, and transportation demand management strategies. With a large population base, park and ride lots and transit improvements (i.e., increased parking at SEPTA stations, improved rail/bus coordination, and transit marketing) become very practical strategies. For the growing employment base in the subcorridor, TDM strategies, variable work hours, mode shift strategies (such as carpooling and guaranteed ride home programs), and transit service improvements to the business parks are recommended. For the arterial highways, such as US 30, traffic signal timing and coordination, closed loop signal systems and intersection improvements are appropriate. Incident management systems, construction management programs, ramp metering and traveler information services are relevant strategies to help manage traffic on freeways. SOV widening in the corridor is also considered a practical strategies for the limited access facilities. Table 1 shows the strategies which were identified as being *very practical* and *practical* within the subcorridor. The complete corridor overview, fact sheet and strategy matrix for the subcorridor are located in Appendix A. Appendix B contains definitions of the strategies evaluated in the *PA CMS Phase 2 Report*. The recommended strategies from the *PA CMS Phase 2 Report* serve as a starting point for the project-level strategy analysis.

Table 1: Very Practical and Practical Strategies from the *PA CMS Phase 2 Report*

VERY PRACTICAL STRATEGIES

CARPOOLING/VANPOOLING	TRAFFIC SURVEILLANCE AND CONTROL SYSTEMS
GUARANTEED RIDE HOME PROGRAMS	RAMP METERING
DEMAND RESPONSIVE TRANSIT SERVICES	COMPUTERIZED SIGNAL SYSTEMS
TRANSIT MARKETING	COORDINATION AND UPGRADE OF TRAFFIC SIGNALS
BICYCLE IMPROVEMENTS	INCIDENT DETECTION AND VERIFICATION
PARK AND RIDE FACILITIES	EMERGENCY RESPONSE TIME IMPROVEMENTS
TRANSPORTATION MANAGEMENT ASSOCIATIONS	ALTERNATE ROUTING TECHNIQUES
RIDE MATCHING	CONSTRUCTION MANAGEMENT
TELECOMMUTING	STAGGERED WORK HOURS AND FLEXIBLE WORK SCHEDULES
NEW TRANSIT SERVICE	COMPRESSED WORK WEEKS
BIKE IMPROVEMENTS AT SEPTA STATIONS	EXPANDED PARKING AT RAIL STATIONS
INTERSECTION AND ROADWAY WIDENING	TRAVELER INFORMATION SERVICES
CHANNELIZATION	

PRACTICAL STRATEGIES

PEDESTRIAN IMPROVEMENTS	TRAFFIC SIGNAL PREEMPTION
PROMOTION OF TRANSITCHEK	ELIMINATION OF BOTTLENECKS
PREFERENTIAL HOV PARKING	EXCLUSIVE RAIL OR BUS ROW
ACTIVITY CENTERS	ADVANCED MODE CHOICE SYSTEM
LAND USE POLICIES AND REGULATIONS	AUTOMATED TOLL COLLECTION
MEDIAN CONTROLS	SOV ROADWAY WIDENING
DRIVEWAY CONTROLS	

VI. PROJECT-LEVEL CMS ANALYSIS

Even though the *Pennsylvania CMS Phase 2 Report* found SOV widening to be warranted for the US 202 corridor, a project-level analysis was undertaken due to the scope of the project. The project-level analysis builds upon the results of the systems-level *PA CMS Phase 2 Report*. The first step in the project-level analysis is to verify the congestion documented in the systems-level analysis by performing a more refined travel demand simulation analysis. A needs assessment is also performed to determine if the project needs can be met by TCM and TDM strategies alone, without widening. If widening is warranted, a set of TCM and TDM strategies are selected as project commitments to reduce SOV travel and improve the efficiency of the existing transportation network.

Travel Demand Simulation

DVRPC projected future travel volumes within the study area using its travel demand simulation models. The travel simulation models at DVRPC follow the four traditional steps of trip generation, trip distribution, modal split, and travel assignment. The process utilizes computer programs included in the federally sponsored Urban Transportation Planning System (UTPS). The simulation process is comprised of the following steps:

- ***Trip Generation***—Trip generation is the first step in the modeling process. Person, truck, and taxi travel is generated from census tract-level estimates of households and employment through the use of trip rates disaggregated by trip purpose (home based work, home based non-work, non-home based), auto ownership, and area type (CBD, fringe, urban, suburban, rural, and open rural). Estimates of external and through highway and transit travel are developed from population and employment estimates in counties surrounding the Delaware Valley region. All data is drawn from the latest available sources or adopted policies.

- ***Trip Distribution***—Travel from census tracts within the region is allocated to destinations within the region with a gravity model. This model assumes that the propensity to travel to a destination tract increases with the attractiveness of the destination (as measured by employment) and decreases as the difficulty of traveling between zones increases. This travel impedance is measured by travel time and cost for both the highway and transit modes.

- ***Modal Split***—The modal split model divides the travel between census tracts within the region into transit and highway components. Generally, the propensity to use public transit increases with the relative transit-to-highway service levels. The relative service levels are estimated through highway and transit out-of-vehicle time and in-vehicle time, highway operating costs and parking charges, and transit fares. In addition, auto ownership, transit submode, household income, trip purpose, and the consumer price index further define the trip-maker's choice between highway and transit. A special model for auto occupancy determines the average

number of persons per automobile. This value is used to convert auto person trips to auto vehicle trips. Auto occupancy is estimated by trip purpose and trip length.

- ***Travel Assignment***—The final step in the process is to assign the estimated highway vehicle and transit person trips to specific facilities. This is accomplished by determining the best (i.e., minimum time and cost) route through the highway and public transit networks and allocating the travel to the transit facilities and highway facilities. Highway capacity is restrained in that congestion levels are considered in determining the best route.

Travel data generated by the DVRPC regional travel demand model has the following characteristics:

- Volumes of traffic are calculated on each link.
- Vehicle miles of travel (VMT) on each link is divided into 24 one-hour periods based upon fractions developed by DVRPC by functional class.
- Speeds are estimated through the use of curves relating volume to capacity ratios by functional class.
- Non-network travel is included and is distributed to subareas in proportion to arterial and local network travel.

Two design year alternatives, a Build and a No-Build scenario, were analyzed using the travel demand simulation models. Results were calculated for a design year of 2025. The design year reflects a twenty-year planning horizon based on a completion date of 2005 for the proposed improvements. The Build scenario assumes a third additional lane in each direction on US 202. The scenario also included regionally significant projects assumed to be completed by 2025 (i.e. the widening of US 202 (Section 400). The No-Build scenario included projects to be completed by 2025 but did not include a third lane-by-direction. The results were compared to current traffic counts to determine the effects of each of the alternatives. Table 2 shows the current and future AADT and peak hour volumes along US 202 (Section 300). Appendix C contains more detailed results from the travel demand simulation.

Table 2: Percent Increase in Traffic Volumes

Road	From	To	% Increase No-Build/Current	% Increase Build/No-Build
			AADT AM Peak PM Peak	AADT AM Peak PM Peak
US 202 Northbound	US 30	PA 401	44.8 31.1 52.1	15.0 13.7 20.2
US 202 Northbound	PA 401	PA 29	51.5 42.3 68.6	15.4 13.4 22.1
US 202 Northbound	PA 29	Howellville Road	45.3 55.4 32.7	16.3 16.0 22.3
US 202 Southbound	Howellville Road	PA 29	49.9 38.4 48.8	15.7 11.6 17.8
US 202 Southbound	PA 29	PA 401	50.5 68.5 35.1	17.1 18.0 16.9
US 202 Southbound	PA 401	US 30	47.1 28.2 15.3	16.6 15.7 16.7

Analysis of the model runs reveals that by 2025, average annual daily traffic (AADT) within Section 300 will increase by 45 to 50% in the no-build scenario over current levels. US 202 mainline volumes are projected to be higher in the Build compared to the No-Build scenario. The analysis shows that volumes on major parallel routes such as US 30 and Swedesford Road decrease in the build over the no-build scenario. There is a slight increase in volume on some roads in the vicinity of interchanges[1]. Peak hour volumes exhibit a similar pattern.

The travel demand simulation indicates an increase in volume in the Build scenario compared to the No-Build alternative and current traffic volumes. However, the level-of-service (LOS) analysis performed for US 202 shows that even though traffic volumes increase on the mainline freeway section, so does level-of-service in the Build alternative. This is primarily due to the increased

[1] A set of Traffic Operations Improvements are included in the list of Commitments. This set of projects has been developed to address the incremental increase in traffic volumes at certain interchanges and insure an improvement in traffic flow at those locations.

capacity of a third lane in each direction. In summary, the project-level travel demand simulation shows that this segment of US 202 is currently operating under congested conditions and that conditions will continue to deteriorate in the future under the No-Build conditions. The Build alternative shows an improvement in level-of-service over the No-Build alternative and a comparative level-of-service compared to current conditions, even though traffic volumes are estimated to be 50% higher. The analysis demonstrates that widening will reduce congestion in the future compared to a No-Build scenario. Table 3 presents the results of the level-of-service analysis.

Table 3: Freeway Mainline Level-of-Service

Road	From	To	AM Peak LOS	PM Peak LOS
			2025 Build 2025 No-Build 1998	2025 Build 2025 No-Build 1998
US 202 Northbound	US 30	PA 401	E F E	D E C
US 202 Northbound	PA 401	PA 29	E F E	C D C
US 202 Northbound	PA 29	Howellville Road	E F D	D E D
US 202 Southbound	Howellville Road	PA 29	E F D	D E D
US 202 Southbound	PA 29	PA 401	C D C	E F E
US 202 Southbound	PA 401	US 30	C D C	E F F

Needs Assessment

An appropriate set of TCM and TDM strategies was reviewed to determine if they met the needs of the project and would thereby eliminate the need for widening. The analysis, performed by DVRPC staff, evaluated strategies ranked *very practical* and *practical* in the *Pennsylvania Congestion Management System Phase 2 Report*. Other evaluated strategies came from the US 202 (Section 400) CMS analysis and recommendations from DVRPC's Regional Citizens Committee.

Table 4 presents the results of the needs assessment portion of the CMS analysis, including the practicality ranking in the *PA CMS Phase 2 Report*. Each of the 16 selected categories of strategies was reviewed for its ability to independently meet the project needs, the maximum potential of a full implementation of the strategy and the estimated potential in the US 202 (Section 300) corridor. Generally, the maximum potential reflects the upper limit of success that each strategy has achieved in nationwide case studies. The estimated achievable reduction is based on local circumstances such as the amount of transit service currently in the study area and the magnitude of the proposed improvements.

The potential reduction in vehicle miles traveled was based primarily upon case studies and data reported in *Costs and Effectiveness of Transportation Control Measures: A Review and Analysis of the Literature* (January 1994) prepared by Apogee Research for the National Association of Regional Councils. Additional data was supplied by *Transportation Control Measures: An Analysis of Potential Transportation Control Measures for Implementation in the Pennsylvania Portion of the DVRPC Region* (May 1994) performed by COMSIS for DVRPC. The case study evaluation was supplemented with professional staff experience and judgement.

Categories of strategies are more inclusive for the purpose of the needs assessment than in either the review of commitments or the *PA CMS Phase 2 Report*. For instance, in the needs assessment, "Transit Service/Operations Improvements" category includes a broad array of transit-related strategies ranging from new transit route(s) to better transit coordination. However, for purposes of the *PA CMS Phase 2 Report* and the commitments review, each of these strategies was considered separately. This consolidation of strategies was necessary because many of the nationwide case studies applied in the needs assessment, are predicated upon broader, more inclusive categories of improvement types.

The needs assessment revealed that none of the analyzed strategies is able to meet the increased travel demand forecast for this section of US 202 in the design year of 2025. Furthermore, even cumulatively, the strategies are still not able to meet the 45 to 50% increase in daily VMT forecast for Section 300. Accordingly, the needs assessment concludes that CMS-type strategies are not able to meet the additional travel demand in the corridor and widening is warranted as a means to reduce congestion and eliminate the bottleneck condition in this corridor. This finding is augmented by the inclusion of the proposed widening in several transportation and land use plans, including the DVRPC *Year 2020 Long Range Plan* and the *PA CMS Phase 2 Report*. The Chester County Comprehensive Plan, *Landscapes*, also identifies the project need and has classified this section of US 202 as being within a growth boundary in an area targeted for further development.

TABLE 4: ADEQUACY TEST OF CMS STRATEGIES TO MEET PROJECT NEEDS

Strategy	Strategy Independently Meets Project Purpose and Need	Applicability of Strategy within Corridor in *PA CMS Phase 2 Report*	Estimated Potential % Reduction in Daily VMT in 2025	
			Maximum Potential	Estimated Achievable Reduction of US 202 Section 300 Traffic
Transit service/operations improvements	No	Very Practical	1.0	0.5
Traffic signal preemption	No	Practical	0	0
Telecommuting Staggered work hours/flexible work schedules	No	Very Practical	1.9	0.9
Carpooling/vanpooling facilities, Areawide ridesharing programs	No	Very Practical	0.4	0.2
Employer-based travel demand management (preferential HOV facilities, guaranteed ride home, demand responsive transit)	No	Very Practical	1.0	1.0
Transportation Management Associations	No	Very Practical	Included with other strategies	Included with other strategies
Bicycle facilities/programs	No	Very Practical	0.1	0.1
Pedestrian facilities/programs	No	Practical	0.04	0
Public relations, education, behavior modification	No	Very Practical	Included with other strategies	Included with other strategies
Park and ride	No	Very Practical	0.5	0.2
Operational and traffic flow improvements (TSM)	No	Very Practical	0	0
Ramp metering	No	Very Practical	0.1	0.1
Intelligent Transportation Systems / Incident Management	No	Very Practical	0	0
Land use planning Activity centers	No	Practical	5.2	1.5
High Occupancy Vehicle (HOV) treatments	No	Not Practical	1.4	0.2
Parking management	No	Not Practical	3.0	0.2
TOTAL			15%[2]	5%[2]

[2] The estimated total reduction in daily vehicle miles traveled may be greater or less than the summation of the individual benefits because many strategies have either a synergistic effect or draw on a common potential.

VII. CMS COMMITMENTS

Although the needs assessment found that CMS-type strategies will not be able to meet the needs of the project, federal regulations and good planning practice call for such strategies to be incorporated with the project construction. This is done primarily to prolong the usefulness of the SOV enhancements but also introduces alternative means of transportation and enhances mobility in the corridor.

DVRPC met with representatives from PennDOT, SEPTA, the Transportation Management Association of Chester County (TMACC), Greater Valley Forge Transportation Management Association (GVFTMA), Chester County, and adjacent municipalities to evaluate and select appropriate strategies to implement with project construction. This group evaluated strategies recommended in the *PA CMS Phase 2 Report*, as well as selected programs from US 202 (Section 400) and recommendations from DVRPC's Regional Citizens Committee. Combined with the existing corridor-wide CMS-type improvements, the US 202 (Section 300) commitments will serve to make the US 202 corridor one of the most intermodally-integrated in the region.

Several travel demand strategies and transportation control measures are already in place within the corridor. Two active Transportation Management Associations, TMACC and GVFTMA, serve the corridor. They provide a wide array of services to their members, including shuttle services, carpool programs with guaranteed ride home and a carry out a vigorous public education and information campaign. Many additional CMS strategies will be constructed or put into operation as a result of the US 202 (Section 400) improvement project. Three new park and ride lots will be constructed to complement seven facilities recently opened. Additionally, parking is being expanded at two R5 stations and a new station is being constructed at Thorndale with 450 parking spaces. The Chester Valley Trail, to be constructed between Norristown, in Montgomery County and Exton, Chester County, will provide an ideal bicycle commute. Bike lockers are also being installed at five R5 stations within the corridor. Several new transit services are being added as part of the commitments for US 202 (Section 400). Two feeder/connector routes will operate between the SEPTA R5 line and employment sites. Additionally, several runs are being added to the R5 in order to increase frequency and duration of service. If they are successful during the construction of the Section 400 improvements their operation will be continued.

Specific commitments for Section 300 include expanding parking at two additional rail stations within the corridor. Bike lockers will be installed at the three remaining stations that are without them. A community circulator bus route will be initiated in West Whiteland Township. Other transit enhancements include an additional early morning run on the R5 line and mid-day and late evening service on Route 206. There will also be traffic operations improvements and Intelligent Transportation System (ITS) and Incident Management System components included in the final design of the Section 300 construction project. The DVRPC ITS Task Force is currently prioritizing ITS strategies for the region.

Table 5 lists CMS-type strategies which are already in place in the area and additional CMS commitments for US 202 (Section 300). Estimated costs have been developed for the commitments and are shown in Table 6. The commitments represent approximately $8.3 million in capital costs and $2.0 million in annual operating costs. The total costs for CMS commitments is considerably higher, however, since several strategy costs are included in the project construction budget (i.e., ITS and some traffic operations improvements) while others are included in separate work programs (i.e., efforts by the TMAs and DVRPC). Strategies which apply an annual cost figure anticipate a 2¼ year construction period.

The DVRPC Board adopted the CMS programs and commitments for US 202 (Section 300) at its June meeting. The Board resolution, contained in Appendix D, certifies that the US 202 (Section 300) Improvement Project results from a fully operational Congestion Management System and declares the Board's support of the recommended congestion mitigation strategies as a complement to the SOV enhancements.

TABLE 5
US 202 (Section 300)
CMS PROGRAMS AND COMMITMENTS

Strategy	Committed Area-Wide Programs Associated with Corridor *(Project Sponsor)*	Additional Commitments Associated with US 202 (Section 300) Improvement Project *(Project Sponsor)*
Transportation Management Associations (TMAs)	The TMA of Chester County (TMACC) and Greater Valley Forge TMA (GVFTMA) work closely with government and the business community to find solutions to relieving congestion and commute alternatives. *(TMACC, GVFTMA, and PennDOT)*	TMACC and GVFTMA will concentrate on expanding their programs within the US 202 corridor. PennDOT will continue to support the TMAs through the project's construction period. *(TMACC, GVFTMA, and PennDOT)*
Carpooling/Vanpooling, Areawide Ridematching Programs and Incentives	TMACC and GVFTMA provide assistance in setting up car and vanpools and provide a ridematching service in conjunction with DVRPC. *(TMACC, GVFTMA, DVRPC, and PennDOT)*	DVRPC will initiate corridor-specific Share-A-Ride program for the US 202 corridor. TMACC and GVFTMA will assist in matching both employees and individuals. PennDOT will erect signs promoting the ridesharing program. *(TMACC, GVFTMA, DVRPC, and PennDOT)*
Flexible Work Schedules, Compressed Work Weeks, and Telecommuting	TMACC and GVFTMA provide information and assistance to employers who are looking to set up alternative work schedules or a telecommuting program. *(TMACC, GVFTMA, and PennDOT)*	TMACC and GVFTMA will make a concerted effort to help employers in the corridor set up flexible work schedules and telecommute programs. PennDOT will continue assistance to the TMAs through the construction period. *(TMACC, GVFTMA, and PennDOT)*
Park and Ride	Park and ride lots have recently opened or are being constructed at US 202 & US 30 (125 spaces), US 202 & PA 29/Matthews Rd. (100 spaces), US 202 & S. Gulph Rd., US 202 & Paoli Pk. (60 spaces), PA 113 & PA 100 (37 spaces), I-476 & Matsonford Rd. (60 spaces), US 422 & Lewis Rd. (88 spaces), PA 100 & US 30/Exton Bypass Interchange at the Exton Station (116 spaces), US 1 & PA 272 (15 spaces), and US 1 & PA 472 (15 spaces) *(PennDOT)*	Expand park and ride lot capacity by examining potential of an additional park and ride lot north of Section 300 to serve southbound traffic. Also evaluate areas to the south and west of the study corridor for future consideration. *(PennDOT)*
Bicycle Improvements	Construction of Chester Valley Trail from Norristown, Montgomery County to Exton, Chester County *(PennDOT, Chester and Montgomery County, West Whiteland, East Whiteland, Tredyffrin and Upper Merion Twps)*	Pursue feasibility of Chester Valley Trail Phase III from Exton to Downingtown dependent upon ability to include in PennDOT's Twelve Year program. Also evaluate feasibility of enhanced pedestrian/ bicycle connections in the vicinity of Church Rd. *(PennDOT, Chester County)*
Bicycle Improvements at Rail Stations	Installation of bike lockers at five R5 stations *(SEPTA, PennDOT, Chester County)*	Install bike lockers at Exton, Whitford and Thorndale stations. *(SEPTA, PennDOT, Chester County)*
New Transit Service	Initiation of bus route serving reverse commute market between Paoli station and Frazer, Exton and Lionville, including mid-day service. Subscription "Cruise Line"intercorporate shuttle service between rail stations, park and ride lots and employment sites. *(SEPTA, PennDOT, Chester County, TMACC, GVFTMA, Twps.)*	Initiate West Whiteland Community Circulator service. Explore feasibility, and if warranted, initiate connector route from Goshen Corporate Parks and West Chester University to Paoli train station *(SEPTA, PennDOT, Chester County, TMACC, GVFTMA, Twps.)*

TABLE 5
US 202 (Section 300)
CMS PROGRAMS AND COMMITMENTS

Strategy	Committed Area-Wide Programs Associated with Corridor *(Project Sponsor)*	Additional Commitments Associated with US 202 (Section 300) Improvement Project *(Project Sponsor)*
Transit Service Enhancements	"Thorndale Limited" R5 service utilizing new Thorndale station Hourly outbound R5 service between Malvern and Thorndale Provision of late AM peak R5 run from Thorndale to Center City Additional late night R5 run from Center City to Thorndale Re-time Route 92 to connect with trains at Paoli station en-route to Westlakes, Chesterbrook Corporate Center and King of Prussia Renovation of Paoli Transportation Center *(SEPTA, PennDOT, Chester County)*	Early morning R5 train from Philadelphia to Thorndale to serve reverse commute Provide midday and late evening service on Route 206 *(SEPTA, PennDOT, Chester County)*
Demand Responsive Transit Services	A demand responsive transit system linking Oxford and Coatesville to Exton. *(TMACC, SEPTA, Chester County, DVRPC, SEPTA)*	Evaluate extension of service to Great Valley based upon demand *(TMACC, SEPTA, Chester County, DVRPC, PennDOT)*
Expand Parking at Rail Stations	Work undertaken as part of US 202 (Section 400) construction includes expansion of parking at Malvern by 70 spaces; at Whitford by 130 spaces; and construction of a new station at Thorndale with 450 spaces. *(SEPTA, PennDOT, Chester County)*	Pave the gravel lot at Malvern which will yield approximately 50 additional spaces. Continue working with private developer to provide additional amenities at Exton station, including 100 additional spaces. *(SEPTA, PennDOT, Chester County, West Whiteland Twp.)*
Traffic Operations Improvements to Existing Facilities	PennDOT's 12 Year Program and on-going corridor-related roadway, intersection and signal improvements by Townships *(PennDOT, Tredyffrin and East Whiteland Twps.)*	A set of projects (i.e. traffic signal coordination, intersection widenings, ramp improvements) that will have an impact on traffic flow on US 202 (Section 300). *(PennDOT, Tredyffrin and East Whiteland Twps.)*
Intelligent Transportation Systems (ITS) Incident Management System (IMS)	None	ITS and IMS initiatives, such as closed circuit television cameras, variable message signs, highway advisory radio and loop detectors, will be considered in Section 300 final design. *(PennDOT)*
Public Relations and Education Programs	News releases and traffic operational brochures will be prepared during the various phases of the US 202 (Section 400) improvement project as part of PennDOT's construction management program. *(PennDOT, TMACC, GVFTMA)*	News releases and traffic operational brochures will be prepared during the various phases of the project as part of PennDOT's construction management program. Specific elements will include brochures, public information video, transit marketing and advertising campaign, employer expos, website development and toll-free hotline. *(PennDOT, TMACC, GVFTMA)*
Pedestrian Improvements	PennDOT will provide sidewalks as part of new bridge structures constructed as part of the US 202 (Section 400) improvement project where municipalities are committed to future sidewalks. *(PennDOT, Tredyffrin and Upper Merion Twps.)*	Work with private developer to provide a pedestrian overpass at US 30/PA 100 to provide pedestrian access to the Exton station from the west side of PA 100. *(West Whiteland Twp.)*

TABLE 5
US 202 (Section 300)
CMS PROGRAMS AND COMMITMENTS

Strategy	**Committed Area-Wide Programs Associated with Corridor** *(Project Sponsor)*	**Additional Commitments Associated with US 202 (Section 300) Improvement Project** *(Project Sponsor)*
Land Use Planning Activity Centers	Tredyffrin and East Whiteland Townships zoning and comprehensive plan. Chester County *Landscapes* comprehensive plan *(Townships, Chester County)*	Continuation of county and municipal planning initiatives. Proceed with zoning analysis to intensify land use in vicinity of new Paoli Transportation Center. *(Tredyffrin and Willistown Townships, Chester County)*
Parking Management	None	TMACC and GVFTMA will pursue a voluntary parking management program in the corridor. Businesses that need additional parking will be able to utilize spaces at sites with excess capacity rather then constructing new spaces. *(TMACC, GVFTMA)*

Note: Several commitments to be implemented as part of US 202 (Section 300) are extensions of strategies first implemented during the construction of US 202 (Section 400). Their continuation is contingent upon the performance and success of strategies initiated during the construction of US 202 (Section 400). If strategies or services are not successful they will not be continued.

Table 6 - US 202 (Section 300) Summary of Costs for CMS Commitments

Strategy	Cost
Transportation Management Associations (TMAs)	Included in TMA of Chester County (TMACC) and Greater Valley Forge TMA (GVFTMA) work programs.
Car/Vanpooling Areawide Ridematching Program	Included in DVRPC, TMACC and GVFTMA work programs.
Flexible Work Schedules, Compressed Work Weeks and Telecommuting	Included in TMACC and GVFTMA work programs.
Park and Ride	To be determined on a site-by-site basis.
Bicycle Improvements	To be determined based upon inclusion in PennDOT's Twelve Year Program.
Bicycle Improvements at Rail Stations	$40,000
New Transit Service	$800,915 (Annual Operating Cost) Includes West Whiteland Community Circulator, service between Paoli and Goshen/WCU, and continued operation of Route 204 and "Cruise Line" intercorporate subscription service.
Transit Service Enhancements	$1,045,000 (Annual Operating Cost) Includes early-morning R5 service, mid-day and evening Route 206 service, and continued operation of R5 service improvements implemented during US 202 (Section 400) construction.
Demand Responsive Transit Service	None associated with this strategy until ridership is substantiated.
Expand Parking at Rail Stations	$2,300,000
Traffic Operations Improvements to Existing Facilities	$6,000,000 - For ancillary, off-site intersection improvement projects (i.e., added turn lanes and traffic signal improvements) that may be necessary within the lifetime of the US 202 (Section 300) project. {Note: Projects within the US 202 Right-of-Way (i.e. improvements at ramp intersections) are included in Section 300 construction cost estimate.}
Intelligent Transportation Systems Incident Management System	Included in US 202 (Section 300) construction cost.
Pedestrian Improvements	To be determined once design and engineering work is completed by developer.
Public Relations and Education Programs	$164,859 per year.
Land Use Planning/Activity Centers	None associated with this strategy.
Parking Management	Included in TMACC and GVFTMA work programs.
TOTAL**	**$8,340,000** — Capital Program Costs **$2,010,774** — Annualized Operating Costs

* Estimated total operating costs for transit service does not account for off-setting fare box revenues which SEPTA estimates to be 25% of operating costs.

** Costs are estimates provided for planning purposes. Actual costs may vary.

APPENDIX A

Pennsylvania Congestion Management System Phase 2 Report

Corridor 3: Coatesville to Center City
Subcorridor C: Exton to I-476

I. Corridor Overview and Map
II. Fact Sheet
III. Strategy Matrix

I. CORRIDOR OVERVIEW

CORRIDOR 3: COATESVILLE TO CENTER CITY
SUBCORRIDOR C: EXTON TO I-476

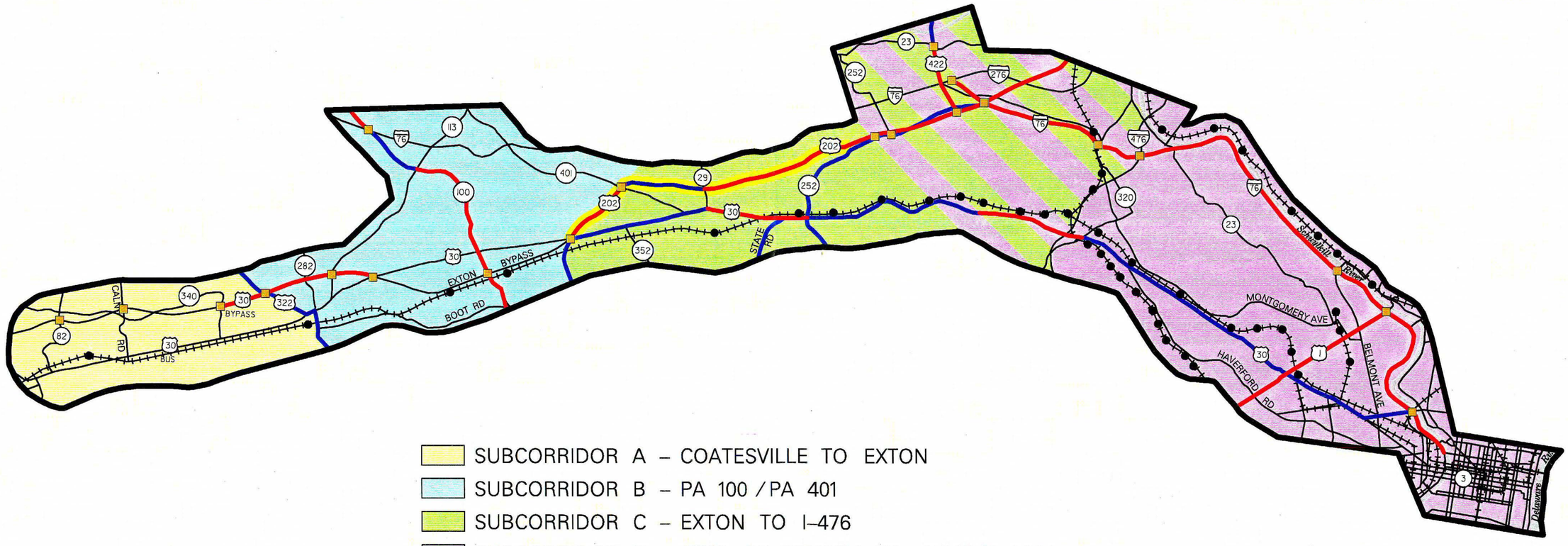
HIGHWAY FACILITIES - US 202 and US 30 define this segment of the corridor. US 202 links Exton to I-76 and King of Prussia. It is a four-lane expressway from West Chester to I-76 where it becomes a suburban arterial. The major congestion spot on US 202 is the I-76/US 202/US 422 Interchange complex located in King of Prussia. Paralleling US 202 is US 30, a four-lane suburban arterial with considerable roadside development. Unlike US 202, which passes through King of Prussia and turns northward, US 30 turns southward towards Philadelphia encompassing much of the Main Line within the subcorridor. Some of the major crossroads include PA 352, PA 401, PA 29, Paoli Pike/State Road, PA 252, Swedesford Road, US 422, and I-76.

TRANSIT FACILITIES - SEPTA's R5 Regional Rail Line, which parallels US 30, is the most significant transit facility in the subcorridor. Bus service is generally limited to US 30, PA 252/Swedesford Road, and the King of Prussia area.

TRAFFIC CONGESTION - By 2005, the entire length of US 202 will be operating under congested conditions. From PA 252 to the King of Prussia Mall, US 202 presently operates with severe congestion due to heavy traffic volumes (from both through traffic and local movements destined to the King of Prussia Mall and the many business parks) and interchange deficiencies at the I-76/US 202/US 422 Interchange. The interchange also results in daily backups on I-76 and US 422. US 30 experiences chronic congestion due to traffic signal timing and coordination problems, turning movements, strip development, and on-street parking and pedestrian movements in the older boroughs.

IMPROVEMENT STRATEGIES - A major emphasis in this subcorridor is the reduction of vehicular trips through park and ride lots, improvements to transit, and TDM-type strategies. With a large population base, park and ride lots and transit improvements (i.e., increased parking at SEPTA stations, improved rail/bus coordination, and transit marketing) become very practical strategies. For the enormous employment base in the subcorridor, TDM strategies, variable work hours, mode shift strategies (such as carpooling and Guaranteed Ride Home programs), and transit service improvements to the business parks become viable strategies. For the arterial highways, such as US 30, traffic signal timing and coordination, closed loop signal systems, and intersection improvements were identified. A SOVCAP analysis of US 202, including the US 202/US 422/I-76 Interchange, has demonstrated that a SOV capacity increase is required. Additional SOV widenings in the corridor are also considered a practical strategy. Incident management systems, construction management programs, ramp metering, and traveler information services are relevant strategies to help manage traffic on US 202, I-76 and US 422.

PENNSYLVANIA CONGESTION MANAGEMENT SYSTEM PHASE 2 REPORT
CORRIDOR 3 – COATESVILLE TO CENTER CITY



- SUBCORRIDOR A – COATESVILLE TO EXTON
- SUBCORRIDOR B – PA 100 / PA 401
- SUBCORRIDOR C – EXTON TO I–476
- SUBCORRIDOR D – KING OF PRUSSIA TO CENTER CITY

- US 202 (SECTION 300) PROJECT LIMITS
- SEVERE CONGESTION
- MODERATE CONGESTION
- INTERCHANGE
- RAIL STATION

0 1 2 3
MILES

PREPARED BY
DELAWARE VALLEY REGIONAL PLANNING COMMISSION

II. FACT SHEET

CORRIDOR 3: COATESVILLE TO CENTER CITY SUBCORRIDOR C: EXTON TO I-476				
ROAD	CONGESTED LOCATIONS S=Severe M=Moderate 1996	 2005	CAUSE OF CONGESTION	AADT IN SUBCORRIDOR
US 202	PA 401 to PA 29 (M) PA 29 to Subcorridor Limit (S)	Subcorridor Limit to PA 29 (M) PA 29 to Subcorridor Limit (S)	• I-76/US 202/US 422 Interchange • High Traffic Volumes • King of Prussia Mall Complex • Business Parks • Incidents	46,900- 62,600
US 30	US 202 to Devon State Road (M) Conestoga Road to Subcorridor Limit (S)	US 202 to PA 29 (M) PA 29 to PA 252 (S) PA 252 to Conestoga Road (M) Conestoga Road to Subcorridor Limit (S)	• Traffic Signal Timing and Coordination • Roadside Development • Turning Movements • Roadside Commercial Development • On-Street Parking • Pedestrian Activity	18,200 - 24,500
PA 252	None	Subcorridor Limit to US 202 (M)	• Intersections	11,200 - 23,400
I-76	PA Turnpike to Gulph Road (S) Gulph Road to Subcorridor Limit (M)	PA Turnpike to Subcorridor Limit (S)	• I-76/US 202/US 422 Interchange • High Traffic Volumes • King of Prussia Mall Complex • Business Parks	83,500

CORRIDOR 3: COATESVILLE TO CENTER CITY SUBCORRIDOR C: EXTON TO I-476				
ROAD	**CONGESTED LOCATIONS** S=Severe M=Moderate **1996**	**2005**	**CAUSE OF CONGESTION**	**AADT IN SUBCORRIDOR**
US 422	Subcorridor Limit to PA 23 (M) PA 23 to US 202 (S)	Subcorridor Limit to PA 23 (M) PA 23 to US 202 (S)	• I-76/US 202/US 422 Interchange • PA 363/PA 23 Interchange Complex • High Traffic Volume • King of Prussia Mall Complex • Business Parks	N/A
State Road	None	Subcorridor Limit to US 30 (M)	• Turning Movements • Traffic Signal Timing and Coordination	N/A
RAIL LINE/INTERMODAL FACILITIES INVENTORY		**PARKING SPACES**	**% PARKING UTILIZATION**	**INTERMODAL CONNECTIONS**
R5 Paoli Line: 10-25 Minutes Peak Headway / 30 Minutes Off-Peak Headway				
Malvern		146	97%	1 Bus Route
Paoli		479	98%	5 Bus Routes
Daylesford		147	100%	1 Bus Route
Berwyn		132	94%	1 Bus Route
Berwyn Church		26	12%	1 Bus Route
Devon		272	93%	1 Bus Route
Strafford		236	97%	1 Bus Route
Wayne		210	90%	1 Bus Route
St. Davids		57	84%	1 Bus Route
Radnor		162	62%	1 Bus Route

III. STRATEGY MATRIX

CORRIDOR 3: COATESVILLE TO CENTER CITY Subcorridor C: Exton to I-476			
STRATEGY	Appropriateness Within Subcorridor		
	Very Practical	Practical	Not Practical
GOAL 1: EASE TRAFFIC CONGESTION THROUGH THE REDUCTION OF SOV's			
MODE SHIFT			
Carpool/Vanpool	X		
Guaranteed Ride Home Programs	X		
Paratransit Services	X		
Transit Marketing	X		
Pedestrian Improvements		X	
Transit First Policy			X
Promotion of TransitChek		X	
Bicycle Improvements	X		
Park & Ride	X		
CONGESTION PRICING			
Increased Peak Tolls			X
Parking Rate Adjustments			X
PARKING MANAGEMENT			
Parking Regulations/Ordinances			X
Enforcement			X
Restrict New Parking Facilities			X
Preferential HOV Parking		X	
Parking Supply Adjustment			X
HOV TREATMENTS			
HOV Lanes			X
HOV/Ramp Bypass Lanes			X
HOV Toll Savings			X
TDM			
TMAs	X		

CORRIDOR 3: COATESVILLE TO CENTER CITY Subcorridor C: Exton to I-476			
	Appropriateness Within Subcorridor		
STRATEGY	Very Practical	Practical	Not Practical
Ride Matching	X		
Telecommute	X		
GROWTH MANAGEMENT			
Activity Centers		X	
Land Use Policies/Regulations		X	
GOAL 2: OPTIMIZE EFFICIENCY OF EXISTING TRANSPORTATION SYSTEMS			
ACCESS MANAGEMENT			
Median Control		X	
Driveway Controls		X	
Frontage Roads			X
TRANSIT SERVICE/OPERATIONS IMPROVEMENTS			
Traffic Signal Preemption		X	
Transit Coordination	X		
New Transit Service	X		
Bicycle Improvements at SEPTA Stations	X		
Transit Enhancements/Expansion	X		
TRAFFIC OPERATIONS IMPROVEMENTS			
Intersection & Roadway Widening	X		
Channelization	X		
Traffic Surveillance & Control Systems	X		
Ramp Metering	X		
Computerized Signal Systems	X		
Elimination of Bottlenecks		X	
Coordinate & Upgrade Traffic Signals	X		
One-Way Streets			X
Vehicle Use Limitations/Restrictions			X
INCIDENT MANAGEMENT			
Incident Detection/Verification	X		

CORRIDOR 3: COATESVILLE TO CENTER CITY Subcorridor C: Exton to I-476			
	Appropriateness Within Subcorridor		
STRATEGY	**Very Practical**	**Practical**	**Not Practical**
Emergency Response Time Improvements	X		
Alternative Routing Techniques	X		
Construction Management	X		
ALTERNATIVE WORK HOURS			
Staggered Work Hours Flexible Work Schedules	X		
Compressed Work Weeks	X		
GOAL 3: IMPROVE ACCESS AND PROFICIENCY OF TRANSPORTATION NETWORK TO RELIEVE CONGESTION AND IMPROVE MOBILITY OF GOODS AND PEOPLE			
TRANSIT CAPITAL IMPROVEMENTS			
Exclusive ROW Rail/Buses		X	
Expand Parking at Rail Stations	X		
Restore Regional Rail Service			X
INTELLIGENT TRANSPORTATION SYSTEMS			
Intelligent Bus Stops			X
Advanced Mode Choice System		X	
Automated Toll Collection		X	
Traveler Information Services	X		
Commercial Vehicle Operations			X
GENERAL PURPOSE LANES			
SOV Roadway Widening		X	

APPENDIX B

Definitions of CMS Strategies Included in the *PA CMS Phase 2 Report*

MODE SHIFT

Efforts that encourage changes in travel behavior, removes people from single occupant vehicles and involves an alternative mode of travel that would either eliminate or shorten a SOV trip.

Car/Vanpool

A shared ride program in which employers encourage workers to travel to the work site with others who work in the vicinity. This may include workers from the same or different companies commuting together. Employer support can be in the form of ridematching services, support of a transportation management association (TMA) to provide ridematching services, provision of vehicles, or flexible work schedules for commuters who car/vanpool. Most appropriate to subcorridors with large employment concentrations.

Guaranteed Ride Home

Serves as a safety net for employees who car/vanpool or use transit service by providing a reliable back-up ride to get them to their destination if an emergency arises. Options include: taxis, short-term auto rental, company fleet vehicle, shuttle service, back-up car/vanpool, limousines and public transit.

Paratransit Services

Demand responsive transportation usually using smaller vehicles (i.e., vans, 30-foot buses, or taxis) to supply transportation in areas where transit demand is not great. The route traveled is not fixed but instead is determined by demand. Service could be provided by an employer using existing company fleet, local transit authority or a TMA.

Transit Marketing

Increased efforts to make the public aware of the benefits of utilizing available transit services (i.e., a speaker's bureau, promotional items, rider newsletters, transit education programs, press releases, and paid advertisements). Applicable to employment and residential areas.

Pedestrian Improvements

Generally, capital improvements that make pedestrian travel safer and easier. Examples include sidewalk improvements, and signals and markings giving pedestrians the right-of-way. Suitable for business districts, older communities, and newer retail/business centers.

"Transit First" Policy

Development, implementation and enforcement of policies which give preferential treatment to transit, thereby making it more attractive than single occupant vehicle travel. Priority on certain streets is given to transit vehicles and accomplished through street design, traffic engineering methods, and the stringent enforcement of traffic and parking regulations. Appropriate to areas with high transit accessibility and service levels.

Promotion of TransitChek

TransitChek is a benefit that employers purchase in the form of vouchers and distribute to their employees. Employees submit the voucher, available in various denominations, to a transit provider for the vouchers's face value worth of transit service (i.e., monthly pass, tokens or ticket). Employers may use the cost of the program as a tax-deduction while employees receive a tax-free benefit. Appropriate to areas with high transit accessibility and service levels.

Bicycle Improvements

Provision of bike lanes, bike paths, and bicycle storage facilities to promote bicycles as an alternative to automobiles.

Park and Ride Lots

Facilities which serve as a transfer terminal for single occupant vehicles and bikes. May be served by public transportation or can be used for transferring to carpools or vanpools.

CONGESTION PRICING

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. These are strategies that charge variable user fees and assess higher fees during the periods of greatest demand.

Increased Peak Tolls

Variable user fees charged on toll facilities with higher fees assessed during the periods of greatest demand.

Parking Rate Adjustments

Vehicles entering and/or utilizing parking facilities during peak hours are assessed a higher rate than users during off-peak hours. May also include increased parking charges for SOVs and reduced or eliminated parking charge for car/vanpool users.

PARKING MANAGEMENT

Actions taken to alter the supply, operation, and/or demand of a parking system to further the attainment of local transportation objectives.

Parking Regulations and Ordinances

Enactment of laws to regulate the amount and location of on-street parking with the effect of limiting parking supply or improving traffic flow.

Enforcement

Initiate aggressive policies regarding the enforcement of parking regulations to improve traffic circulation and the availability of on-street parking. Such policies can include increasing levels of ticketing, towing, booting and apprehension of violators who have not paid outstanding citations.

Restrict Addition of Parking Facilities

Moratorium on the establishment of new parking facilities in severely congested areas or the establishment of maximum limits on the total number of spaces in an area or for each employer.

Preferential HOV Parking

Reserve parking spaces near facility entrances for those traveling in high occupancy vehicles (i.e., car/vanpools with no less than a predetermined number of passengers).

Parking Supply Adjustment

Making more/less parking spaces available depending upon the time-of-day or day- of-the-week. Generally applicable to on-street parking because local governments have little control over regulating the availability off-street parking by time of day.

HOV TREATMENTS

Improvements that reduce congestion by increasing the person throughput capacity of critically congested corridors. Also includes supporting policies and constructing facilities to encourage the use of high occupancy vehicles.

HOV Lanes

Travel lanes for the exclusive use of vehicles transporting no less than some predetermined number of passengers. Various types include:

- **Exclusive HOV Facility** (Separate Right-of-Way): Lane(s) developed in a separate right-of-way and designated for the exclusive use of high-occupancy vehicles. These facilities can be designed for buses and/or car/vanpools and are usually two-lane, bi-direction facilities.

- **Exclusive HOV Facility** (Freeway Right-of-Way): Lane(s) constructed within a freeway right-of-way and used exclusively by HOVs for all or a portion of the day. They can be separated from general purpose lanes by concrete barriers or by a wide, painted buffer. Usually open to all types of HOVs - buses, carpools, and vanpools. Can only be implemented on facilities with at least six travel lanes. Otherwise, the overall capacity of the facility is significantly decreased negating the benefits of the HOV lane..

- **Concurrent Flow Lane**: A freeway lane in the same direction of travel but is not physically separated from the general purpose traffic lanes. These lanes are designated for exclusive use by HOVs for all or a portion of the day and are usually located on the inside lane or shoulder. Markings are a common means to delineate these lanes. Only appropriate for six-lane facilities.

- **Contraflow Lane**: A freeway lane in the off-peak direction of travel designated for exclusive use by HOVs traveling in the peak direction. The lane is separated from the off-peak travel lanes by some type of changeable treatment such as plastic posts or pylons that can be inserted in holes drilled in the pavement. Contraflow lanes are usually operated during the peak periods only.

HOV Ramp Bypass Lanes

Bypass ramps at congested interchanges that provide priority access to HOVs.

HOV Toll Savings

Discount toll charges for vehicles transporting no less than a pre-determined number of passengers.

TRANSPORTATION DEMAND MANAGEMENT

Actions to reduce peak hour use of single occupant automobiles by providing commute 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 without physically altering the facilities themselves.

Transportation Management Associations

A voluntary association of public and private agencies and firms working cooperatively to develop transportation-enhancing programs within a given area. TMAs are appropriate organizations to better manage transportation demand in congested suburban communities. Applicable to subcorridors with a high concentration of employers.

Ridematching

The practice of providing employees the names of people who live in their area and have an interest in ridesharing to the same general destination.

Telecommute

The elimination of a commute, either partially or completely, to a conventional office through the use of computer and telecommunications technologies (phone, personal computer, modem, facsimile machines, electronic mail, etc.). Can involve either working at home or at a satellite work center that is closer to an employees home than the conventional office.

GROWTH MANAGEMENT

The improvements in this group encourage the use of land in ways that support transit and TDM strategies, reduce congestion by managed and balanced land use growth, and reduce trip length by creating a job/housing balance. Growth management is appropriate for developing subcorridors and for more mature areas where sufficient vacant land is still available, to affect land use and transportation patterns.

Activity Centers

Policies and regulations that balance residential development and employment and place both close to activity centers to minimize commuting distance and congestion. Matches trip productions with attractions at the same site. Involves clustering and diversification of development within activity centers which reduces the need for travel and enables these centers to be served more efficiently by transit.

Land Use Policies/Regulations

The control of land use with the goal of slowing the growth in traffic congestion. Includes:

- **Performance Zoning**: Augments traditional zoning by establishing incentives for developers based on the permissible effects of the development on the surrounding area.
- **Phased Development**: Regulates the timing and geographic distribution of development by tying it to existing municipal infrastructure and services.
- **Negotiated Development Agreements**: Cooperative agreements for infrastructure provision between developers and communities. Agreements are made on a case-by-case basis.

ACCESS MANAGEMENT

Strategies in this group deal primarily with controlling access and egress to and from arterial roadways. Access is controlled through guidelines and ordinances governing the number and design of driveways, medians, and median lanes.

Median Control

Guidelines governing the design of medians and median openings. Improvements may include construction of turn lanes to separate turning movements from through traffic. Conversely, it may entail constructing a median to prohibit specific movements.

Driveway Controls

Ordinances that restrict the design, number, location and spacing of curb cuts and driveways. Driveway consolidation and shared driveways with adjacent properties are specific substrategies.

Frontage Roads

New construction of service roads to collect local business traffic and direct it to nearby intersections.

TRANSIT SERVICE AND OPERATIONS IMPROVEMENTS

This group of improvements reduces congestion by promoting transit ridership and inducing mode shift by increasing the availability and quality of transit service.

Traffic Signal Preemption

Preferential treatment for transit vehicles that gives them priority at traffic signals thereby providing competitive travel times. Also includes upgrade and installation of signals and crossing gates at intersections along rail and trolley lines. Assumes a level of transit vehicle activity to justify implementation.

Transit Coordination

Creates the maximum feasible integration and linkage of the overall transit system. This includes, but is not limited to, promoting convenient transfers between auto, bus, and/or rail transit. An adequate level of transit service is a prerequisite.

New Transit Service

Initiate transit service to serve new and emerging markets

Bicycle Improvements at Rail Stations

Creation of bike paths and accompanying amenities to make bicycle travel possible and safe. Includes safety, aesthetic and travel time improvements and bicycle storage facilities at transit terminals and on transit vehicles.

Transit Enhancements and Expansion

Extending the area served by existing public transit routes as well as increasing the amount and speed of service provided on existing transit routes (i.e., decreased headways, additional vehicles, longer hours of service).

TRAFFIC OPERATIONS IMPROVEMENTS

Improvements in this category address traffic congestion problems through the improved management of existing roads. The strategies are designed to increase effective capacity, specifically to optimize the traffic operation of the existing roadway infrastructure through minor modifications without the addition of general purpose lanes.

Intersection and Roadway Widening

Minor widenings and lane restriping to increase intersection capacity. Includes auxiliary lanes and widened shoulders.

Channelization

Use of islands at intersections to guide and protect traffic making turns.

Traffic Surveillance and Control Systems

Real-time traffic monitoring, which allows updates to signal/meter systems, coordinated ramp metering, and traffic signal controls. Can be used to support incident management and traveler information activities. Generally applicable to the freeway system, but also applicable to high level multi-lane arterials.

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 freeway.

Computerized Traffic Signals

A higher level of traffic signal coordination that is more responsive to traffic conditions. Using detectors, a centralized computer will periodically sample traffic flow and determine the most appropriate timing plan and signal phasing. Computerized traffic signals are also employed to coordinate grid signal systems.

Eliminate Bottlenecks

Removal or correction of temporary lane reductions, substandard design elements (especially at interchanges), and other physical limitations that form a capacity constraint.

Coordinate and Upgrade Traffic Signals

Adjustments to signal timing and phasing and the installation and maintenance of activated system components to improve traffic flow and reduce congestion. Includes equipment update, traffic signal removal, pretimed signal plans and interconnected signals. Applicable to arterials with antiquated traffic signal equipment and/or high signal densities.

One-Way Streets

Often used because of traffic signal timing considerations and to improve street capacity.

Vehicle Use Limitations and Restrictions

The outright or time-of-day restriction of vehicles, usually limited to trucks, to increase roadway capacity. Also includes turn restrictions during peak hours to eliminate conflicting movements

INCIDENT MANAGEMENT

Improvements to reduce incident duration by reducing the time for incident detection/verification, response and clearance.

Incident Detection and Verification

Determination that an incident has occurred can be done via field detectors, enforcement and maintenance personnel, transit/truck/taxi organizations, motorist call boxes, cellular telephones, traffic reporters, etc. Allows quick verification of the precise location and nature of an incident.

Emergency Response Time Improvements

Activation, coordination and management of appropriate personnel and equipment via pre-planning, response teams, service patrols, tow truck agreements, and strategic placement of materials and equipment.

Alternate Routing

The provision of real-time information to motorists via variable message signs, highway advisory radio, and media outlets. The pre-planning of options under various incident scenarios including roles, responsibilities, detour routes and the timing of implementation.

Construction Management

Maintaining capacity, where possible, during planned and emergency roadway construction. Shifting construction to off-peak periods is one technique.

ALTERNATIVE WORK HOURS

Strategies that aim to affect vehicle trip demand on highway facilities by shifting the demand to less congested time periods. Examples include work schedules that spread out the hours in which the trip to and from the workplace occurs and the complete elimination of trips to the workplace on some days.

Staggered Work Hours/Flexible Work Schedules

Under staggered work hours different work groups are assigned to begin work at different times. Arrivals are spaced at specified intervals before and after conventional work hours to allow workers to travel at times when traffic moves more freely. Usually utilized by companies that have established work shifts. Flexible work schedules allows individual employees to choose their own schedules within company-set guidelines.

Compressed Work Week

Employees complete 40 hours of work in less than the normal five days. This allows employees to work longer days thereby eliminating a day each week or every other week. For example, a person would work four 10-hour days each week and have the fifth day off.

TRANSIT CAPITAL IMPROVEMENTS

Improvements such as exclusive rights-of-way (rail, busways, bus lanes) and providing parking at rail stations.

Exclusive Rail/Bus Right-of-Way

New rail line or bus lanes developed in a separate right-of-way and designated for the exclusive use of transit vehicles.

Expand Parking at Rail Stations

Increase the number of parking spaces to accommodate transfers from auto to rail.

Restore Regional Rail Service

Reactivate SEPTA rail lines previously curtailed due to needed capital improvements. (These include: R6–Cynwyd to Ivy Ridge; R3–Elwyn to Wawa and West Chester; R8–Fox Chase to Newtown; R6–Norristown to Phoenixville and Pottstown; and R5–Lansdale to Quakertown)

INTELLIGENT TRANSPORTATION SYSTEMS

Systems dedicated to providing the traveler with better and more timely information regarding routes, congestion and safety issues. Diverse user services offer improvements in travel planning, traveler information, travel management, toll payment, commercial vehicle operations, emergency management and advanced vehicle control.

Intelligent Bus Stops

Information systems that provide schedule updates, transfer information, the time at which the next bus is expected at the stop, and information on any unexpected delays. Suitable for areas with high bus volumes.

Advance Mode Choice System

Multi-modal travel information and ridematching services to help travelers determine their optimal mode, departure time and route before they begin their trip. Also provides real-time information to motorists on nearby transit options (i.e., the departure time of a train from a station at the next interchange).

Automated Toll Collection

Eliminates congestion and delays at toll booths by collecting the toll via electronic transmission from a transponder installed in a vehicle.

Traveler Information Services

Provision of pre-trip information to motorists on current traffic and other conditions and real-time guidance on route information. Includes advisory services (to warn of

traffic or transit delays) and route guidance. Especially relevant to special event generators and roadways with significant concentrations of non-local traffic unfamiliar with the roadway system.

Commercial Vehicle Operations

Utilization of ITS technologies to improve the efficiency and effectiveness of commercial vehicles. Includes weigh station pre-clearance, automated safety inspections and on-board safety monitoring.

GENERAL PURPOSE LANES

Addresses long-term transportation infrastructure needs in relation to corridor growth and economic development in the (sub)region. Improvements in this class result in a substantial increase in the capacity of a roadway to convey vehicular traffic. They are generally large in scope and cost, and require significant construction.

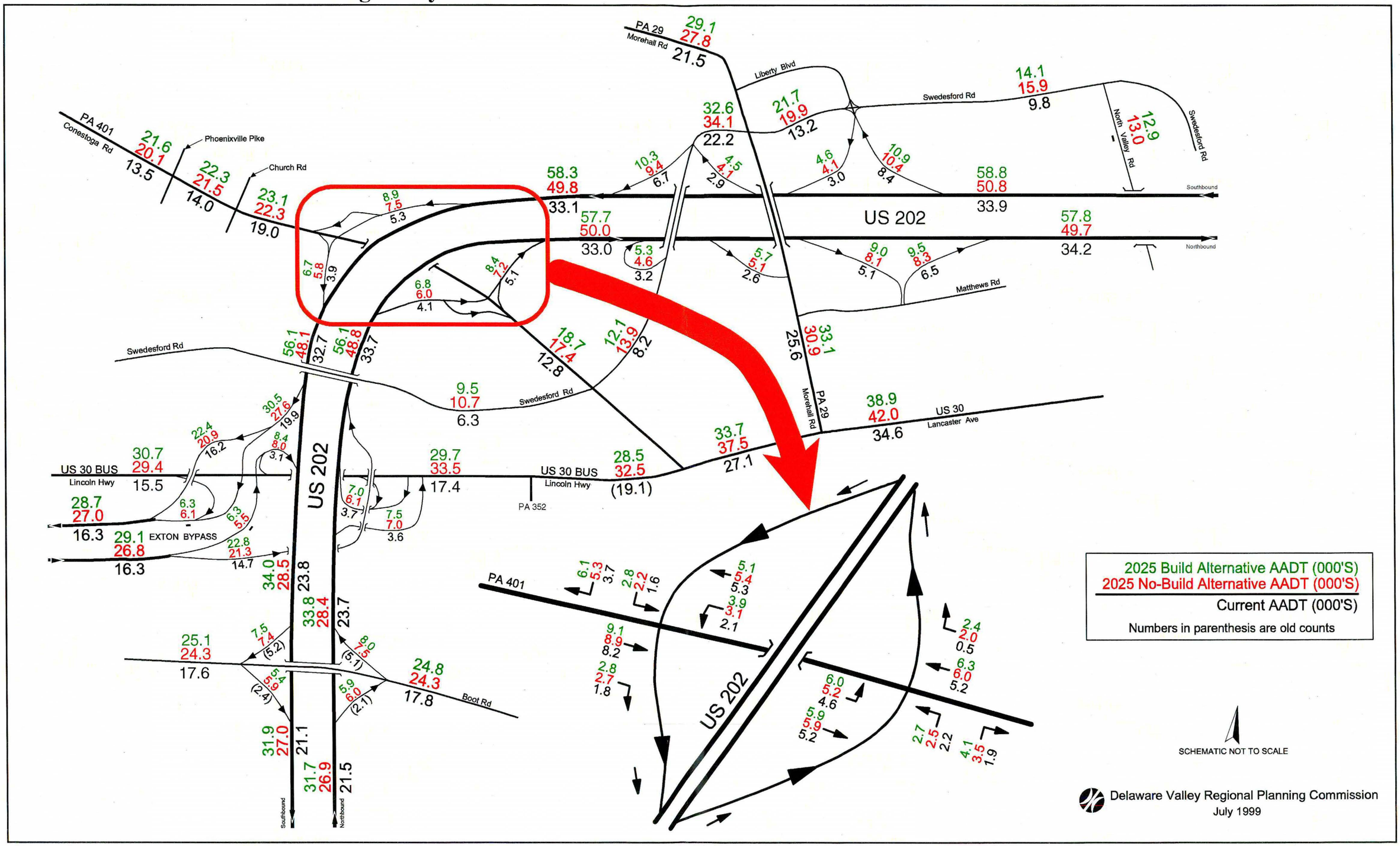
SOV Roadway Widening

Significantly increases the vehicle carrying capacity of the facility by adding new general purpose lanes.

APPENDIX C

US 202 (Section 300)
Current and 2025 Simulated Average Daily Traffic Volumes
for No-Build and Build Alternatives

US 202 Section 300 : US 30 Interchange to Swedesford Road
Current and 2025 Simulated Average Daily Traffic Volumes for No-Build and Build Alternatives



Delaware Valley Regional Planning Commission
July 1999

APPENDIX D

DVRPC Board Resolution

B-FY99-016

RESOLUTION

by the Board of the Delaware Valley Regional Planning Commission

SINGLE OCCUPANT VEHICLE CAPACITY ADDING PROJECT CONGESTION MANAGEMENT SYSTEM (CMS) FOR PENNSYLVANIA US 202 (Section 300)

WHEREAS, the DVRPC acts as the duly designated Metropolitan Planning Organization (MPO) for the nine-county Philadelphia, Camden and Trenton metropolitan area as required by Title 23 Section 134 and Title 49 Section 1607 of the U.S. Code; and

WHEREAS, the DVRPC region is designated a Transportation Management Area in accordance with Title 23 CFR 450 Subpart A Section 450.104; and

WHEREAS, the region is designated as a nonattainment area for ozone; and

WHEREAS, DVRPC has fulfilled the requirements of the Metropolitan Transportation Planning and Programming regulations, Title 23 CFR 450 Subpart C Section 450.320, which require MPOs in Transportation Management Areas designated as being in nonattainment for ozone or carbon monoxide to develop a congestion management system (CMS) that meets the requirements specified in the Transportation Management and Monitoring Systems regulations, Title 23 CFR 500 Subpart E; and

WHEREAS, the Metropolitan Transportation Planning and Programming regulations, Title 23 CFR 450 Subpart C Section 450.320, also require that in Transportation Management Areas designated as nonattainment for ozone or carbon monoxide, Federal funds may not be programmed for any project which will result in a significant increase in carrying capacity for single occupant vehicles (SOVs) unless the project results from a CMS meeting the requirements of Title 23 CFR 500 Subpart E. Furthermore, all such projects shall incorporate travel demand reduction and operational management strategies to manage the SOV effectively.

WHEREAS, a CMS analysis was conducted for US 202 (Section 300) in accordance with DVRPC procedures specified in the Pennsylvania CMS. A report has been prepared demonstrating the project's relationship to the fully operational CMS and it contains travel demand reduction and operational improvement strategy recommendations.

NOW, THEREFORE, BE IT RESOLVED THAT the Delaware Valley Regional Planning Commission certifies this project results from a fully operational congestion management system. Furthermore, DVRPC fully supports and endorses the travel demand reduction and operational improvement strategies recommended by the CMS.

Adopted this 24th day of June, 1999
by the Board of the Delaware Valley
Regional Planning Commission

I do hereby certify that the foregoing is a true copy of Resolution No. B-FY99-016.

Jean L. McKinney

Jean L. McKinney, Recording Secretary