S.R. 0083, Section 034 in Cumberland and Dauphin Counties, Pennsylvania

I-83 Master Plan

Prepared for:

U.S. Department of Transportation
Federal Highway Administration

Commonwealth of Pennsylvania
Department of Transportation

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THE I-83 MASTER PLAN

Traffic crossing the John Harris (South) Bridge over the Susquehanna River

WHY AN I-83 MASTER PLAN?

- Evaluate existing and future traffic congestion
- Evaluate safety characteristics
- Inventory environmental resources
- Develop preliminary concepts to improve mobility in the I-83 corridor
- Serve as a planning tool for future transportation projects

One of the public meetings for the I-83 Master Plan

Traffic on the John Harris (South) Bridge in the afternoon peak hour

PENNDOT

ABSTRACT

The I-83 Master Plan is a transportation planning study for the section of I-83 from the I-81 junction in Dauphin County to the New Cumberland Interchange in Cumberland County, a distance of approximately 11 miles containing 12 interchanges. The purpose of the I-83 Master Plan is to provide the required background information for programming environmental/design studies and construction projects throughout this I-83 corridor. I-83 in the study area is an important link in the National Highway System and a vital component of local access in and around the greater Harrisburg metropolitan area.

The I-83 Master Plan process involved extensive coordination with the public. Special interest groups and the study area municipalities were solicited to obtain their comments throughout the course of the study. Two series of public meetings were held, at locations in both Dauphin and Cumberland Counties.

I-83 Master Plan Conclusions - Existing Conditions of the Roadway

The I-83 Master Plan included traffic studies, crash data analysis, and municipal coordination to illustrate and characterize the deficiencies of the existing system. Three basic corridor-wide needs categories were documented:

- The deteriorating pavement conditions of the existing facility

Most of the pavement in the I-83 study corridor is over 40 years old, has reached the end of its serviceable life, and the patches and overlays that are periodically applied will have less effectiveness and longevity as the base pavement continues to deteriorate.

- The high traffic volumes and congestion

The existing roadway configuration will not accommodate existing traffic volumes at some locations and will fail system-wide with future traffic volumes.

- The comparatively poor safety characteristics

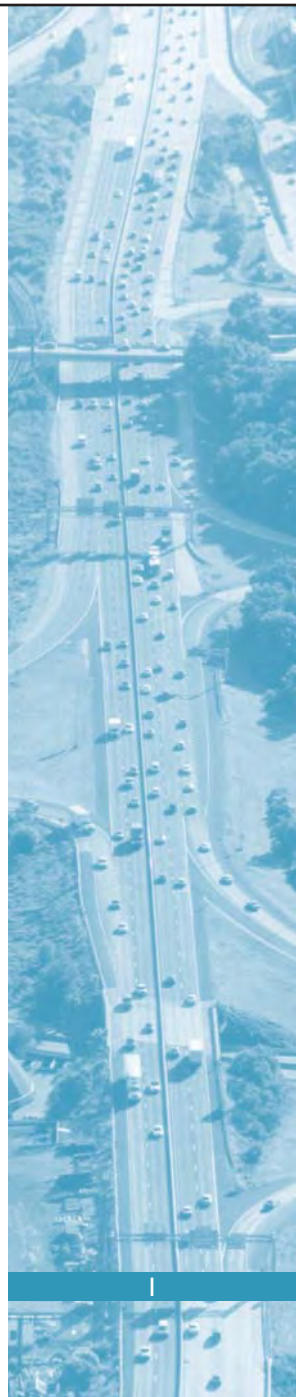
The existing roadway system features design elements from 40 years ago which do not afford the safety characteristics of modern roadway design for high speed, high volume facilities. As a consequence, there are operational safety concerns with the existing mainline and interchange configurations.

I-83 Master Plan Conclusions - Transportation Solutions

The I-83 Master Plan explored a wide range of transportation solutions to improve the overall mobility on the I-83 corridor. Transportation Systems Management (TSM), Intelligent Transportation Systems (ITS), transit, and roadway improvements were considered. The results of this investigation were that:

- TSM, transit and ITS strategies need to accompany any planned highway capacity increases

TSM and transit strategies have the potential to reduce peak hour volumes on the highway, and ITS initiatives can maximize the efficiency of the highway facility by redirecting traffic flow.



ABSTRACT (continued)

- The I-83 roadway corridor will need to be reconstructed

The I-83 mainline and ramps will require reconstruction for a number of reasons: first, to correct the problem of deteriorating pavement; second, to add capacity; and third, to apply current design criteria to the roadway geometry. The minimum operational requirements are: design to Interstate standards; 60 mph design speed on the mainline; and three through lanes in each direction between interchanges.

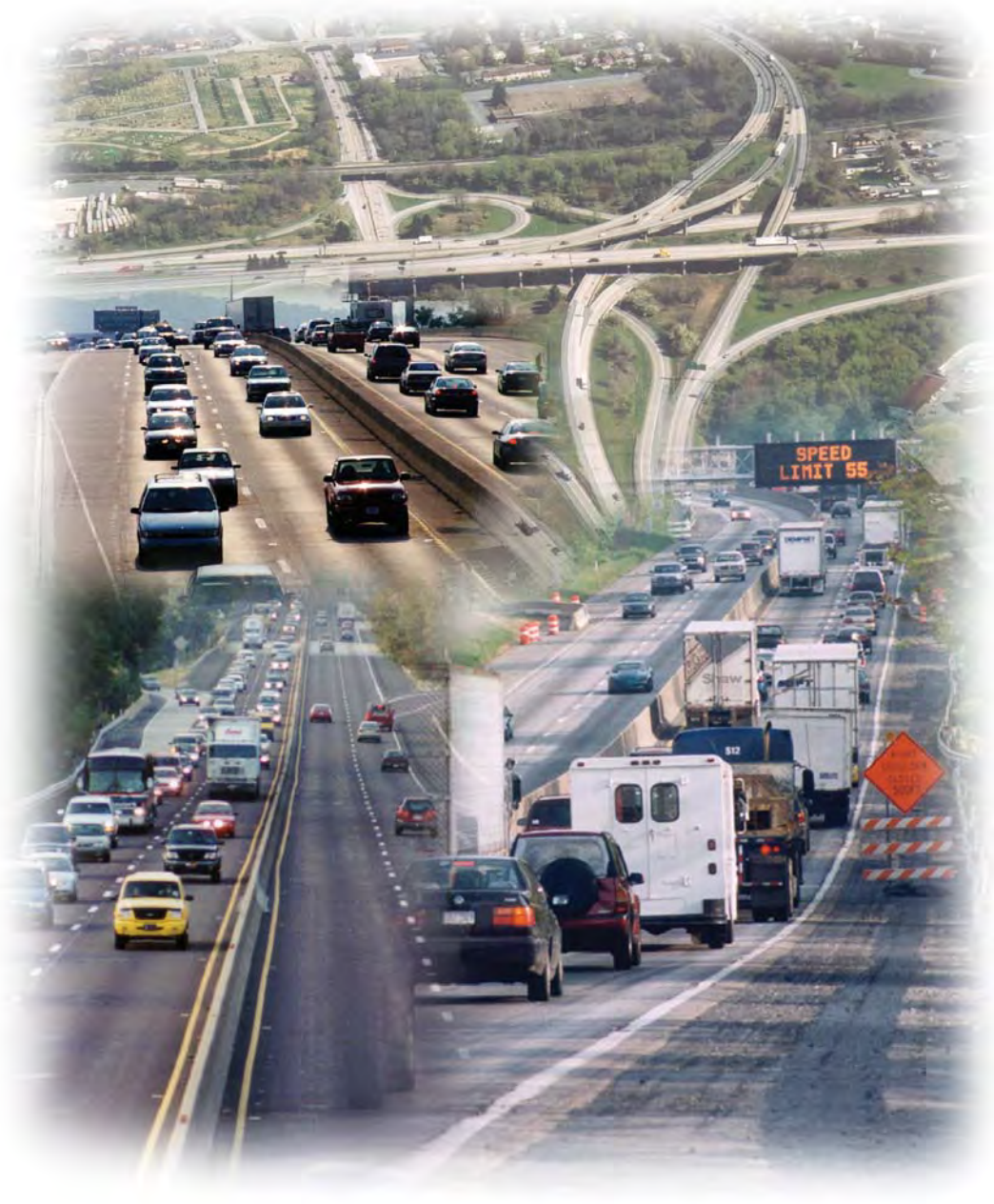
- The I-83 study corridor was divided into four project sections

Logical termini for individual highway projects were established based on the ability of each project section to be programmed, studied, and constructed. The 11-mile corridor was divided into four sections, three in Dauphin County and one in Cumberland County. Key environmental features were identified.

- Design concepts were developed

Finally, design concepts were developed for each of the four project sections, and one concept in each section was identified by PENNDOT as a baseline for the environmental impacts and cost (Summary of Concept Characteristics tables in Part V-B of this I-83 Master Plan). In general, the concepts involve the addition of lanes to provide increased capacity, the addition or reconfiguration of interchanges to meet current design criteria and to provide the required access, and the upgrade of local roads to improve access and egress to the Interstate highway.

In summary the I-83 Master Plan is a comprehensive tool to assist the local Metropolitan Planning Organization (MPO), (which is the Harrisburg Area Transportation Study (HATS)), and the Pennsylvania Department of Transportation (PENNDOT) in the planning and programming of future transportation projects on the I-83 corridor.



During the course of this I-83 planning study, a substantial amount of technical information was acquired and documented. This technical information serves as back-up data for this I-83 Master Plan. The technical information includes:

- Traffic Technical Memorandum
- Analysis of Transportation Needs
- Environmental Overview
- Historic Resource Survey
- Archaeological Resource Reconnaissance Investigation
- Technical Noise Analysis
- Public Involvement Summary
- Preliminary Environmental Evaluation
- Engineering Technical Memorandum

These reports and other technical files supporting this I-83 Master Plan have been digitally archived and can be accessed by contacting:

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PART I: INTRODUCTION TO THE I-83 MASTER PLAN

The purpose of the I-83 Master Plan is the identification of Transportation Projects that will improve traffic operations and safety by providing an upgraded transportation facility.

Interstate 83 is 88 miles long, extending from just northeast of Harrisburg, Pennsylvania to downtown Baltimore, Maryland. It is an extremely important travel route in the northeast United States that interconnects with multiple interstate routes. Locally, I-83 forms a major part of the Capital Beltway, which also includes I-81 and PA 581. The area of I-83 involved with this study is the northernmost 11 miles, which extends around the City of Harrisburg to a terminus with I-81.

Most of this 11-mile I-83 corridor was constructed in the 1960's. As such, it is an aging facility. The pavement and bridges have deteriorated to the point where total replacement is required, and the design elements are not up to today's standards nor do they accommodate today's traffic volumes and speeds.

The daily drivers of the corridor are acutely aware of the problems. Congestion, traffic incidents, maintenance activities, and short weave distances are issues that confront the motorists on a daily basis.

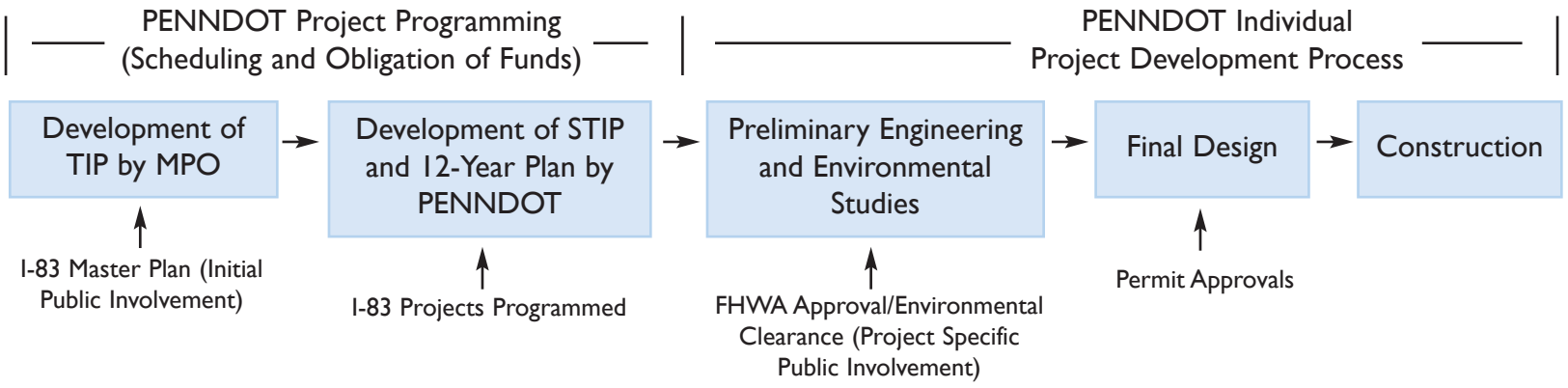
INTERSTATE 83

So what can be done?

The I-83 Master Plan is the beginning of a series of actions that will address the I-83 corridor needs. First, the Master Plan considered the corridor-wide transportation needs, identifying the areas and magnitude of problems within the corridor. Second, the Master Plan provided an inventory of environmental features within the corridor, so that the environmental and community issues of future projects can be predicted. Third, the Master Plan considered ways to make the highway corridor function more efficiently, such as Intelligent Transportation Systems (ITS) initiatives and public transit improvements. Fourth, the Master Plan divided the corridor into four project-specific regions, and presented a representative design concept that would improve the highway system. Fifth, the Master Plan included a deployment plan for the future I-83 projects, taking into consideration the corridor-wide traffic ramifications and funding issues.

This I-83 corridor is a vital component to the regional and local economic health. Beyond that, as more Americans spend a substantial percentage of their day behind the wheel, congested highway conditions such as on I-83 detract from their overall quality of life. Many people have expressed extreme frustration with increasing delays. The purpose of the I-83 Master Plan is the identification of transportation projects that will improve traffic operations and safety by providing an upgraded transportation facility.

The I-83 Master Plan will be used as a planning and programming tool by the Pennsylvania Department of Transportation and the local Metropolitan Planning Organization (MPO), which is the Harrisburg Area Transportation Study (HATS). In that capacity, it highlights environmental issues, design concepts, and anticipated costs. With this data in hand, the Department and MPO can make informed and logical decisions that will result in the sequential study, design, and construction of transportation solutions on the I-83 corridor. The planning and programming process allows the MPO to assign projects to the Transportation Improvement Program (TIP). The projects listed on the TIP are subsequently considered for inclusion in the State Transportation Improvement Program (STIP).



PART II: CORRIDOR-WIDE NEEDS

NEED #1: Deterioration of the Existing Roadway

NEED #2: Congested Conditions from High Traffic Volumes

NEED #3: Operational Safety Concerns from Substandard Design Characteristics

[1] Deteriorated Pavement

[2] Traffic on northbound I-83 approaching York Split in the AM peak hour

[3] Short Merge and Weave Lanes

The I-83 Master Plan included an evaluation of the corridor from the I-81 junction to the New Cumberland Interchange to determine corridor-wide needs. Transportation needs are typically defined as the problems that are identified with the operation of the existing facility. In the case of this 11-mile corridor, some of the needs are evident to all motorists, and some are not so obvious.

The Corridor-Wide Need Number 1 is:

The existing pavement for the majority of the I-83 Master Plan corridor is over 40 years old and has reached the end of its serviceable life. Approximately 9 miles of the 11-mile corridor will require reconstruction.

One of the not-so-obvious needs is the underlying physical condition of the pavement. Except for the section from Union Deposit to the Eisenhower Interchange, which was reconstructed within the last 10 years, the pavement is approximately 40 years old. The years of supporting heavy truck traffic have taken their toll. As the pavement continues to deteriorate, maintenance activities to repair cracks and spalling become more necessary and more frequent. The reason that this need is not so apparent to the traveling public is that periodic overlays make the roadway appear new, but do not fix the underlying deteriorated base material. Consequently, resurfacing material which is placed on the roadway has limited life expectancy. The solution is the reconstruction of the entire pavement, which often means relocating traffic onto temporary lanes while the roadway is replaced. Even without adding roadway capacity, the process of rebuilding the existing system would be an extensive and costly undertaking with significant disruption to travel during construction.

The Corridor-Wide Need Number 2 is:

The existing roadway configuration will not accommodate existing traffic volumes at some locations and will fail system-wide with future traffic volumes.

A more obvious need is the traffic congestion that plagues the I-83 corridor, especially during the peak periods, but which can occur nearly any time of the day. The daily commuter has learned to expect poor levels of service, especially at the notoriously congested areas such as the York Split and the 19th Street Bottleneck. The traffic volumes are of sufficient magnitude that any incident, such as a crash or disabled vehicle, has the potential to send the entire system into gridlock (which has the potential to cause more crashes) that can require hours to dissipate.

The I-83 Master Plan includes the collection of traffic volumes, the calculation of levels of service, and the projection of these volumes to the design year of 2030. The existing corridor experiences failing levels of service in the peak periods. The adjusted annual average daily traffic (AADT) on the John Harris (South) Bridge, where the highest volumes in the corridor occur, is currently approaching 117,000 vehicles.

The traffic projections in the design year, 2030, predict conditions that can be summarized as general gridlock. The AADT on the South Bridge is predicted to be around 198,000, an increase of 69 percent over current conditions. This traffic scenario was developed with the assumption that

PART II: CORRIDOR-WIDE NEEDS

an operating commuter rail in the Harrisburg area will be in place, as well as the implementation of ITS initiatives (discussed in later sections of this report).

Some roadway configurations contribute to localized congestion areas. Most notable is the lack of two continuous northbound lanes on I-83 at the York Split (PA 581) that causes extensive northbound back-ups in the AM peak hour. The solutions to these and other traffic congestion problems will focus on alleviating the major congestion points without causing other congestion areas to develop as a result.

Failure to address the capacity issues in the future will potentially lead to extremely undesirable characteristics on the regional roadway system around Harrisburg. As the congestion becomes worse, and travel times increase as predicted by traffic models, motorists will tend to increasingly seek collateral roadways to reach their destination, placing additional stress on the local street system. The end result of this process may lead to adverse economic impacts on the Harrisburg region, as employers may no longer seek to locate there and employees may no longer wish to live and commute there.

The Corridor-Wide Need Number 3 is:

The existing roadway system features design elements from 40 years ago which do not afford the safety characteristics of modern roadway design for high speed, high volume facilities. As a consequence, there are operational safety concerns with the existing mainline and interchange configurations.

Another noticeable problem associated with this I-83 corridor is the tendency for recurring crashes, brought on largely by a combination of high traffic volumes and highway design elements that do not meet today's Interstate standards. The congested conditions and frequent bottlenecks result in dramatic and unexpected reductions in vehicle speed, leading to a relatively large number of rear-end crashes. The crash analysis conducted for the I-83 Master Plan has indicated that the rear-end and hit fixed object crashes in areas of the study corridor exceed the statewide average for a similar transportation facility. The reported crashes are fairly distributed throughout the study corridor, but exhibit some concentration at the main congestion points.

19th Street Bottleneck

As frequent users of the roadway know, there are many non-reportable crashes (that involve minor property damage and no personal injury) that occur daily along the corridor. The relatively slow vehicle speeds in congested areas have the benefit of minimizing the impact force and the crash severity. Nevertheless these types of crashes are a big inconven-

Narrow Shoulders

ience and expense to the vehicle operators and an occurrence that temporarily causes congestion in the travel lanes.

Many of the existing highway characteristics do not reflect the Interstate highway design standards of today. Substandard highway design features that may contribute to increased frequency of crashes include short weave distances, short acceleration/deceleration lanes, narrow shoulders, and unconventional lane placement, such as left exits.

Commuters are familiar with these deficiencies in the corridor, as they confront them every day. They have likely experienced the difficulties of merging into or out of traffic at the Colonial Park Interchange. They have entered I-83 on short acceleration lanes such as at the 29th Street on-ramp. Disabled vehicles often cause severe traffic jams because there is inadequate shoulder width.
Some of the existing substandard deficiencies mainly affect motorists that are unfamiliar with the area.
For example, the northbound I-83 left exit at the Eisenhower Interchange catches some drivers by surprise, resulting in abrupt lane changes.
Additionally, driver confusion often occurs on I-83 southbound in the Eisenhower Interchange where US 322 West, I-83 South, and I-283 North merge into two lanes.
Most of these irregular design features are exacerbated by the congested conditions, and together with the congestion constitute a disincentive to choose these roadways for commuting or recreational destinations.

In summary, the I-83 corridor exhibits many substantial transportation problems. Travel conditions are far less than desirable and are progressively getting worse. The consensus among local public officials is that the situation cannot continue without serious economic consequences.

In order to document the transportation deficiencies in the I-83 corridor, an Analysis of Transportation Needs document was assembled in conjunction with the I-83 Master Plan. The needs that are identified in that report establish the background for the development of design concepts in later phases of the Master Plan study. In addition, the corridor-wide transportation needs established in that document will become the basis of the future project specific needs for projects that are subsequently programmed, studied, designed, and eventually constructed.

PART III: ENVIRONMENTAL OVERVIEW

- Community Resources
- Cultural Resources
- Natural Resources
- Air Quality and Noise

The Capital Greenbelt is a popular local park

I-83 spans the mile-wide Susquehanna River

Shipoke, part of the Harrisburg Historic District

Interstate 83 in the Master Plan study area is a predominately urbanized corridor. It passes through the fringes of south Harrisburg and through the suburban areas east of the city and on the West Shore (Cumberland and York Counties). In some places, existing homes were cleared for the original construction of I-83, and the community remnants abut the highway. In other areas the highway was originally built on mostly open land, and subsequent suburban encroachment has occurred.

For the I-83 Master Plan, environmental features within or near the study area were identified through secondary source information. Field reconnaissance for selected areas and features was conducted to verify the data. The information gained in this fashion was used to alert the highway concept designers of the existence of these resources so that the designs could avoid encroachments whenever possible. The environmental data also was used to plan and program the level of environmental clearance that would be required for future highway projects.

Shoops Cemetery, near the Colonial Park Interchange

Row homes near I-83 on 19th Street

Community Resources:

Residential areas, businesses, and cemeteries surround much of the I-83 corridor. The residential areas range from mainly single family suburban (on the West Shore in New Cumberland Borough and Lower Allen Township), to a historic residential community (Shipoke, in the City of Harrisburg), to row houses (in the City of Harrisburg and Swatara Township), to a mixture of townhouses, apartments, and single-family homes (in Lower Paxton and Susquehanna Townships).

A number of cemeteries are present. The southeast quadrant of the Colonial Park interchange contains Shoops Cemetery, and northwest of the Eisenhower Interchange is the Holy Cross Cemetery.

This 11-mile section of I-83 contains 12 interchanges, all but one of them (the interchange with I-81) offering local access. Many of the interchange areas are surrounded by commercial development. Retail malls are at New Cumberland (the Cedar Cliff Mall),

Cedar Cliff Mall, adjacent to I-83 at the New Cumberland Interchange

PART III: ENVIRONMENTAL OVERVIEW

Paxton Street (the East Shore Mall), Union Deposit (the Point Mall), and Colonial Park (the Colonial Park Mall). Additionally there are many other retail stores, restaurants, and service stations near the interchange locations throughout the I-83 corridor.

Industries and office parks are scattered along the I-83 study corridor, as are rail lines used for freight and passenger service. The interchanges on the West Shore provide access into Camp Hill, Lemoyne, and New Cumberland. The 2nd Street Interchange on the East Shore provides access into downtown Harrisburg, the site of many state government offices, other offices, and the downtown retail area.

The Spring House on Spring Creek, a potentially eligible historic resource

Public parkland can be found along this section of I-83. The Capital Greenbelt crosses I-83 in two locations, at the Susquehanna River and near a tributary to Spring Creek at Paxtang Avenue. RiverFront Park is crossed by I-83 on the east bank of the Susquehanna River. On the West Shore, Sherwood Park is just north of the New Cumberland Interchange adjacent to the east berm of I-83. Lowther Park is to the southeast of the York Split along Lowther Street in Lemoyne.

Cultural Resources:

An inventory of the above-ground cultural resources adjacent to the I-83 study corridor revealed the presence of 26 resources. These include one National Register listed district (the Harrisburg Historic District), one National Register listed house (the William Black House), two National Register eligible railroads, one National Register eligible park, and one National Register eligible dam. Additionally, there are seven potentially eligible districts, twelve potentially eligible structures, and one Municipal Historic District.

Many of these resources either abut I-83 or are crossed by the roadway. The Harrisburg Historic District, containing the community of Shipoke, is immediately north of I-83 at the 2nd Street Interchange. The remains of a water tower associated with the eligible Reading Rail Line is just off the north shoulder of I-83 at the Lemoyne interchange. To the east of the Paxton Street Interchange, the potentially eligible Spring Creek Spring House lies just to the north of the I-83 bridges over Spring Creek, and the potentially eligible Rutherford House is just south of I-83.

The study corridor contains the potential for both pre-contact and historic archaeological resources. Although much of the corridor has been disturbed by development and the construction of I-83 itself, significant areas remain which have the potential for containing buried archaeological resources. These resources would tend to be concentrated along the banks of the Susquehanna River and within the older section of the City of Harrisburg.

Natural Resources:

Since the I-83 corridor in the study area is highly urbanized, natural resources tend not to be the dominant

features. The one notable exception is the Susquehanna River, approximately one mile wide at the I-83 crossing. Just to the north of the I-83 John Harris (South) Bridge, the river is impounded by the four-foot Dock Street Dam, constructed in 1913. Other streams through the I-83 study corridor include Paxton Creek, which crosses to the east of the 2nd Street Interchange, and Spring Creek, which crosses north of and west of the Eisenhower Interchange. The water quality of the Paxton Creek is fairly degraded, from stream channel erosion, sedimentation, and runoff from urban surfaces. Spring Creek, which supports wild trout populations, has good water quality. Potential species of concern include the bald eagle, which has been known to live within the Susquehanna River watershed and the yellow lampmussel, also associated with the river.

Several wetland areas were identified in the I-83 corridor, all associated with the Susquehanna River, Paxton Creek, and Spring Creek. On the east bank of the Susquehanna River, the 100-year floodplain extends from the river to east of Paxton Creek, encompassing the entire 2nd Street Interchange area. Much of the Spring Creek drainage has been designated 100-year floodplain.

Businesses adjacent to I-83 near the Union Deposit Interchange

Air Quality and Noise:

Areas of concern relating to air quality have been identified throughout the I-83 study corridor. These areas include existing or future signalized intersections with poor or failing levels of service. As projects on the I-83 corridor are programmed, and enter the Preliminary Design phase, microscale (project level) air quality studies will be conducted.

Also, since the study area is located in Dauphin and Cumberland Counties, which are two counties listed as "marginal" nonattainment for ozone, the future projects on the I-83 corridor will require a regional (ozone) conformity determination. The regional analysis will be conducted by PENNDOT during the preliminary project phases.

The I-83 study corridor is largely fronted by PENNDOT Activity Category B (residential) land uses, with many of those areas consisting of high density housing developments. Any future project that would increase the traffic capacity of the corridor would require a noise analysis.

A preliminary noise survey was conducted in conjunction with the preparation of the I-83 Master Plan for the purpose of providing cost estimates for programming efforts. The survey included the identification and delineation of Noise Sensitive Areas, or NSAs. Several of the NSAs are high density and are in close proximity to I-83. Noise monitoring sites were selected in locations representative of worst-case noise environments within the NSA. Existing noise levels and preliminary, potential impacts within the corridor were established. Additionally, noise mitigation was developed based on professional judgement, considering the existing geometry of the corridor and the engineering characteristics associated with each of the Study Concepts.

PART IV: PUBLIC INVOLVEMENT

I-83 Master Plan Web Site

>>> *There is a compelling need to keep the general public, the public officials, special interest groups, and the affected municipalities informed of project developments from the initial planning through to construction.*

I-83 Master Plan Newsletter

I-83 in the Harrisburg area is a predominately urbanized corridor, and changes to the highway system would have direct and indirect effects to many people. Since any changes to the system would be aimed at correcting the existing problems, providing increased operating efficiency, and adding traffic capacity, the net effect to the traveling public would be positive.

However, the specific user needs may vary considerably. The needs of the long distance truck driver, the morning commuter, and the local residents may not be the same. That is why it is necessary to hear from all interests so that the improvements can be developed in a planned and logical fashion. The businesses and residents adjacent to the existing highway have their own specific needs and concerns.

There is a compelling need to keep the general public, the public officials, special interest groups, and the affected municipalities informed of project developments from the initial planning through to construction. The process provides information to the project team while keeping the public up to date as the project progresses.

During the Master Plan preparation, two sets of public meetings were held. The first set of public meetings was held in September 2002, on the West Shore and on the East Shore. These meetings introduced the study and presented the corridor-wide needs. The second set of public meetings was held in April 2003, also on the West Shore and on the East Shore. These meetings presented design concepts that were developed to improve the conditions on I-83.

Public concerns and issues, as expressed at the I-83 Master Plan public meetings, include the following:

- It was noted that improvements are long overdue for the I-83 corridor and there is a desire that the improvement projects be put on an accelerated schedule.

- It was realized that travelers may have to endure major disruptions during the construction of improvements, therefore many people expressed a desire that PENNDOT "do it right" by making improvements that not only solve existing problems and traffic conditions but also address future needs, 20 to 30 years from today.

I-83 Meeting in 2002

- Many existing traffic flow problems, including the locations of bottlenecks and backups, were identified and congestion was noted as not only being an inconvenience but also a cause of the traffic accidents.

- The major concern related to existing interchanges is inadequate ramp lengths. In addition, concern was expressed over safety problems associated with merging traffic, the confusion of left exits, and inadequate interchange capacity. Some suggestions include additional interchanges, with an interchange for direct access to Cameron Street cited most frequently.

- Most comments related to general roadway improvements include the need to widen I-83 in order to increase capacity for through traffic and for traffic entering and leaving the Interstate. Other comments addressed the need to improve the roadway geometrics (including the design for shoulders and barriers), roadway surface quality, and adequacy of signage.

- Many people expressed their desire that ITS (Intelligent Transportation Strategies) be incorporated into the reconstruction projects. Strategies mentioned include a traffic control center, VMS (Variable Message Signs - though several persons felt that the existing VMS boards were not effective), highway advisory radio, and separate truck/HOV/ express lanes.

- Some people express concern that other forms of transportation not be overlooked and proposed expanding public transit, particularly the promotion of "light rail".

- Many people also have the perception that there is a lack of enforcement of traffic regulations, particularly enforcement of the speed limit. However, it was noted that the current road conditions could make it dangerous for police to pursue and pull over violators.

- The major community and environmental issues expressed at this time were related to highway noise and the desire for noise barriers. Concern was also expressed over potential residential and commercial displacements and impacts to parkland; however, it was frequently noted that displacements and land acquisitions would be unavoidable in this highly developed I-83 corridor.

The municipalities within or adjacent to the study area include:

Dauphin County:
Susquehanna Township, Lower Paxton Township, Swatara Township, Paxtang Borough, and the City of Harrisburg.

Cumberland County:
Lemoyne Borough, New Cumberland Borough, Camp Hill Borough, and Lower Allen Township.

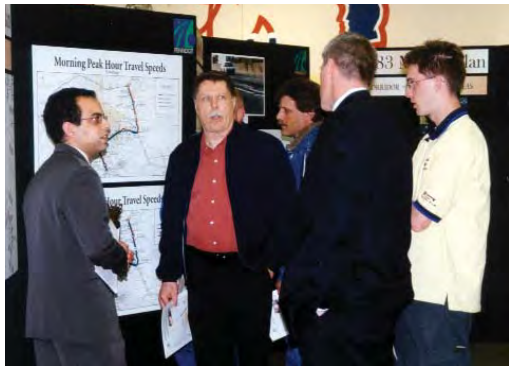
York County:
Fairview Township.
(In the York County Metropolitan Planning Organization)

Officials for each of the study area municipalities were contacted for interviews, and appropriate municipal plans and ordinances were collected along with comments regarding problems and issues within the study corridor. One of the key issues was to determine the I-83 access requirements of the municipality and to be updated on development plans for traffic generators. In addition to the municipal contacts, the Cumberland County Planning Commission, the Dauphin County Planning Commission, and the Tri-County Regional Planning Commission (TCRPC) were contacted for information. TCRPC serves Cumberland, Dauphin, and Perry Counties and also serves as staff support for the

Metropolitan Planning Organization (MPO), known as the Harrisburg Area Transportation Study (HATS).

Additional meetings were conducted to reach out to special interest groups and neighborhood associations to establish points of contact and to encourage future involvement during the development of individual projects that will be programmed as a result of this I-83 Master Plan. Special interest groups include the West Shore and Harrisburg Regional Chambers of Commerce, the State Police, the local emergency service providers, Capital Area Transit, Capital Area Beltway Committee, the Sierra Club, the Harrisburg Bicycle Club and the Capital Area Greenbelt Association.

A mailing list of organization contacts and of members of the general public who expressed interest in the I-83 Master Plan has been created for future public involvement activities. PENNDOT recognized the importance of keeping the public informed and maintaining public support throughout the project development process. Public involvement is crucial to assure that future transportation improvement solutions address the needs of both the traveling public and the public that will be most affected by the construction of these projects in their community.

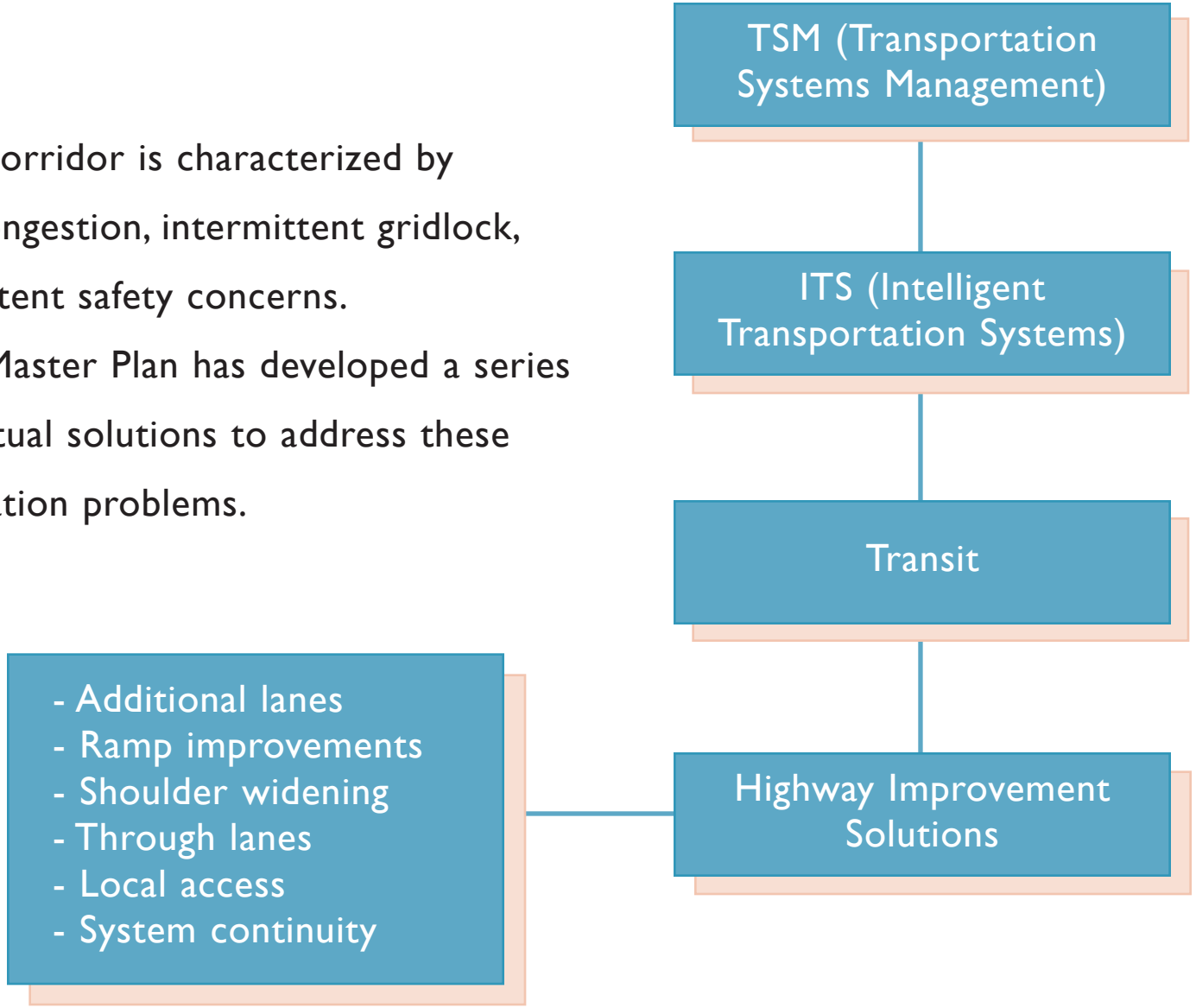


Discussion of Traffic Characteristics at a Public Meeting

The public involvement effort also included the development of an I-83 Master Plan website, www.I-83beltway.com. The website provided information on the study activities and offered a means for the public to give their input or express their concerns regarding the study efforts. In addition, at each of the general public meetings, survey forms were provided to solicit input from the public. This information was compiled, along with the results from the municipal meetings and special interest meetings, to provide PENNDOT engineers and planners with a summary of the public's major issues and concerns, some of which were presented in the preceding pages. These issues and concerns were considered during the development of the design concepts and the preparation of the I-83 Master Plan.

PART V: TRANSPORTATION SOLUTIONS

- The I-83 corridor is characterized by routine congestion, intermittent gridlock, and persistent safety concerns.
- The I-83 Master Plan has developed a series of conceptual solutions to address these transportation problems.



A. TSM, ITS, and Transit Initiatives

The transportation industry of today is progressively attempting to maximize the performance of the existing transportation systems. In many cases, providing increased operating efficiency can avoid or defer the construction of new roadway to add capacity. Partly this effort is at the urging of environmental groups, clean air coalitions, and others who hope to lessen the national dependence on foreign oil. Partly it is through the highway industry itself, which acknowledges that there is a practical limit to the amount of highway capacity that can be added to accommodate projected demand. Thus there is a greater emphasis on techniques to either take people off the highways, to consolidate trips, or to increase the efficiency of the existing roadway system.

These techniques typically involve either TSM (Transportation Systems Management), ITS (Intelligent Transportation Systems), or transit. These initiatives can be thought of in three ways. They can be viewed as a stand-alone solution that, after initiation, can provide acceptable transportation service without any major highway construction. They also can be viewed as an interim solution that will temporarily assist in congestion management until the needed highway improvements can take place. Alternatively, they can be viewed as techniques that would function in conjunction with highway construction improvements to make the transportation system as efficient as possible.

One of the existing variable message signs on I-83, an ITS application

TSM (Transportation Systems Management)

These traffic operational improvement techniques include carpooling, staggered work schedules, park-n-ride, HOV lanes, and other techniques to increase vehicle occupancy and reduce the number of single-occupant vehicles on the road. Many of these initiatives are already in place or planned, such as carpooling incentives and park-n-ride lots. Some have been shown to have limited utility, and may not be applicable to the situation on I-83 around Harrisburg. For example, HOV lanes are a good idea where there is considerable distances between major access points, but are less useful in a situation where there are many access points within a relatively short distance. In the I-83 corridor, traffic analysis has indicated that only 12 percent of the vehicles is through traffic, so the overall benefit from HOV lanes would be minimal.

These TSM strategies, such as carpooling and staggered work hours, are being actively promoted in the region. However, many people do not have the opportunity to carpool, and many businesses do not have the option to drastically change work hours, so it is not anticipated that TSM initiatives alone would solve the traffic congestion problems on I-83. Rather these ideas will continue to be promoted as a way to maximize the efficiency of the existing and future highway systems.

ITS (Intelligent Transportation Systems)

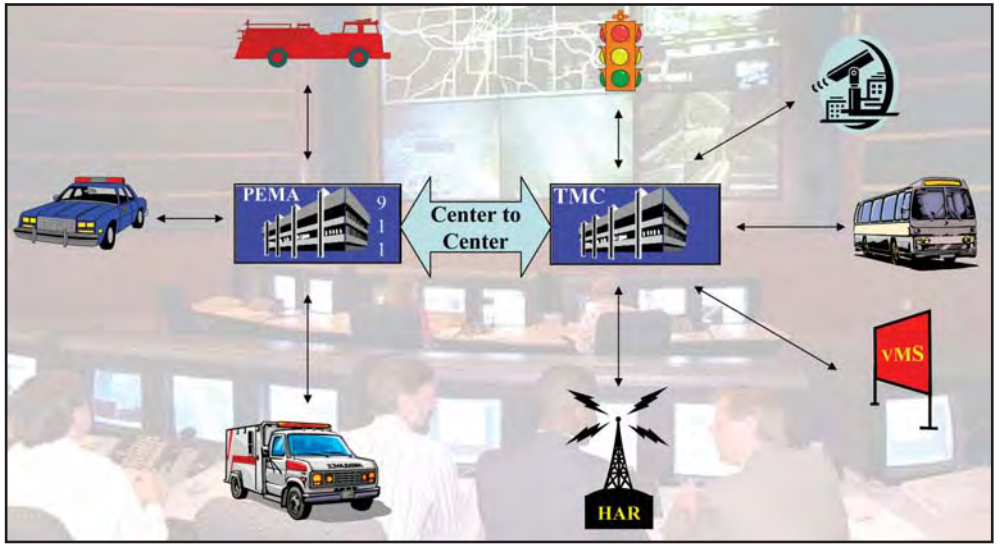
ITS involves the use of various technologies to maximize the use of the highway system by managing traffic more effectively, thereby improving the operational characteristics of the

PART V: TRANSPORTATION SOLUTIONS

existing roadway. From an interstate highway perspective such as I-83, ITS focuses on managing incidents, such as crashes, construction activity or special events. These incidents can cause rapid degradation of the system, especially in the peak periods when the highway has reached capacity and does not require much of a slowdown to result in major congestion.

Some of the common ITS technologies focus on collecting pertinent roadway information, such as traffic volumes and speeds through the use of cameras and vehicle detection systems. Other technologies such as variable message signs (VMS), highway advisory radio (HAR) and advanced signal systems focus on traffic control and traveler information during highway occurrences and provide warning and diversionary options, such as alternate routes. There are currently several permanent VMS in place at key decision points around the Capital Beltway and HAR transmitters have been deployed providing limited audio coverage on I-83 and PA 581.

To date, the existing devices have shown promising results in this region and ITS is becoming mainstream around the country. More VMS and a



The Transportation Management Center (TMC) Systems

network of traffic cameras at most major interchanges around the Beltway are planned in the next four years. An automated queue detection system, which will integrate traffic detectors, VMS and traffic cameras for northbound I-83 traffic approaching the York Split, will be operational in 2004. This system will give real-time information to travelers regarding recurring congestion and potential alternate routes.

This I-83 Master Plan recommends several additions to PENNDOT's current ITS deployment initiatives in the form of various devices and a dedicated communications backbone. These devices include VMS, traffic cameras, HAR, queue detection and traffic signal coordination for adjacent arterial streets. The centerpiece of the Master Plan's ITS strategy is a Transportation Management Center (TMC) for the region. The TMC would be the nerve center for the regional communications network, including monitoring of the Capital Beltway and the deployment of emergency services. This integrated system could greatly reduce the response time of the state and local police, emergency service providers, and transportation officials, allowing traffic incidents to be cleared in shorter time. It can also allow motorists to be notified when closures or detours are anticipated, either pre-trip or en-route. The TMC would integrate

CAT buses serve much of the Harrisburg area

with developing Homeland Security plans and initiatives involving the State Government and PENNDOT Central Office. The TMC would also coordinate the day-to-day changes in traffic flow through construction sites.

While the TMC and other ITS initiatives can greatly assist the traveling public by lessening the impacts associated with incidents or construction, it is not anticipated that they could, without highway construction, accommodate the anticipated high future traffic volumes. Nevertheless, the insertion of these ITS strategies, as well as TSM initiatives, may allow the extent of new highway construction, i.e., number of additional lanes, to be less than if the strategies did not exist. For this reason it is expected that future highway systems will rely heavily on these ITS technologies to improve traffic circulation efficiency and more effectively allow people and goods to reach their destinations.

Transit

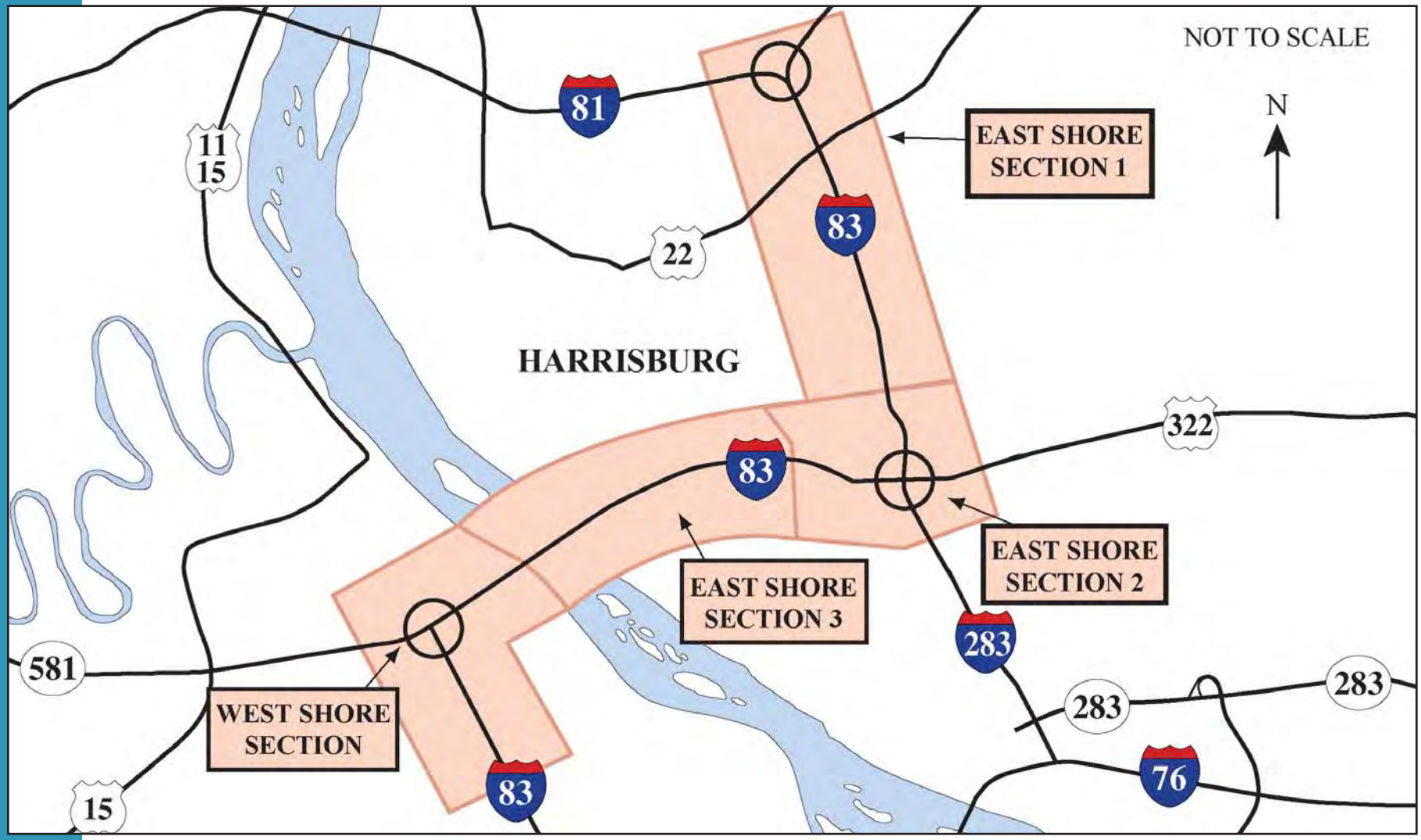
The Harrisburg area is served today by various public transportation services that include bus and train service. Regionally, one of the major east-west Amtrak routes passes through and serves Harrisburg. Trailways and Greyhound bus lines serve the area with regional bus service. Within the local area, Capitol Area Transit (CAT) provides bus transportation. CAT has a current inventory of 64 buses serving the Harrisburg area in both Dauphin and Cumberland Counties.

Future planned transit initiatives include the development of a commuter rail line, CORRIDOR*one*, between Carlisle, Harrisburg, and Lancaster. CORRIDOR*two*, a second rail line that is only in the concept stage, would link York, Hershey, and Lebanon. The future traffic analysis for the I-83 Master Plan took into consideration the projected shift of ridership from the highways to CORRIDOR*one*. While the shift to transit will be beneficial to the function of the transportation system, it would not be of sufficient volume to offset the projected demands in highway use over the next 20 to 30 years. Like ITS and TSM, the construction and expansion of transit facilities is, in conjunction with highway improvements, important in providing greater efficiency to the overall transportation network.

In summary, the TSM, ITS, and transit initiatives are vital steps in maximizing the effectiveness of the overall transportation system. The TSM and transit components would consolidate and distribute ridership, resulting in decreased highway demand, especially in the peak periods. The ITS measures would increase the efficiency of the highway system by notifying, routing, and redirecting traffic. While all of these are an important adjunct to the highway system, none of these measures, alone or in combination, would alleviate the need to add roadway capacity and improved ramp configurations on the I-83 corridor.

For more information of ITS initiatives on the Capital Beltway, please refer to the Traffic Technical Memorandum prepared for the I-83 Master Plan. ITS deployment plan information is included in Part VI-A of this Master Plan.

PART V: TRANSPORTATION SOLUTIONS



B. Highway Improvement Solutions

Traffic studies, interviews with local municipalities, and consideration of TSM, ITS, and transit strategies have all resulted in the conclusion that roadway improvements are needed on the I-83 corridor around Harrisburg. Without those improvements, capacity problems will be exacerbated, adversely affecting the local economy, regional transportation, and quality of life. As the conditions become worse over time, people will become increasingly intolerant of gridlocked highways. As the traffic situation progresses from inconvenient to intolerable, people may go other places for work, for recreation, and will tend to avoid the congested areas entirely. Businesses may choose to re-locate outside of the area. Clearly the condition needs to be improved.

The first step in the I-83 Master Plan process was to develop a strategy for the corridor improvements. This involved dividing the 11-mile corridor into sections that could be programmed, funded, studied, and constructed. It was immediately clear that construction could not take place simultaneously on the entire 11-mile corridor because of the insurmountable problems caused by traffic maintenance during construction, which could in turn cause economic hardship. In addition, fiscal constraints could reduce the ability to fully fund all required projects at one time.

The solution? The corridor was divided into four sections that could be funded through the local MPO, advanced through PENNDOT's project development process, designed, and constructed. This meant that each section had both logical termini and independent utility. In other words, each of the four sections could be constructed independently and function adequately whether or not the other three sections were constructed. The deployment of the four sections would follow a logical sequence that would improve overall traffic operations at each successive stage.

As illustrated on the mapping, the four sections were defined as:

East Shore Section 1:

I-81 to the Eisenhower Interchange
This section includes both the Colonial Park and the Union Deposit Interchanges. It would terminate to the north of Derry Street.

East Shore Section 2:

The Eisenhower Interchange
This section includes the local access to the Harrisburg East Mall and Derry Street. It would extend westward to 29th Street.

East Shore Section 3:

Eisenhower Interchange to Cumberland County Line
This section includes 19th Street, 17th Street, 13th Street, and 2nd Street Interchanges, including the John Harris (South) Bridge. It would extend eastward to 29th Street.

West Shore Section:

Cumberland County Line to the New Cumberland Interchange
This section includes the Lemoyne, Highland Park, PA 581, and New Cumberland Interchanges.

Each of the four sections were evaluated in conjunction with the I-83 Master Plan. They are described in subsequent sections of this document, including conceptual design, environmental involvement, and cost. The conceptual design assumed a 60-mph design speed on the I-83 mainline throughout the corridor. The improvements would be consistent with current Interstate highway design criteria, and would include three continuous lanes in each direction on the I-83 mainline between interchanges.

The engineering design for the Study Concept for each of the four sections was completed only to a conceptual level. The Study Concept was determined to best represent the extent of disturbance, magnitude of environmental impacts, and construction cost that would occur when the project advances through the design and construction phases.

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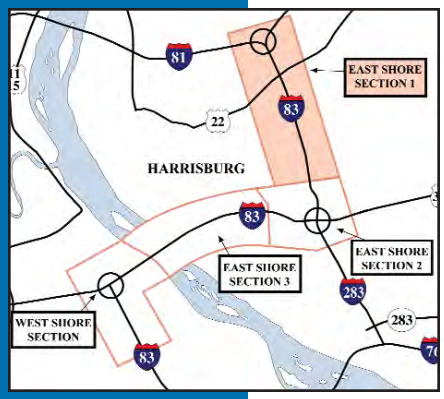


1. East Shore Section 1:

I-81 to the Eisenhower Interchange

Colonial Park Interchange

Union Deposit Interchange

East Shore Section 1 - As It Exists Today

East Shore Section 1 extends from the I-81 interchange to just north of the Eisenhower Interchange. It includes interchanges at Colonial Park (U.S. 22) and at Union Deposit (Union Deposit Road). The I-83 mainline consists generally of two lanes in each direction. The I-83 mainline south of Union Deposit was reconstructed in the early 1990's, and features two travel lanes plus an auxiliary lane both northbound and southbound. The I-83/I-81 system connection interchange was recently reconstructed, and features four I-83 northbound lanes and three I-83 southbound lanes at that interchange.

The interchange at Colonial Park is a cloverleaf, with ramp radii and weave distances that do not meet current design criteria. Just to the east of the interchange is a jug-handle intersection with Colonial Road, which is a heavily used entrance to the Colonial Park Mall, and which currently functions poorly. The interchange at Union Deposit is a diamond configuration, which was reconstructed with additional lanes several years ago, but which also is characterized by poor peak-hour levels of service.

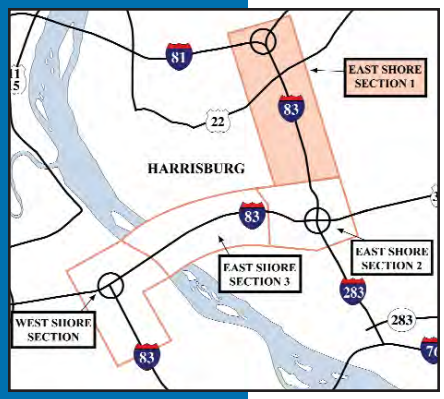
East Shore Section 1 - Design Concepts

Design concepts were developed to address the existing problems and to accommodate the design year (2030) traffic volumes. A number of concepts were developed for the Colonial Park and Union Deposit Interchanges, and through the process of design refinement, environmental analysis, and public review, were consolidated into one East Shore Section 1 Study Concept.

The mainline of I-83 would be widened to three lanes in each direction, with an auxiliary lane in both directions that extends between the interchanges. The median would be widened to accommodate breakdowns and traffic control. The interchange at Colonial Park would be reconstructed, with the replacement of the U.S. 22 bridge over I-83. The Study Concept interchange would be mainly a diamond configuration, with a loop ramp in the northwest quadrant for the relatively heavy westbound U.S. 22 to southbound I-83 movement. In conjunction with the interchange construction, the intersection of U.S. 22 with Colonial Road also would be reconstructed. The Study Concept intersection would feature U.S. 22 westbound crossing the intersection at a separated grade, with a relocated signal at Colonial Road and Elmerton Avenue. The design concept at the Colonial Park Interchange is influenced by traffic to and from the commercial areas on the east side of the interchange.

The Interchange at Union Deposit also would be reconstructed. The Study Concept configuration identified is a Single Point Urban Interchange (SPUI), featuring all four ramps converging to a centrally-located traffic signal, and allowing diagonal traffic to proceed simultaneously on dual left-turn lanes. This configuration would eliminate one signal from Union Deposit Road and would allow increased distance between the signals of East Park Drive and Briarsdale Road. The design concept at the Union Deposit Interchange is influenced by traffic to and from the commercial areas east and west of the interchange.

PART V: TRANSPORTATION SOLUTIONS



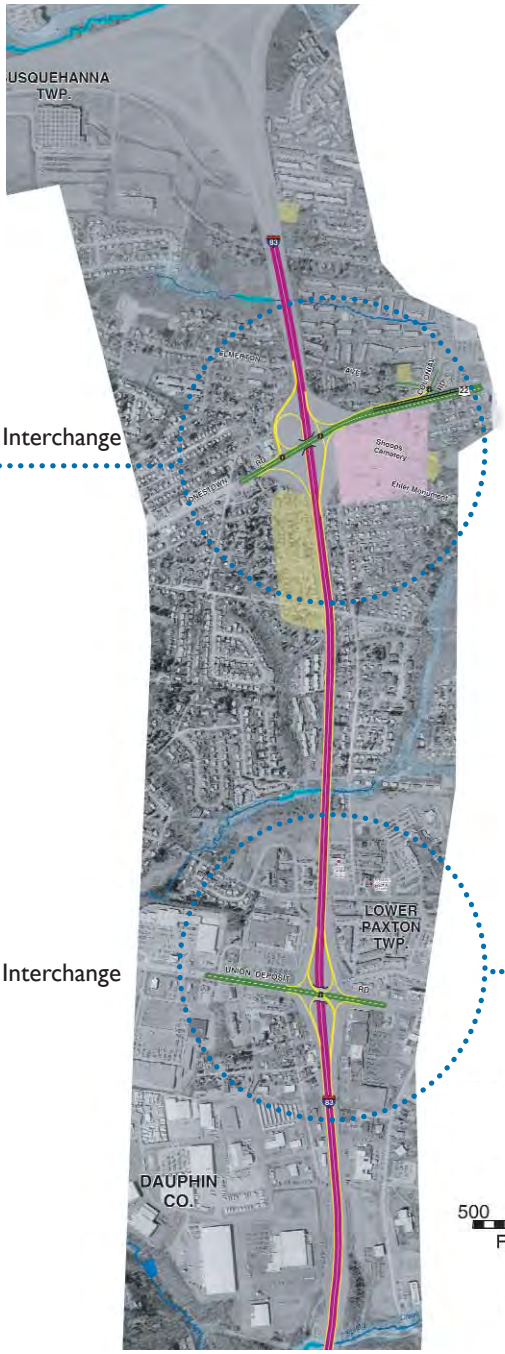
East Shore Section 1:

I-81 to the Eisenhower Interchange

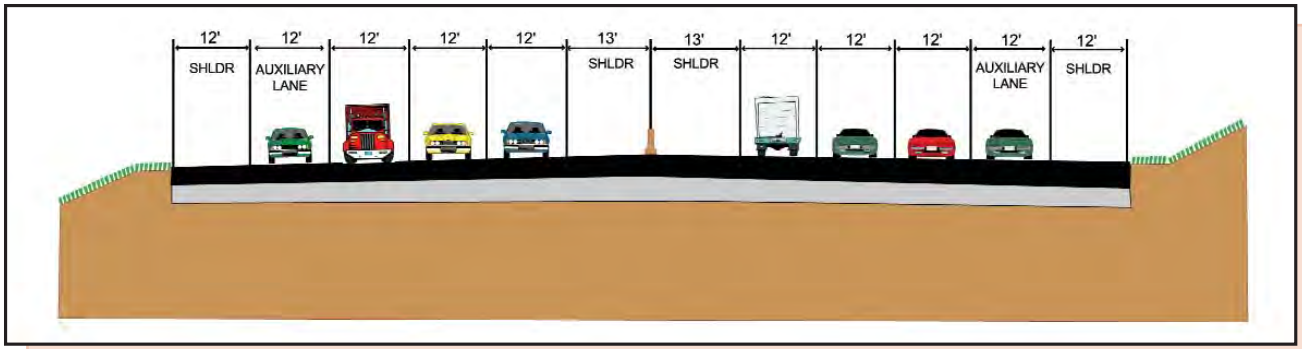
Colonial Park Interchange - Study Concept

Colonial Park Interchange

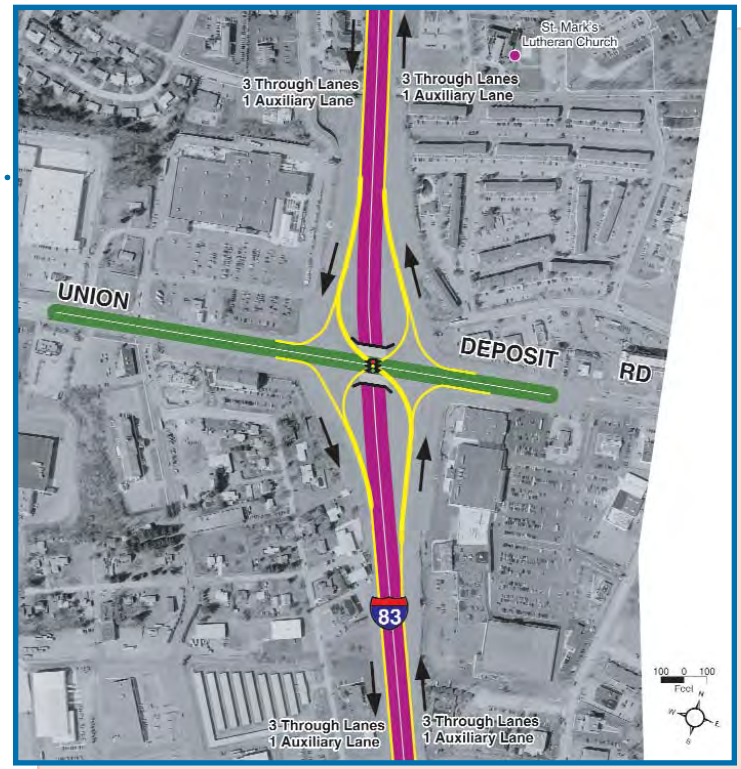
Union Deposit Interchange



East Shore Section 1 - I-83 Typical Section



Union Deposit Interchange - Study Concept



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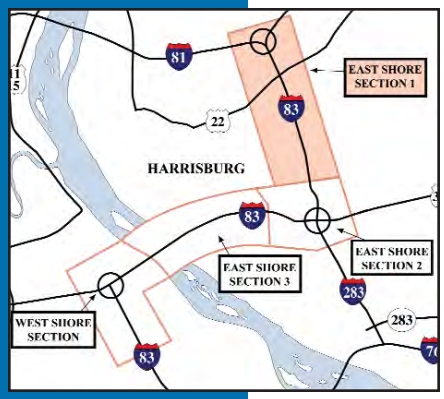


East Shore Section 1:
I-81 to the Eisenhower Interchange

East Shore Section 1 - Preliminary Environmental Impacts

The primary environmental impacts anticipated would be the property acquisitions that would be required by the roadway widening. Preliminary estimates indicate that 9 to 14 residential and 12 to 17 business displacements would be required. The proximity of communities to I-83 would necessitate future noise studies in the environmental clearance project phase, and noise walls may likely be recommended in some locations. There is the potential for archaeological remains in undisturbed parts of the study corridor.

At the Colonial Park Interchange, the Study Concept would avoid all impacts to Shoops Cemetery in the southeast quadrant. Historic resource impacts are possible to a potential historic district in the southwest quadrant.

East Shore Section 1 - Constructability, System Continuity, and Signing

The constructability of the Colonial Park Interchange Study Concept was rated as "good". There are no unsolvable Maintenance and Protection of Traffic (MPT) issues. The same is true of the Union Deposit Study Concept.

The system continuity and operational characteristics of the Colonial Park Interchange Study Concept was rated as "good". The U.S. 22 westbound loop ramp to I-83 southbound would include a dedicated auxiliary lane. The left turn from U.S. 22 eastbound to Colonial Road would operate efficiently and signal operation would be improved. U.S. 22 would feature free-flowing conditions in both directions at Colonial Road.

The system continuity and operational characteristics of the Union Deposit Interchange Study Concept was rated as "good". The Single Point Urban Interchange (SPUI) configuration allows for increased distance between adjacent signals. In addition, the SPUI would feature simultaneous movement of diagonal traffic on dual left-turn lanes, eliminating stacking of traffic.

The signing characteristics at the Colonial Park Interchange were rated as "good", with advance signing required on U.S. 22 westbound before the structure through the intersection. Mainline signing would be improved with the continuous auxiliary lane.

There are no significant signing issues at the Union Deposit Interchange, and the signing characteristics are rated as "good".

EAST SHORE SECTION 1: SUMMARY OF CONCEPT CHARACTERISTICS

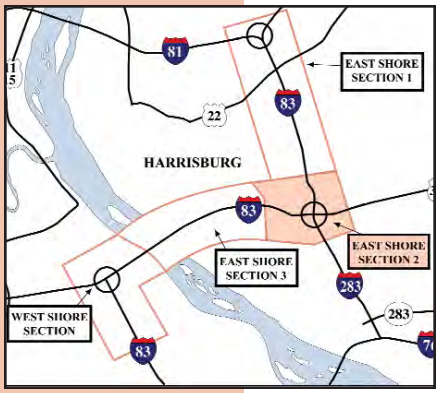
December 2003

Data represents preliminary estimates and potential impacts

	Colonial Park Study Concept	Union Deposit Study Concept
Project Description Widening of I-83 to three through and one auxiliary lanes in each direction	Partial Diamond and Loop Interchange Configuration - Includes the U.S. 22/ Colonial Road/Elmerton Road Intersection	Single Point Urban Interchange (SPUI) Configuration, with all ramps converging on single signal
Construction Cost	$128,100,000.00	Included with Colonial Park Study Concept Cost
Constructability/MPT	Good[1]	Good[1]
System Continuity	Good[1]	Good[1]
Operational Characteristics	Good[1]	Good[1]
Signing	Good[1]	Good[1]
Right of Way Required (Acres)	15-20	Included with Colonial Park Study Concept
Residential Displacements	9-14	Included with Colonial Park Study Concept
Business Displacements	12-17	Included with Colonial Park Study Concept
Potential Historic Resources Impacted	1-2	Included with Colonial Park Study Concept
Historic Archaeological Potential	Moderate/High	Included with Colonial Park Study Concept
Prehistoric Archaeological Potential	Moderate	Included with Colonial Park Study Concept
Wetland Impacts	< 1 Acre	Included with Colonial Park Study Concept
Floodplain Impacts	< 1 Acre	Included with Colonial Park Study Concept
NEPA Documentation Anticipated	Categorical Exclusion Evaluation (CEE) Level 2	Included with Colonial Park Study Concept

[1] Rating of "good" exceeds minimum criteria

PART V: TRANSPORTATION SOLUTIONS



2. East Shore Section 2:

The Eisenhower Interchange

Area Surrounding the Eisenhower Interchange

Ramps within the Eisenhower Interchange

East Shore Section 2 - As it Exists Today

East Shore Section 2 includes the Eisenhower Interchange, which connects two interstate highways (I-83 and I-283) and one major arterial (U.S. 322). The interchange also includes local access to Derry Street, Eisenhower Boulevard, and Paxton Street.

There are many features of the Eisenhower Interchange which were acceptable when it was constructed in the late 1960's (as the Penn-Harris Interchange) but do not meet the design criteria nor the needs that exist today. Northbound I-83 enters the interchange as two lanes, then exits on a single-lane left exit ramp to follow I-83 northward. Southbound I-83 also enters the interchange as two lanes, then the left lane splits to I-283 and only a single I-83 lane continues southbound. This lane combines with the ramp from I-283 northbound to form the left travel lane of I-83 southbound. The right travel lane of I-83 southbound is formed from the left lane of U.S. 322 westbound. The result is a great deal of weaving movements and uncertainty for motorists unfamiliar with the area.

The Eisenhower Interchange is a source of traffic congestion that occurs routinely, especially in the peak periods, both southbound and northbound. Maintenance and construction activities are a challenge in areas of single-lane interstate traffic. A major contributor to the congestion is the narrowing of I-83 to one lane in each direction as it passes through the interchange.

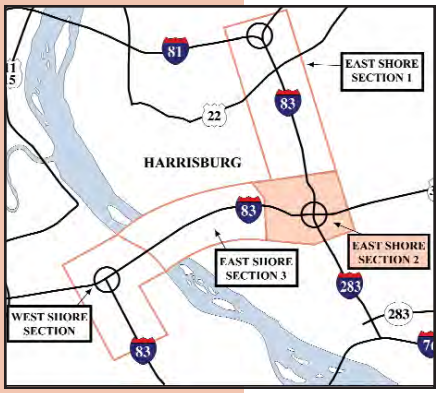
East Shore Section 2 - Design Concepts

Design concepts were developed to address the existing interchange deficiencies and to accommodate the design year (2030) traffic volumes. Several concepts were evaluated for both the I-83 mainline location and for the local access ramps. Through the process of design refinement, environmental analysis, and public review, the concepts were consolidated into one East Shore Section 2 Study Concept.

The mainline of I-83 through the interchange would be widened to three continuous lanes in each direction. To the west of the Eisenhower Interchange, the mainline would follow approximately the same centerline as the existing roadway. To the north of the Eisenhower Interchange, the mainline would be shifted to the west, compared to the existing alignment.

The Eisenhower Interchange Study Concept would include directional connections to both I-283 and U.S. 322. In addition to the regional connections, the interchange would include a number of local access connections. A series of diamond and loop ramps would connect I-83 traffic to Paxton Street in the area of the Harrisburg East Mall. Ramps from I-83 and U.S. 322 would connect to Derry Street at three signalized intersections.

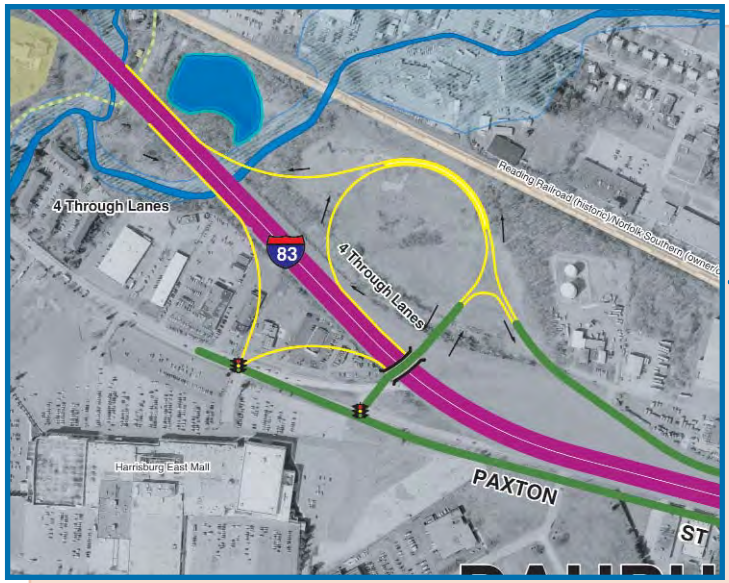
PART V: TRANSPORTATION SOLUTIONS



East Shore Section 2:

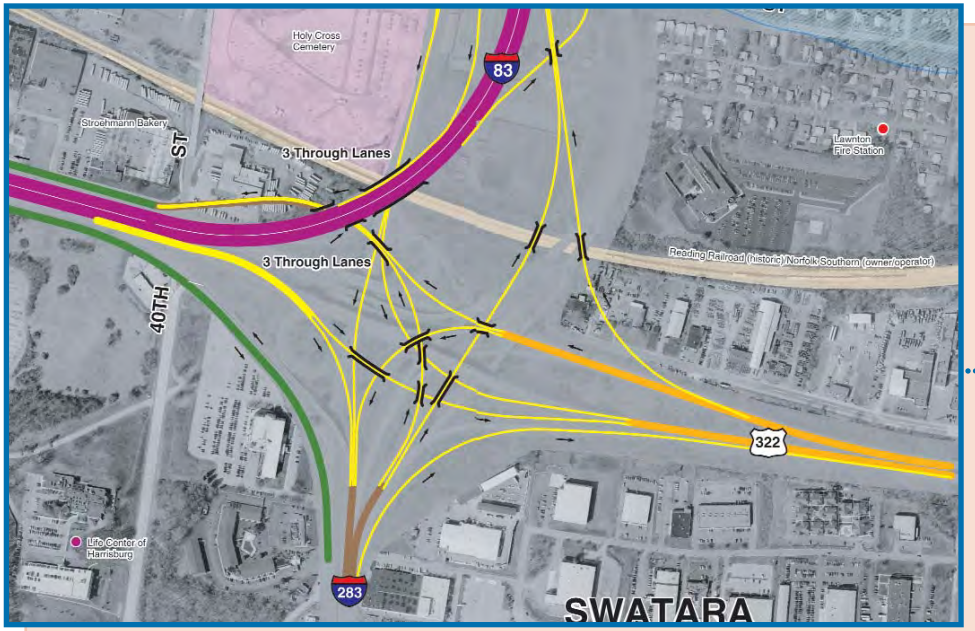
The Eisenhower Interchange

Study Concept



Paxton Street Interchange

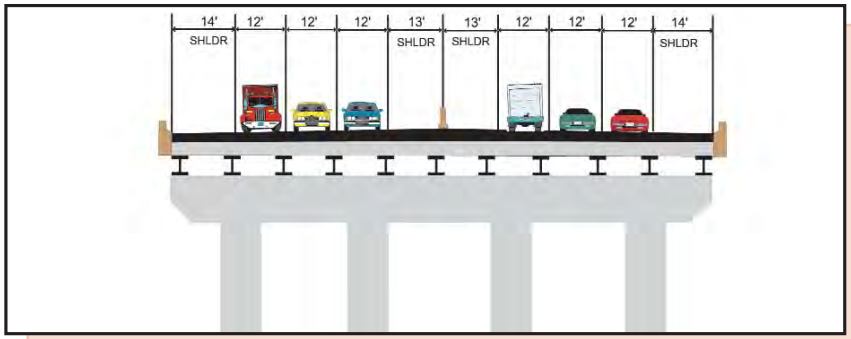
Not to Scale



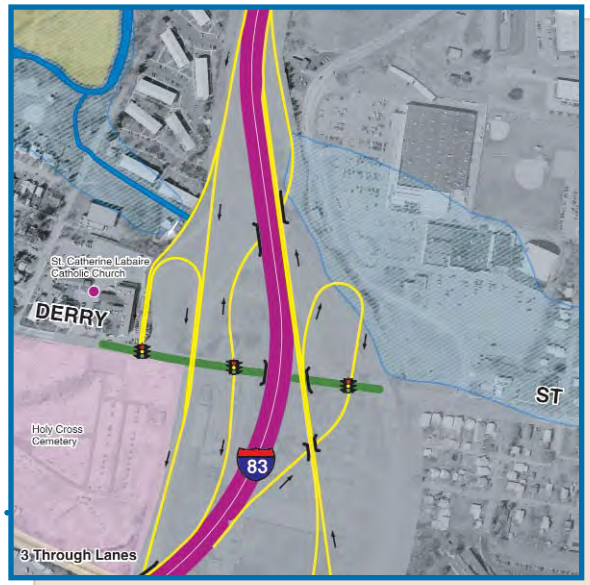
I-83/I-283/U.S. 322 Interchange

Not to Scale

East Shore Section 2 - I-83 Typical Section



Derry Street Interchange



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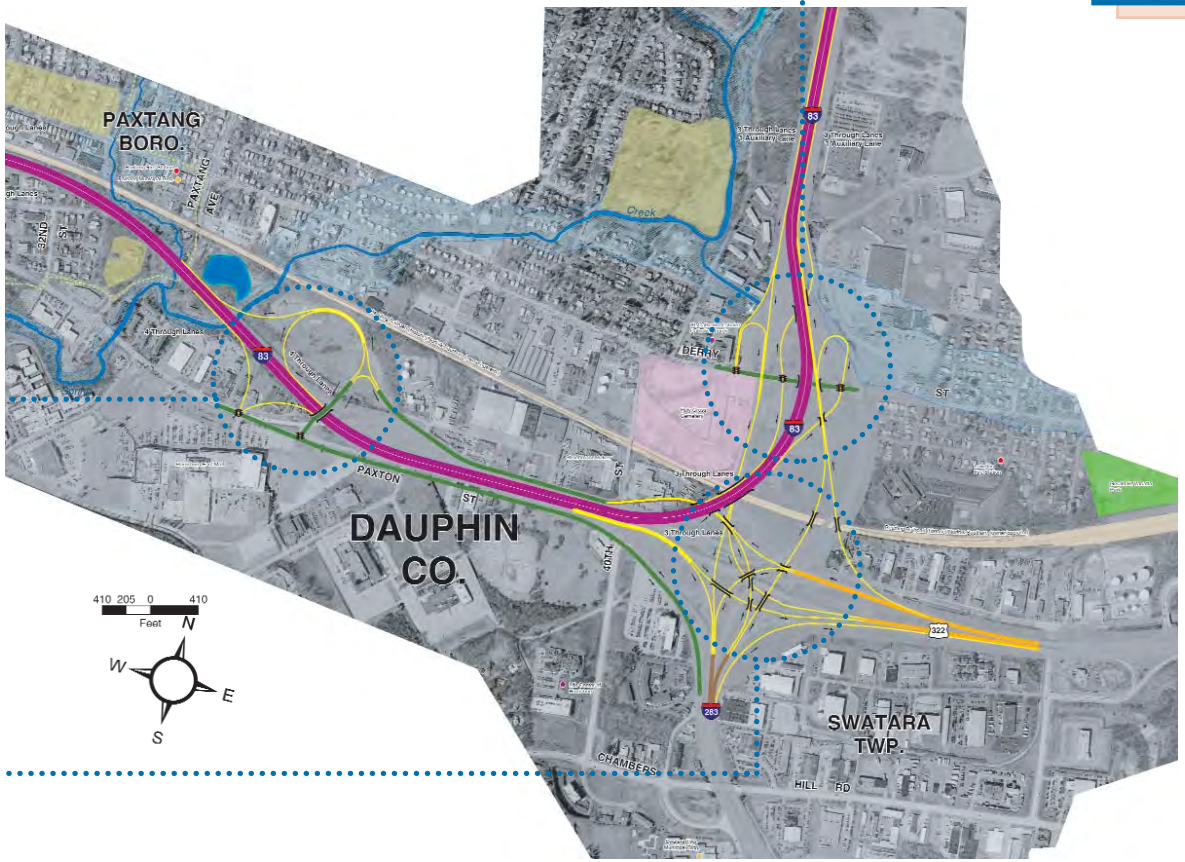


Legend

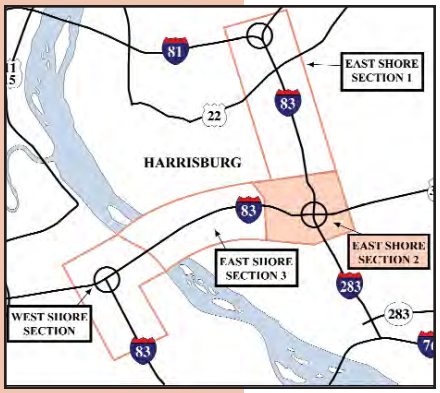
Roadway Features
- I 83 Proposed Mainline
- I 83 Proposed Ramps/Auxiliary Lanes
- I 283 Proposed Mainline
- U.S. 322 Proposed Mainline
- Local Access Roads

Municipal/Social Features
- Fire Stations
- Places of Worship
- Municipal Buildings
- Public Parks
- Capital Area Greenbelt Trail
- Cemeteries

Environmental Features
- Small Streams
- Large Streams, Lakes, and Quarries
- Wetlands
- 100 Year Floodplains

Historic Features
- Eligible for the National Register of Historic Places
- Potentially Eligible for the National Register of Historic Places

PART V: TRANSPORTATION SOLUTIONS



East Shore Section 2: The Eisenhower Interchange

East Shore Section 2 - Preliminary Environmental Impacts

One of the principal environmental effects anticipated would be the required residential and commercial property acquisitions. Preliminary estimates indicate that 19 to 24 residential and 29 to 34 business displacements would be required. The residential community south of Derry Street and east of Holy Cross Cemetery would potentially be impacted, although the cemetery would not be directly affected. The proximity of residential communities to the proposed alignment of I-83 would necessitate future noise studies in the environmental clearance project phase, and noise walls may likely be recommended in some locations.

There is a potential for effects to cultural resources in the Eisenhower Interchange area. At the existing I-83 overpass of Paxtang Avenue, the Rutherford House is immediately south of the mainline and the Spring Creek Spring House is directly north of the mainline. Both are potentially eligible for the National Register of Historic Places. There also is the potential for archaeological remains in undisturbed parts of the study corridor.

Near Paxtang Avenue, the proposed I-83 mainline would cross over Spring Creek, an important freshwater resource. Also at this location, the mainline would cross the Capital Area Greenbelt, a popular linear park.

East Shore Section 2 - Constructability, System Continuity, and Signing

The constructability of the East Shore Section 2 Study Concept was rated as "fair". Because a portion of the I-83 mainline would be shifted to the west, it would be possible to construct some of the new facility offline. The phasing of the ramp construction would require some ramp closings to complete the interchange.

The system continuity and operational characteristics of the Study Concept was rated as "good" for both the mainline and for local access. The mainline would feature three continuous lanes in each direction. I-83 would be established as the through movement. Access from I-83 to I-283 and U.S. 322 would be maintained or improved.

The system continuity and operational characteristics of the local connection to Paxton Street at the East Mall was rated as "good". The local connection at this location would provide adequate weaving distances between the Paxton Street Interchange and the I-283 off-ramp.

There would be no significant signing issues with the East Shore Section 2 Study Concept and the signing characteristics are rated as "good".

EAST SHORE SECTION 2: SUMMARY OF CONCEPT CHARACTERISTICS

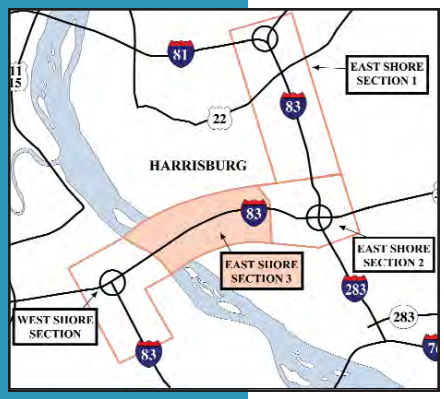
December 2003

Data represents preliminary estimates and potential impacts

	Eisenhower Interchange Concept	East Mall Study Concept
Project Description Widening of I-83 to three through lanes in each direction	I-83 interchange with I-283 and U.S. 322 with local connection to Derry Street	I-83 Interchange with Paxton Street at East Mall
Construction Cost	$218,800,000.00	Included with Eisenhower Interchange Cost
Constructability/MPT	Fair[2]	Fair[2]
System Continuity	Good[1]	Good[1]
Operational Characteristics	Good[1]	Good[1]
Signing	Good[1]	Good[1]
Right-of-Way Required (Acres)	60-65	Included with Eisenhower Interchange
Residential Displacements	19-24	Included with Eisenhower Interchange
Business Displacements	29-34	Included with Eisenhower Interchange
Potential Historic Resources Impacted	2-3	Included with Eisenhower Interchange
Historic Archaeological Potential	Moderate/High	Included with Eisenhower Interchange
Prehistoric Archaeological Potential	Moderate/High	Included with Eisenhower Interchange
Wetland Impacts	0	Included with Eisenhower Interchange
Stream Crossings	2	Included with Eisenhower Interchange
Floodplain Impacts	1.9 Acres	Included with Eisenhower Interchange
NEPA Documentation Anticipated	Environmental Assessment (EA)	Included with Eisenhower Interchange

1. Rating of "good" exceeds minimum criteria
2. Rating of "fair" meets acceptable level or minimum criteria

PART V: TRANSPORTATION SOLUTIONS



3. East Shore Section 3:

Eisenhower Interchange to the Cumberland County Line

I-83 Crossing Paxton Street

I-83 from 19th Street to the Susquehanna River

East Shore Section 3 - As It Exists Today

East Shore Section 3 extends from just west of the Eisenhower Interchange to the west bank of the Susquehanna River, which is the Cumberland/ Dauphin County line. This section includes a northbound interchange at 19th Street, a southbound interchange at 17th Street, a full interchange at 13th Street, and a full interchange at 2nd Street. East Shore Section 3 also includes the bridge over the Susquehanna River. The I-83 mainline consists of two lanes in each direction east of the 17th Street / 19th Street Interchanges and three lanes in each direction from the 17th Street / 19th Street Interchanges to beyond the Cumberland County line.

The interchanges of East Shore Section 3 provide direct access into downtown Harrisburg. The 2nd Street Interchange traffic flows inbound onto 2nd Street and outbound from Front Street, making this interchange important for both commuter and tourist purposes. There is no direct access onto Cameron Street (PA 230), which is a major north-south route through Harrisburg, but much of the Cameron Street traffic connects to I-83 via the 13th Street Interchange.

East Shore Section 3 - Design Concepts

Design concepts were applied to address the existing problems and to accommodate the design year (2030) traffic volumes. Several concepts were evaluated for both the I-83 mainline and for the interchanges. Through the process of design refinement, environmental analysis, and public review, the concepts were consolidated into one East Shore Section 3 Study Concept.

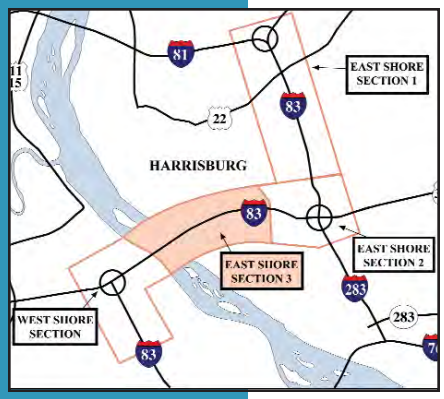
From 2nd Street to 19th Street, the I-83 mainline would be separated into through lanes and local collector-distributor access lanes. The through lanes, three in each direction, would be barrier separated from the local access lanes and would restrict access to any of the interchanges in East Shore Section 3. The local access I-83 lanes, two in each direction plus a third auxiliary weaving lane, would provide access to all of the interchanges and consequently into Harrisburg and the local roadway network. From 19th Street to 29th Street the mainline would consist of four lanes in each direction.

The major local access change proposed by the Study Concept is the replacement of the interchange on 13th Street with an interchange on Cameron Street (PA 230). This direct connection to Cameron Street would facilitate traffic movements, since Cameron Street is four lanes and a major north-south connector between I-83 and I-81 to the north. The interchange at 2nd Street would be modified to provide more efficient traffic movements, but the ramps into the city streets would remain at the same location. The 2nd Street connection would consider the results of an ongoing project, the Southern Gateway Study, which is investigating access improvements by expanding and improving the city street grid system.

East Shore Section 3 - Preliminary Environmental Impacts

To the east of 19th Street, I-83 extends between the Norfolk Southern lines to the north and businesses that front on Paxton Street to the south. In the 19th Street and 17th Street area, there are residential areas that are near the existing I-83 mainline. Preliminary estimates indicate that a total of 23 to 28 residential and 15 to 20 business displacements would be required. The proximity of the residential communities to I-83 would necessitate future

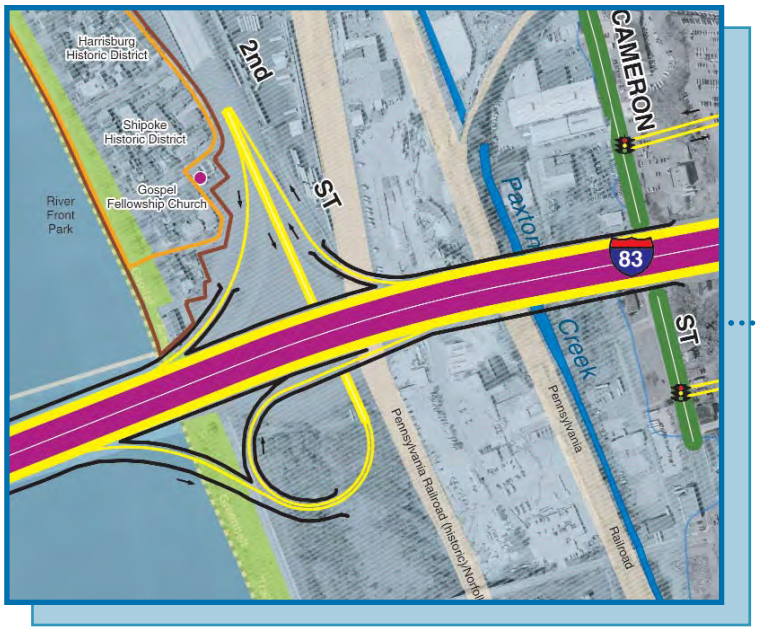
PART V: TRANSPORTATION SOLUTIONS



East Shore Section 3:

Eisenhower Interchange to the Cumberland County Line

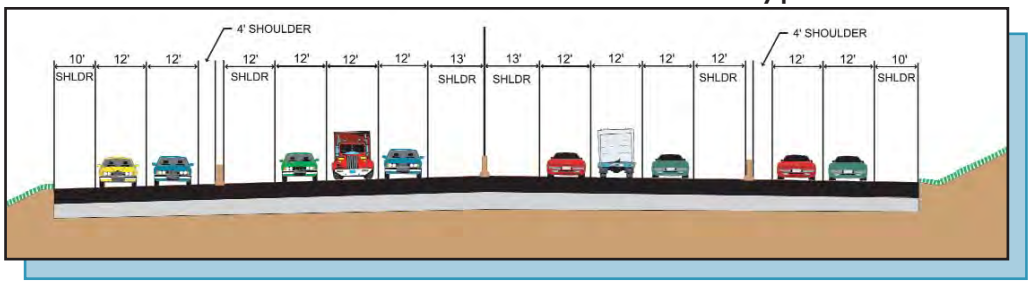
Study Concept



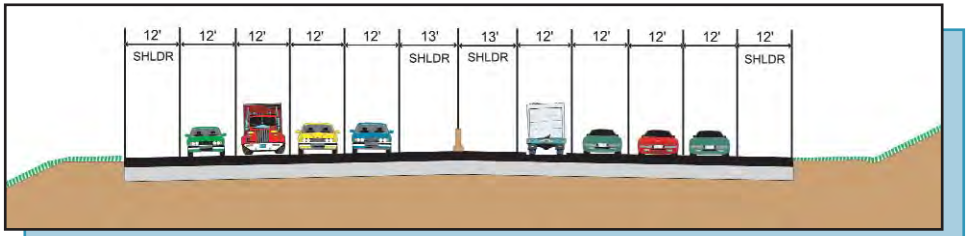
2nd Street Interchange

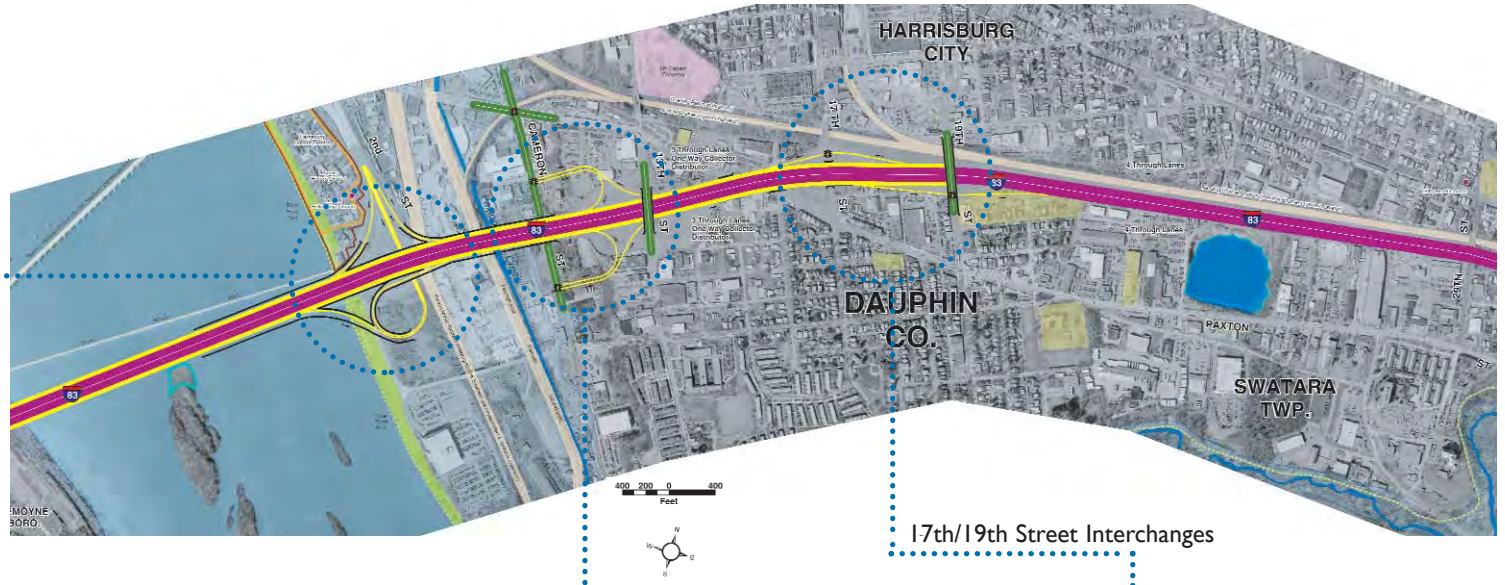
Not to Scale

East Shore Section 3 - 2nd Street to 19th Street Typical Section

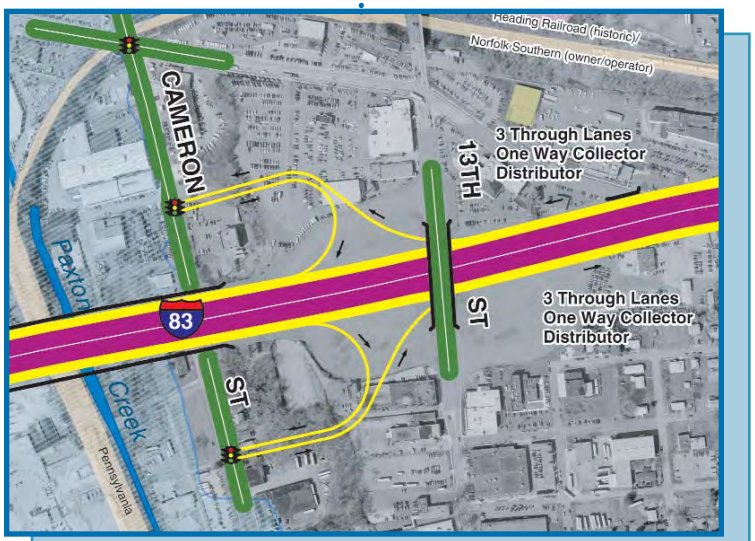


East Shore Section 3 - 19th Street to 29th Street Typical Section





13th Street Interchange



Not to Scale

17th/19th Street Interchanges

Not to Scale

Legend

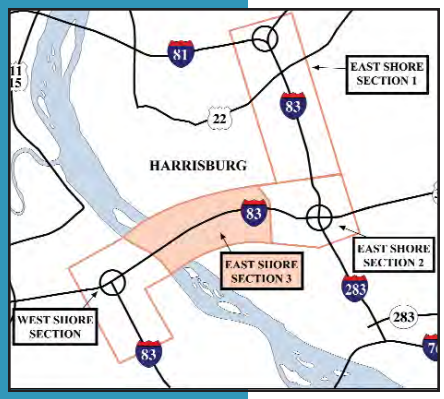
Roadway Features
- I 83 Proposed Mainline
- I 83 Proposed Ramps/Auxiliary Lanes
- Local Access Roads

Municipal/Social Features
- Places of Worship
- Public Parks
- Capital Area Greenbelt Trail
- Cemeteries

Environmental Features
- Small Streams
- Large Streams, Lakes, and Quarries
- Waterways
- Wetlands
- 100 Year Floodplains

Historic Features
- Eligible for the National Register of Historic Places
- Potentially Eligible for the National Register of Historic Places
- Shipoke Municipal Historic District
- Harrisburg Historic District (National Register Listed)

PART V: TRANSPORTATION SOLUTIONS



East Shore Section 3:

Eisenhower Interchange to the Cumberland County Line

noise studies in the environmental clearance project phase, and noise walls may likely be recommended at some locations. Communities in this area have relatively high concentrations of minority and low-income populations, and Environmental Justice issues will need to be considered.

There is the potential for effects to cultural resources between the I-83 John Harris (South) Bridge and the 19th Street Interchange. A residential area adjacent to the 19th Street ramps is likely to be potentially eligible for the National Register as an historic district. The Dock Street Dam (to the immediate north of the I-83 Bridge) and the historic rail lines (which cross under I-83 at 2nd Street) are eligible historic resources. The community of Shipoke, part of the National Register listed Harrisburg Historic District, is adjacent to the 2nd Street ramps. There is the potential for archaeological remains in undisturbed parts of the study corridor, especially pre-contact remains adjacent to the Susquehanna River and historic remains in the older sections of Harrisburg.

Along the shoreline of the Susquehanna River, RiverFront Park extends under I-83 through the study area. Also at this location, I-83 would cross the Capital Area Greenbelt, a popular linear park. From the Susquehanna River eastward to 13th Street, nearly the entire study area is within the 100-year floodplain of the river and Paxton Creek. Paxton Creek, which drains southward out of Harrisburg, is mainly channelized and features somewhat degraded water quality.

East Shore Section 3 - Constructability, System Continuity, and Signing

The constructability of the East Shore Section 3 Study Concept would be rated as "fair". The existing number of through lanes on the mainline could be maintained. Short-term ramp closures would likely be required.

The system continuity and operational characteristics of the Study Concept was rated as "good". The I-83 through traffic would be separated from the local traffic, improving mainline traffic flow. The weaving sections created on the local lanes are anticipated to operate at an acceptable level of service. At the 2nd Street interchange, the counter-intuitive situation (left lane goes right and right lane goes left) on the on-ramps would be eliminated. The direct connection to Cameron Street, eliminating the connection at 13th Street, would improve traffic operations. The operational characteristics at 17th Street and 19th Street would be improved by merging onto lower volume local lanes.

The signing characteristics for the East Shore Section 3 Study Concept were rated as "fair", as approach signing will be essential in moving exiting vehicles to the local access lanes. Incident management characteristics was rated as "good", as ITS applications can be used to direct traffic onto either the express or the local access lanes.

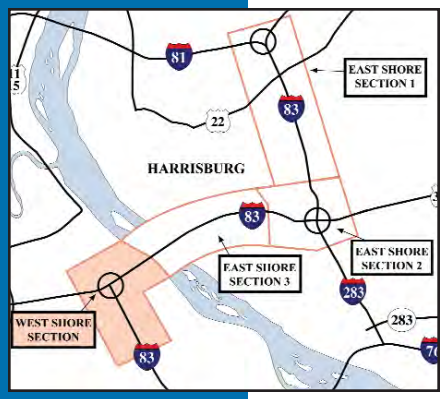
EAST SHORE SECTION 3: SUMMARY OF CONCEPT CHARACTERISTICS

December 2003 — Data represents preliminary estimates and potential impacts

	East Shore Section 3 Study Concept
Project Description	Widening of I-83 to three through lanes in each direction plus local access lanes in each direction from Cumberland County line to 19th Street (includes the John Harris (South) Bridge). From 19th Street to 29th Street, four through lanes in each direction.
Construction Cost	$504,800,000.00
Constructability/MPT	Fair[2]
System Continuity	Good[1]
Operational Characteristics	Good[1]
Signing	Fair[2]
Right of Way Required (Acres)	28-35
Residential Displacements	23-28
Business Displacements	15-20
Potential Historic Resources Impacted	I-2
Historic Archaeological Potential	Moderate/High
Prehistoric Archaeological Potential	Moderate/High
Wetland Impacts	<1 Acre
Floodplain Impacts	4 Acres
NEPA Documentation Anticipated	Categorical Exclusion Evaluation (CEE) Level 2

1. Rating of "good" exceeds minimum criteria
2. Rating of "fair" meets acceptable level or minimum criteria

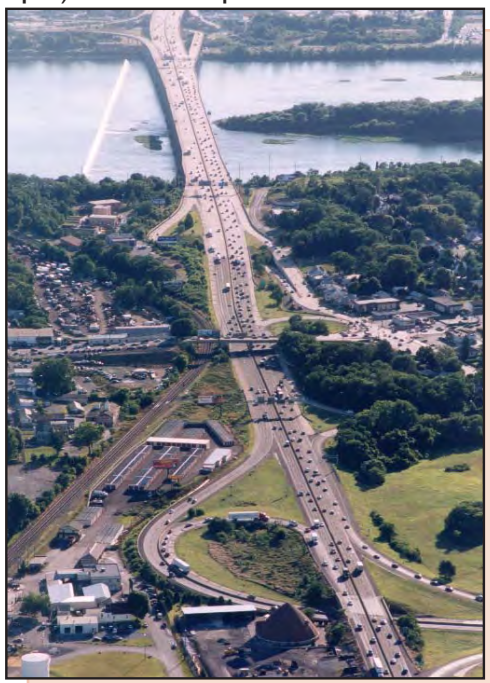
PART V: TRANSPORTATION SOLUTIONS



4. West Shore Section:

Cumberland County Line to the New Cumberland Interchange

The I-83/PA 581 Interchange (York Split) to the Susquehanna River



West Shore Section - As It Exists Today

The West Shore Section centers around the regional connection of PA 581 with northbound and southbound I-83. It is locally known as the 'York Split'. This section also includes the local interchanges of New Cumberland, Highland Park, and Lemoyne.

Like the Eisenhower Interchange farther to the east, the York Split contains design features that were acceptable when it was constructed but do not meet the current design criteria nor the traffic needs that exist today. The most apparent deficiency is that I-83 narrows to one lane in the northbound direction. This is manifested by lengthy back-ups and traveler delays, especially in the A.M. peak period.

I-83 from the New Cumberland Exit to the York Split

Southbound I-83 through the York Split maintains two lanes, but the loop radius is tight, causing problems for traffic, especially trucks, which have greater tendency for roll-overs. Local traffic enters the interchange at numerous points with short acceleration lanes and short weave distances. A notable example is the short ramp

from Brandt Avenue to I-83 northbound, just before the PA 581 / I-83 split.

Included in the West Shore Section are other local access interchanges. Between the Susquehanna River and Third Street is the Lemoyne Interchange, which features an underpass of the mainline in the southbound direction and a tight loop ramp in the northbound direction. The Highland Park Interchange provides off and on movements to I-83 northbound. South of the York Split, the New Cumberland Interchange provides full access onto Simpson Ferry Road and Carlisle Road.

West Shore Section - Design Concepts

Design concepts were developed to address the existing interchange deficiencies and to accommodate the design year (2030) traffic volumes. Several concepts were evaluated for both the I-83 mainline and for the local access ramps. Through the process of design refinement, environmental analysis, and public review, the concepts were consolidated into one West Shore Section Study Concept.

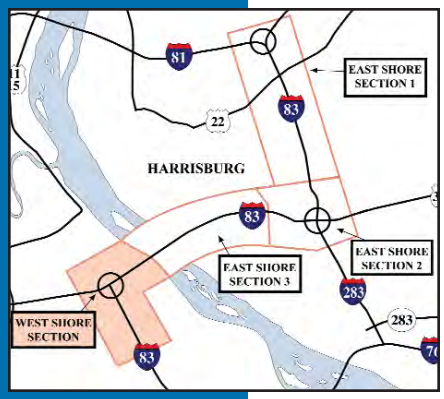
The I-83 mainline would feature three lanes in each direction, except for two lanes in the middle of the interchange due to lane drops and lane pick-ups from PA 581. On the east side, the mainline would widen to five lanes in each direction extending across the John Harris Bridge. PA 581 would directly connect with I-83. The PA 581 to I-83 northbound and the I-83 southbound to PA 581 connections would both be two lanes. The PA 581 to I-83 southbound and the I-83 northbound to PA 581 connections would both be a single lane.

A collector-distributor lane would parallel both sides of the I-83 mainline between the York Split and the New Cumberland Interchange. This feature would separate the local traffic from the through traffic, eliminating weaves on the interstate. An additional lane would be provided in each direction to connect the on and off ramps on each side of the Susquehanna River.

West Shore Section - Preliminary Environmental Impacts

As with the other I-83 Master Plan sections, one of the most substantial environmental impacts anticipated for the West Shore Section would be the required residential and commercial property acquisitions. Preliminary estimates indicate that 65 to 70 residential and 17 to 23 business displacements would be required. Both the Allendale community (on the west side of I-83) and the homes in New Cumberland Borough (on the east side of I-83) are close to the existing I-83 mainline and would be affected by the required widening. Areas of residential property along Lowther Street also would be potentially impacted. The proximity of residential communities to the proposed alignment of I-83 would necessitate future noise studies in the environmental clearance project phase, and noise walls may likely be recommended in some locations.

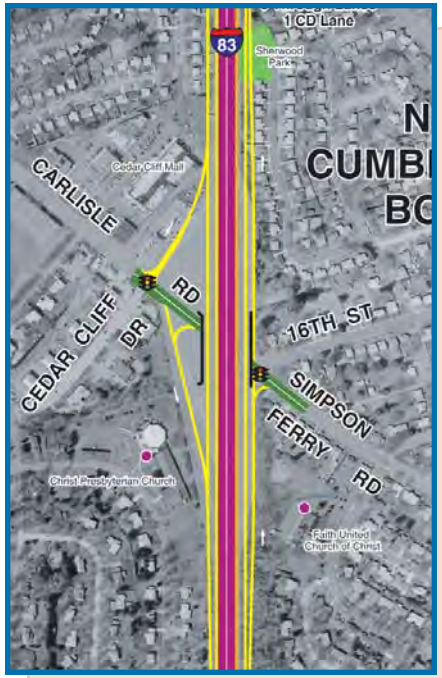
PART V: TRANSPORTATION SOLUTIONS



West Shore Section:

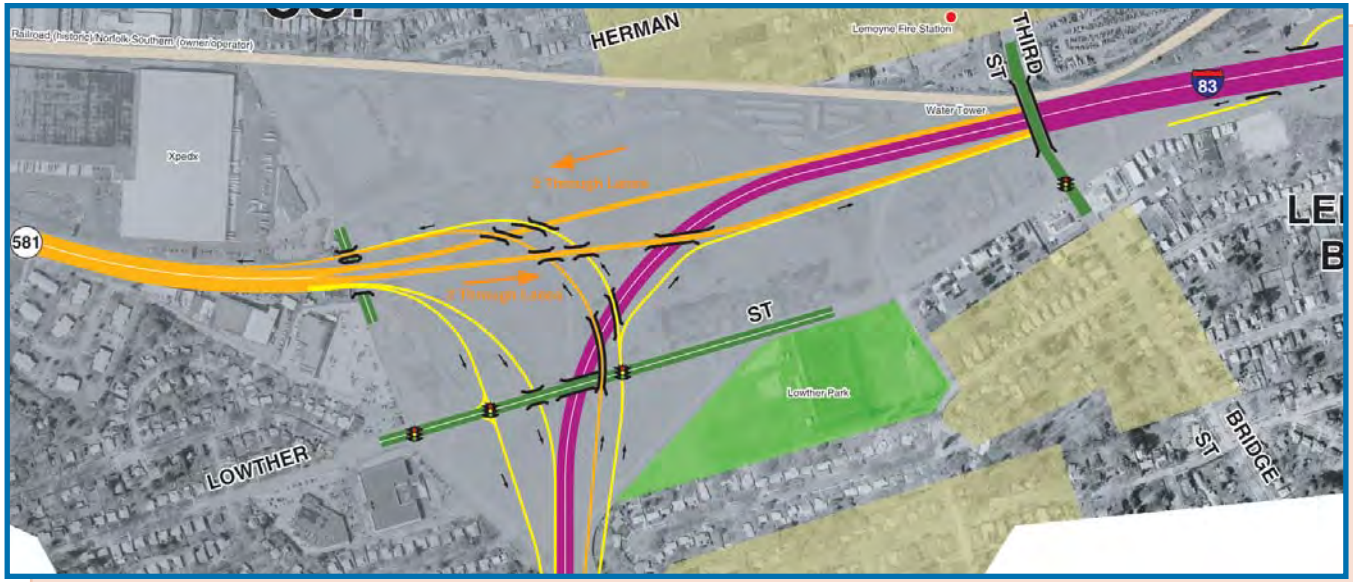
Cumberland County Line to the New Cumberland Interchange

Study Concept



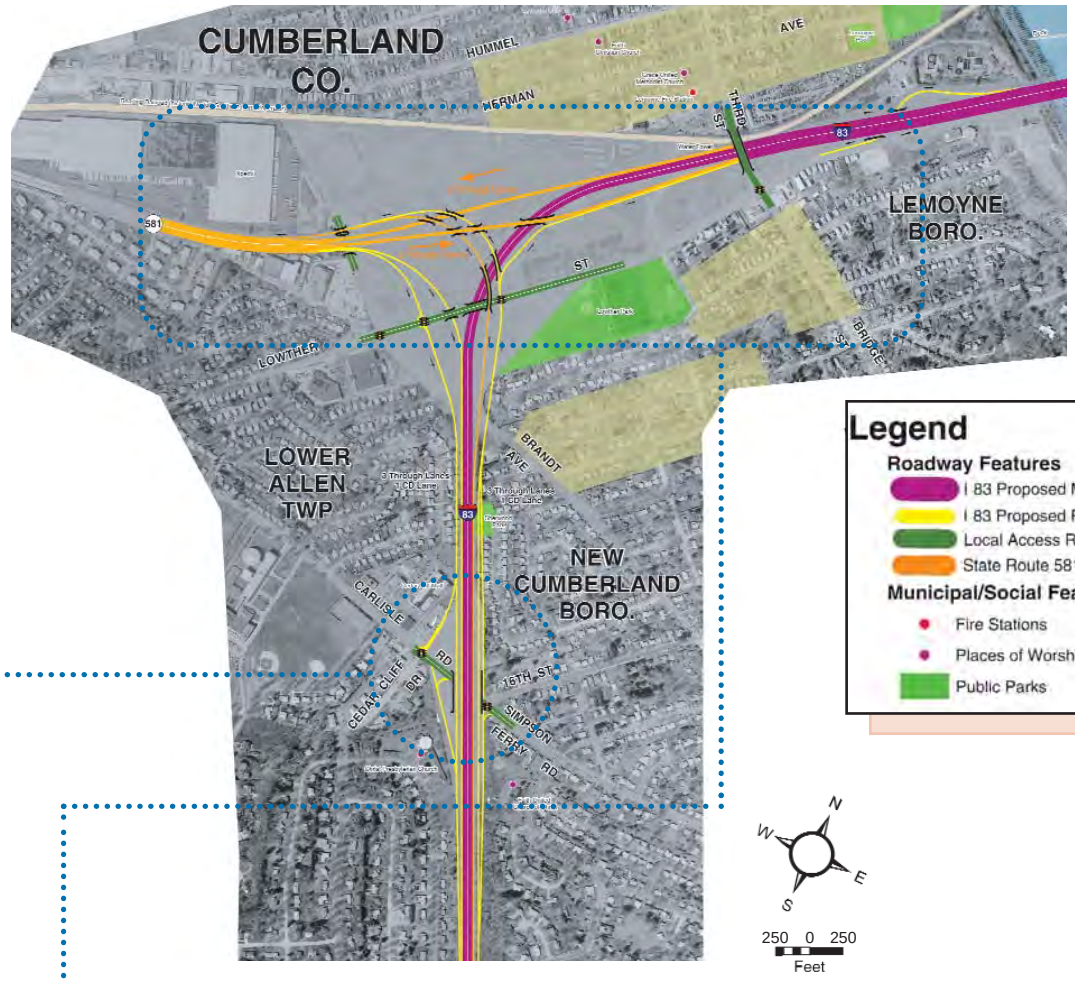
New Cumberland Interchange

Not to Scale



I-83/PA 581 Interchange (York Split)

Not to Scale



Legend

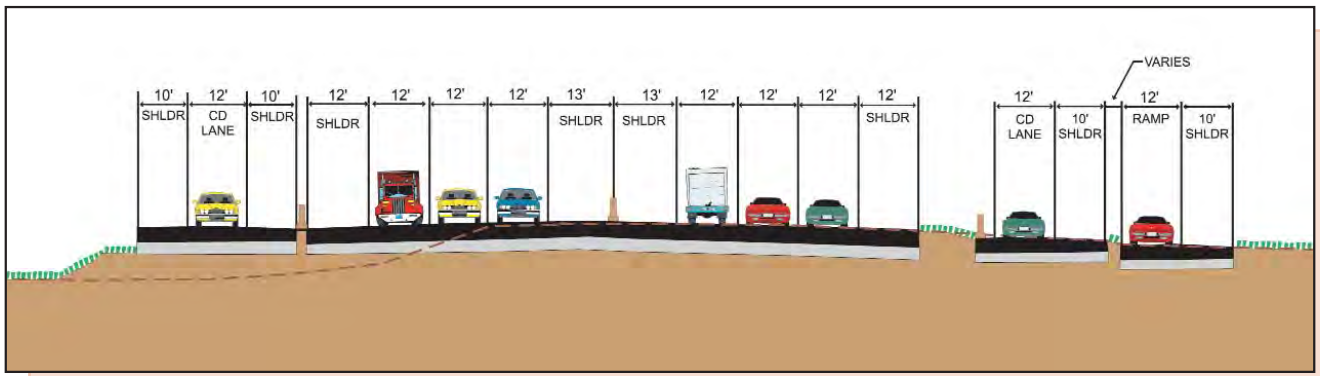
Roadway Features
- I 83 Proposed Mainline
- I 83 Proposed Ramps/Auxiliary Lanes
- Local Access Roads
- State Route 581 Proposed Mainline

Municipal/Social Features
- Fire Stations
- Places of Worship
- Public Parks

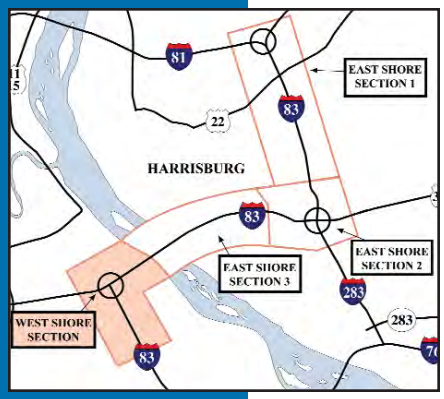
Environmental Features
- Waterways
- 100 Year Floodplains

Historic Features
- Eligible for the National Register of Historic Places
- Potentially Eligible for the National Register of Historic Places

West Shore Section - I-83 from Carlisle Rd to 581 Split Typical Section



PART V: TRANSPORTATION SOLUTIONS



West Shore Section:

Cumberland County Line to the New Cumberland Interchange

There is a limited possibility of effects to cultural resources in the York Split area. Several potential historic districts have been identified, but they appear to be outside of the potential project impact area. One resource in proximity to the existing mainline is the remains of a water tower that would be evaluated to determine if it is a contributing element to the National Register eligible Reading Railroad. There also is the potential for archaeological remains in undisturbed parts of the study corridor, especially pre-contact remains adjacent to the Susquehanna River.

The West Shore Section contains a minimum of natural resource features, and no wetlands or streams were noted in proximity to the study area. The Yellow Breeches Creek, at the York County line, is south of the study area. Several public parks are in the project vicinity. Lowther Park is just east of the interchange at Brandt Street. Sherwood Park, just north of the New Cumberland Interchange, is adjacent to the east berm of existing I-83.

West Shore Section - Constructability, System Continuity, and Signing

The constructability of the West Shore Section was rated as "fair". Traffic could be maintained on the I-83 mainline and on the PA 581 mainline during all stages of construction.

The system continuity and operational characteristics of the York Split area were rated as "good". I-83 would be the major through movement, providing high speed connections to and from PA 581. All weave sections would be removed from the I-83 mainline.

The access from New Cumberland to I-83 or to PA 581 was rated as "fair", with additional traffic signals. From the western Lemoyne area (10th Street / Lowther Street), the access to I-83 and PA 581 was rated as "good". The access from the eastern Lemoyne area (3rd Street / Bridge Street) was rated as "fair", with acceptable access conditions to and from PA 581. Local access between New Cumberland and Lemoyne was rated as "good", using the collector-distributor roads on either side of I-83. The level of service for the Lowther Street corridor was rated as "fair", with most intersections operating at an acceptable level or better, but with some movements at Lowther and 3rd Streets at a marginal level of service. The level of service for the Simpson Ferry / Carlisle Road corridor was rated as "fair", all intersections operating at an acceptable level or better.

The signing characteristics of the West Shore Section were rated as "fair". The signing would be improved over the existing condition because I-83 would become the mainline movement, PA 581 would use conventional right side off/on ramps, and local access ramp movements would be consolidated.

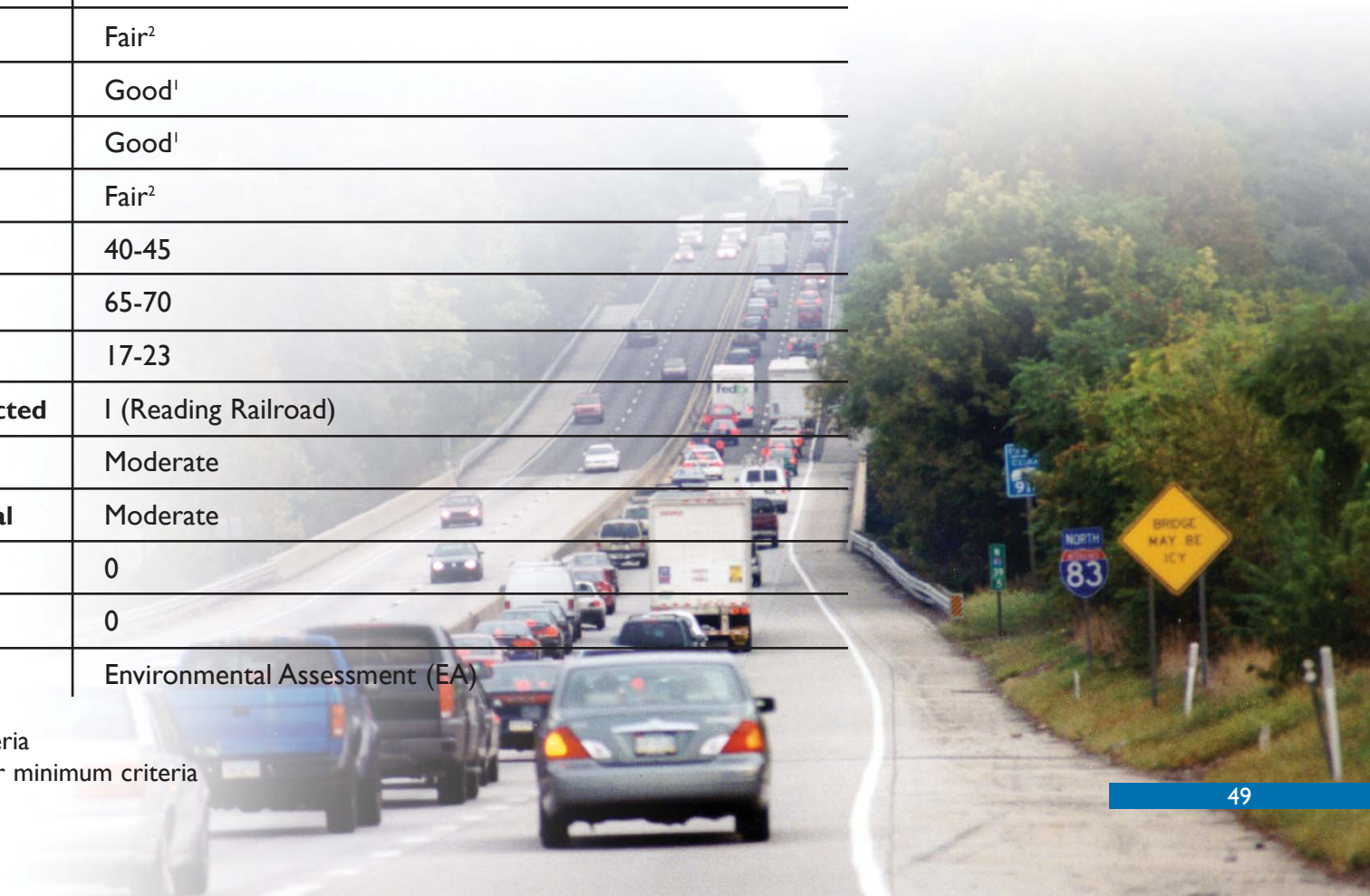
WEST SHORE SECTION: SUMMARY OF CONCEPT CHARACTERISTICS

December 2003

Data represents preliminary estimates and potential impacts

	West Shore Section Study Concept
Project Description	High speed directional interchange between I-83 and PA 581 with collector-distributor lanes and improved local access ramps
Construction Cost	$134,500,000.00
Constructability/MPT	Fair[2]
System Continuity	Good[1]
Operational Characteristics	Good[1]
Signing	Fair[2]
Right of Way Required (Acres)	40-45
Residential Displacements	65-70
Business Displacements	17-23
Potential Historic Resources Impacted	1 (Reading Railroad)
Historic Archaeological Potential	Moderate
Prehistoric Archaeological Potential	Moderate
Wetland Impacts	0
Floodplain Impacts	0
NEPA Documentation Anticipated	Environmental Assessment (EA)

1. Rating of "good" exceeds minimum criteria
2. Rating of "fair" meets acceptable level or minimum criteria



I-83 MASTER PLAN

The motorists of tomorrow will be the ultimate beneficiaries of today's planning process.

Project Deployment Plan

This planning study, the I-83 Master Plan, has provided an overview of the conditions on the I-83 corridor from the New Cumberland Interchange to I-81. The existing traffic problems were identified, and future traffic volumes were calculated. Crash data was collected to identify high incident areas. Areas of substandard roadway were noted.

The corridor-wide needs were:

- Deterioration of the existing roadway
- Congested conditions from high traffic volumes
- Operational safety concerns from substandard design characteristics

After identifying the problems, solutions were considered. Various TSM and ITS strategies that would allow the existing and proposed system to function more efficiently were investigated. Additionally, proposed transit improvements were identified and incorporated into the overall transportation system planning. The deployment plan of the ITS and transit projects is highlighted in following pages of this document. Finally, design concepts were developed to improve the specific deficiencies of the highway network. The I-83 corridor was divided into four sections, based on logical termini and independent utility. A Study Concept was developed for each of the sections that provided local and regional traffic solutions, approximated the range of environmental issues that would need to be addressed, and provided an estimated construction cost.

The logical conclusion of this planning study is identifying the sequence of projects and the time frame for engineering design and construction. Each project, or section, would need to go through the following process:

- Preliminary Engineering (Includes Environmental Clearance)
- Final Design
- Right-of-Way Acquisition / Utilities
- Construction

It was determined that each of the four sections could be divided further into construction contract sub-sections. The accompanying tables in the Highway Deployment Plan Section list the specific contracts for each section, which were identified at this time for project programming purposes.
After the consultant selection process, the preliminary engineering and environmental analysis would be performed on the entire section. Following the environmental clearance, the final design, right-of-way, and utility work would be completed for each construction contract sub-section incrementally. Finally, the construction also would occur sequentially for each of the construction contract sub-sections.

As demonstrated on the I-83 Project Deployment Schedule, the work on the four sections would be staggered so that, for example, as the first section was entering final design, the next section would begin preliminary engineering.

By entering into this planned approach, PENNDOT and the MPO have assured that the improvements to this economically important highway corridor are completed in an effective and a fiscally responsible manner. The sequence of projects will be planned so that each completed section results in improved system-wide operational characteristics. The motorists of tomorrow will be the ultimate beneficiaries of today's planning process.

PART VI: PROJECT DEPLOYMENT PLAN

A. ITS Deployment Plan

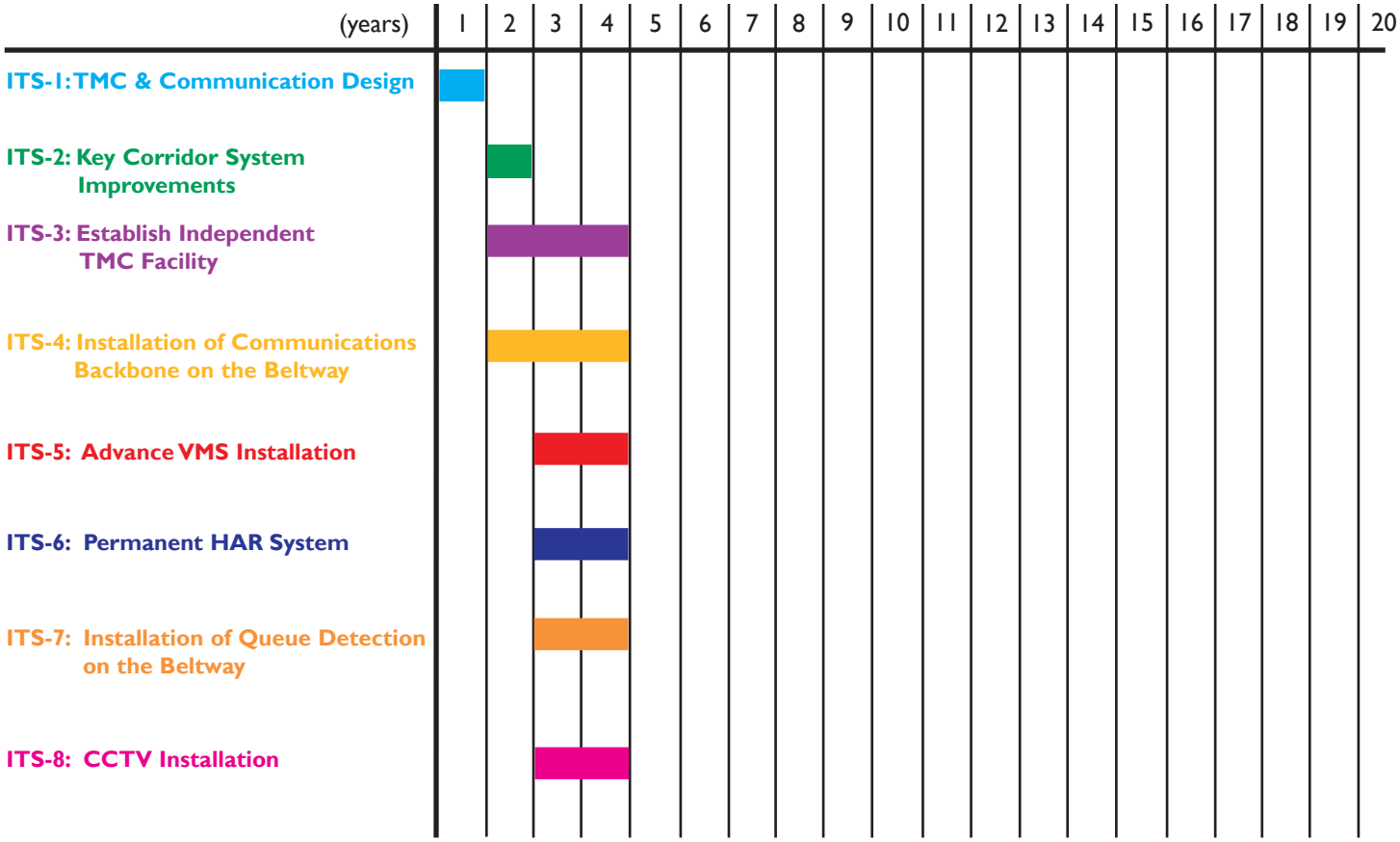
As discussed earlier in this document, the implementation of the Intelligent Transportation Systems strategies will allow the existing transportation system to function with increased efficiency, with or without the required highway improvements. The preliminary cost and the anticipated schedule for the potential deployment of the individual ITS strategies has been included in this Master Plan for consideration along with the transit and highway construction improvements.

ITS Project No.	Description	Cost(x1000)**
ITS-1	**Transportation Management Center (TMC) and Communication Design** - Revise / Update the EDP - TMC Space & Resource Assessment - ITS Communications Strategy	800
ITS-2	**Key Corridor System Improvements**	300
ITS-3	**Establish Independent Transportation Management Center (TMC) Facility**	2,500
ITS-4	**Installation of Communications Backbone on the Beltway**	
	A. Rt 581 - I-83 to Rt 15	283 (with Rt 15 / 581 project)
	B. Rt 581 - Rt 15 to I-81	1,676
	C. I-81 (Cumberland) - Rt 581 to Rt 11/15	2,332
	D. I-81 (Dauphin) - Rt 11/15 to I-83	2,248
ITS-5*	**Advanced Variable Message Sign (VMS) Installation**	
	A. Install 4 VMS Boards on I-83(2), I-283(1) and US 322(1)	1,100
	B. Install 3 VMS Boards on Rt 581 north of Rt 11	560
ITS-6*	**Permanent Highway Advisory Radio (HAR) System**	320
ITS-7	**Installation of Queue Detection on the Beltway**	
	A. I-81 Approaching I-83 9 Detectors	210
	B. I-81 Various Locations (34 Detectors)	800
	C. Rt 581 Various Locations (24 Detectors)	600
ITS-8*	**Closed Circuit TV (CCTV) Installation at Various Locations**	150
	TOTAL	13,879

* Note: The remaining installation of Communication Backbone, VMS and Queue Detection on I-83 will be accomplished within each respective construction contract and is not included in this table.

** Includes design and construction costs.

ITS IMPLEMENTATION SCHEDULE



PART VI: PROJECT DEPLOYMENT PLAN

B. Transit Deployment Plan*

The deployment of CORRIDOR*one* and other transit initiatives, such as expanded bus routes, will have the effect of removing traffic from the regional roadway system. The future traffic projections for I-83 factored in the CORRIDOR*one* ridership. The completion of both phases of CORRIDOR*one* is anticipated, with ITS and roadway improvements, to provide a more effective and complete transportation solution for the Harrisburg Area. CORRIDOR*two*, linking York, Hershey, and Lebanon, is in the conceptual planning stage and no specific implementation schedule has been developed at this time.

The proposed I-83 improvements are being planned in conjunction with the future transit initiatives. The Study Concept for East Shore Section 3 includes provisions for preservation of the rail corridor for future commuter rail projects. The Norfolk Southern rail lines are immediately north of the I-83 corridor in this area, and retaining walls are included in the Study Concept to minimize right-of-way requirements. The anticipated cost of the retaining wall is $6.4 million, and has been factored into the construction cost in Section V-B-3 of this I-83 Master Plan.

In July 2002, Capital Area Transit, in partnership with the Modern Transit Partnership, submitted a CORRIDOR*one* Transitional Analysis to the Federal Transit Administration (FTA). The transitional analysis is part of an application to FTA for funding to begin preliminary engineering.

Phase I Implementation Schedule:

Preliminary Engineering	June 2004
Design & Construction	2004-2007
Harrisburg to Lancaster Service	Dec. 2005
East Mechanicsburg to Harrisburg Service	July 2007

Project Cost

The CORRIDOR*one* cost estimate includes operating, maintenance, and capital costs. The costs are presented in year 2002 dollars. The following sections summarize the elements included in each cost category:

Operations and Maintenance

Capital Area Transit has a current annual operating and maintenance cost for its fixed route bus system of approximately $7.5 million - Red Rose Transit is $5.5 million. The expanded bus (including existing operations) and MOS/Keystone Corridor rail estimated operations and maintenance costs are $33.1 million per year consisting of:

Rail	$14.4 million per year
Bus	$18.7 million per year
Total	$33.1 million per year

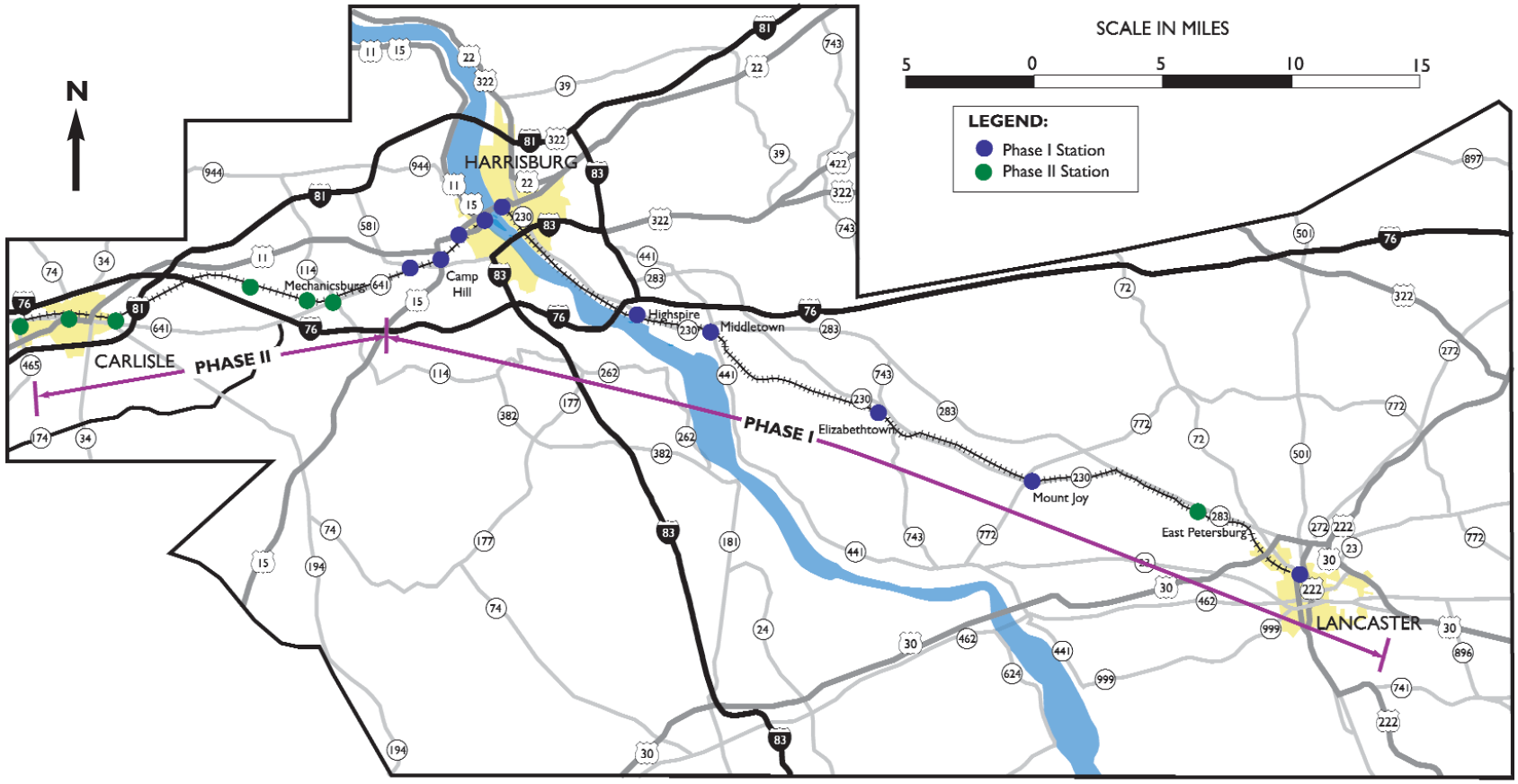
Capital Requirements by major task:

Construction	$57.1 million
Environmental, Engineering, Construction & Program Management	$12.0 million
Agency Oversight	$1.7 million
Subtotal Rail	$70.8 million
Additional Buses and Route Amenities	$5.0 million
Total	$75.8 million

Costs are based on 2002 dollars.

* Information obtained from Capital Area Transit (CAT) publications

TRANSIT DEPLOYMENT PLAN (CONTINUED)

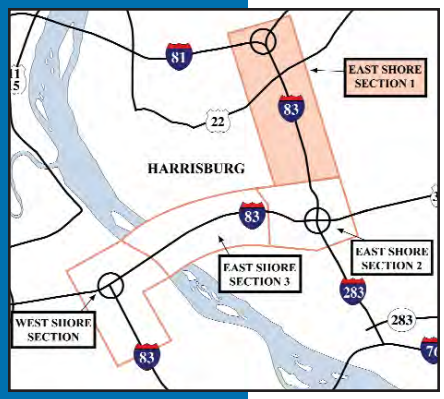


CORRIDOR*one* Deployment Plan

Phase I: The initial operating phase or Minimum Operating Segment (MOS) would extend from Lancaster to East Mechanicsburg.

Phase II: The second phase would extend service westward from East Mechanicsburg to Carlisle.

PART VI: PROJECT DEPLOYMENT PLAN



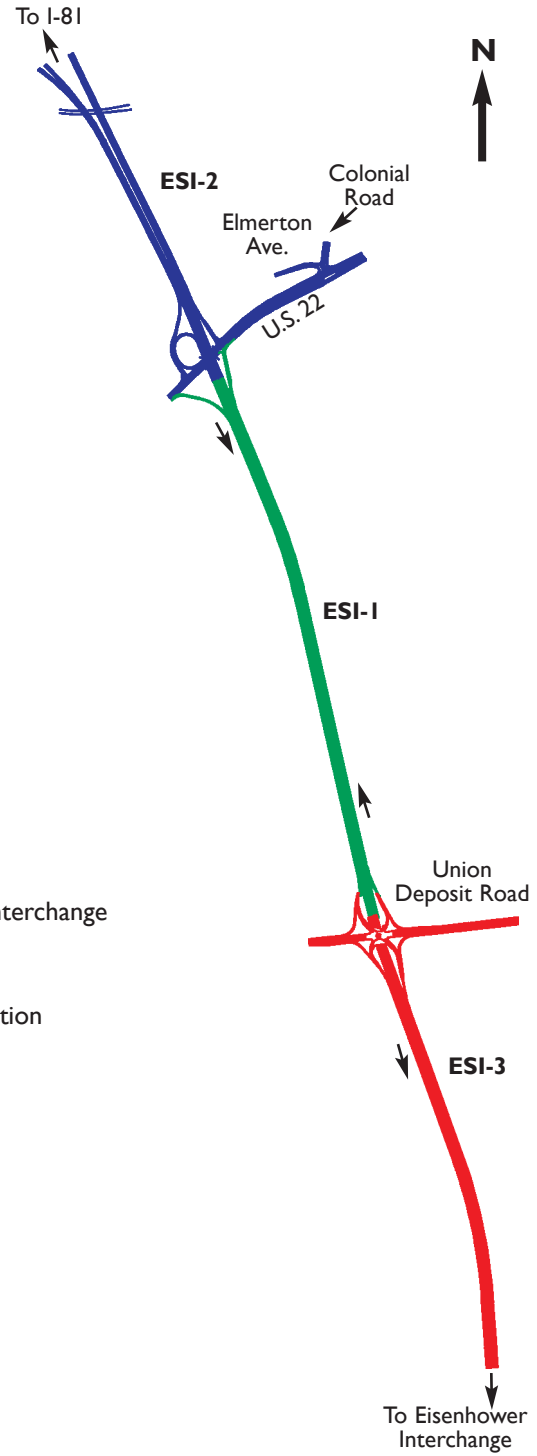
C. Highway Construction Deployment Plan

1. Construction Contract Sub-Sections for East Shore Section 1:

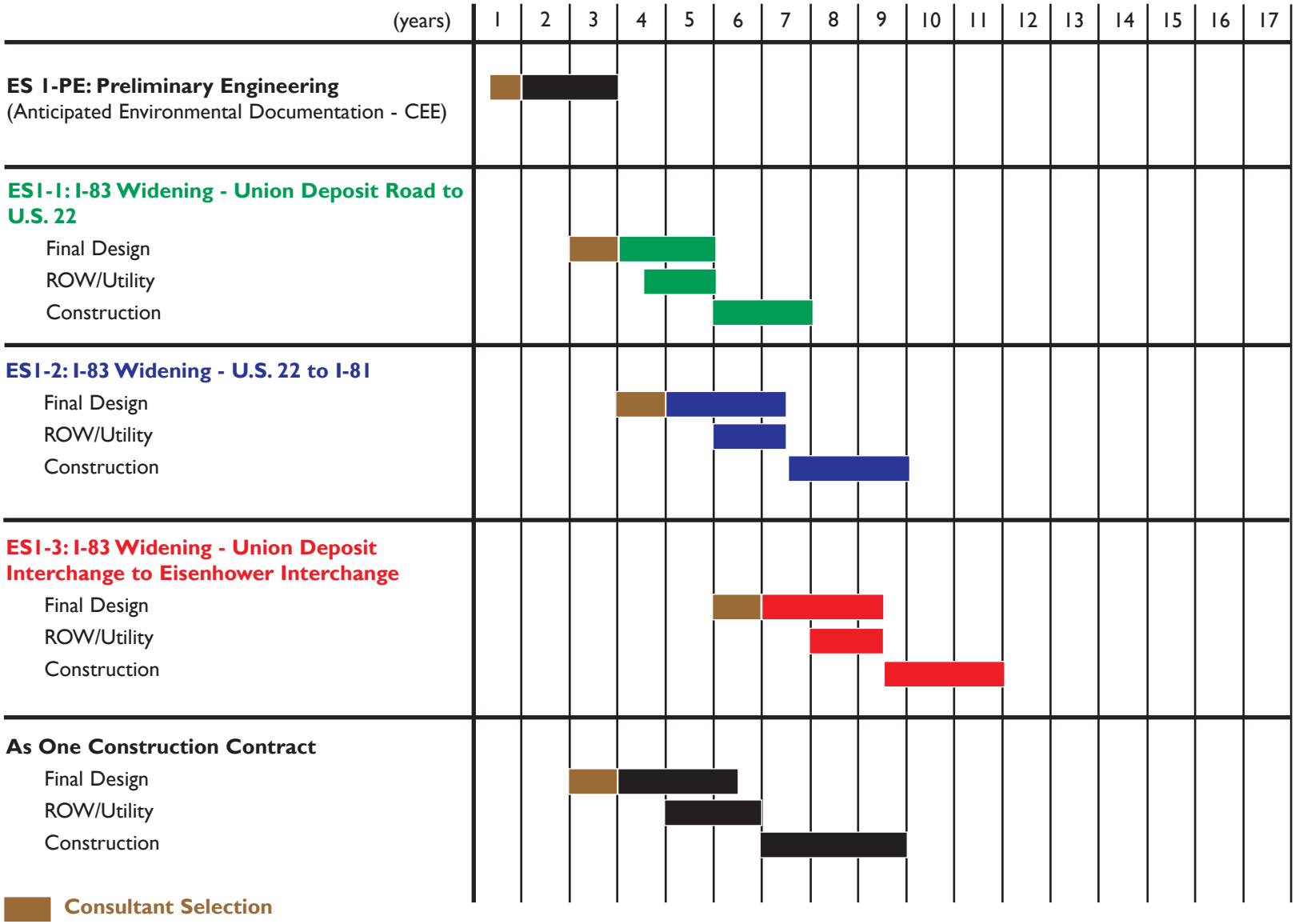
I-81 to the Eisenhower Interchange

Section	Description
ESI-PE	**Preliminary Engineering-Anticipated Environmental Documentation (CEE)**
ESI-1	**I-83 Widening: Union Deposit Road to U.S. 22** - Completion of ITS initiatives for Section 1 - Widen and reconstruct I-83 mainline to 8 lanes - Temporary ramps at existing Colonial Park Interchange
ESI-2	**I-83 Widening: U.S. 22 to I-81** - Widen and reconstruct I-83 mainline to 8 lanes - Reconstruct the Colonial Park Interchange - Valley Road-Duel Bridge Widening - Retaining Walls - Elmerton Avenue Bridge Replacement - Upgrading of U.S. 22 / Colonial Road Intersection including WB U.S. 22 grade separation
ESI-3	**I-83 Widening: Union Deposit Interchange to Eisenhower Interchange** - Widen and reconstruct I-83 mainline to 8 lanes - Reconstruction of Union Deposit Interchange (SPUI)

Est. Cost (x1000)	ESI-PE (Total Section)	ESI-1	ESI-2	ESI-3	Total
Prelim. Engineering	4,000	---	---	---	4,000
Final Design	---	4,200	3,200	2,000	9,400
ROW/Utility	---	5,300	5,700	3,100	14,100
Construction	---	44,200	44,700	39,200	128,100
Total	4,000	53,700	53,600	44,300	155,600

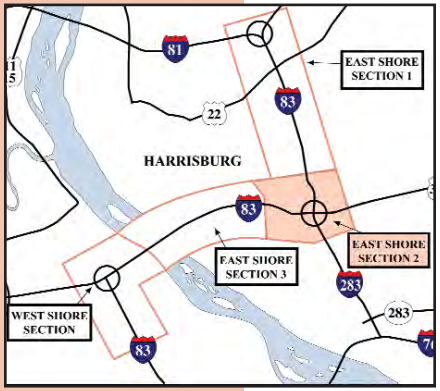


I-83 PROJECT DEPLOYMENT SCHEDULE: EAST SHORE SECTION 1 (ES-1)



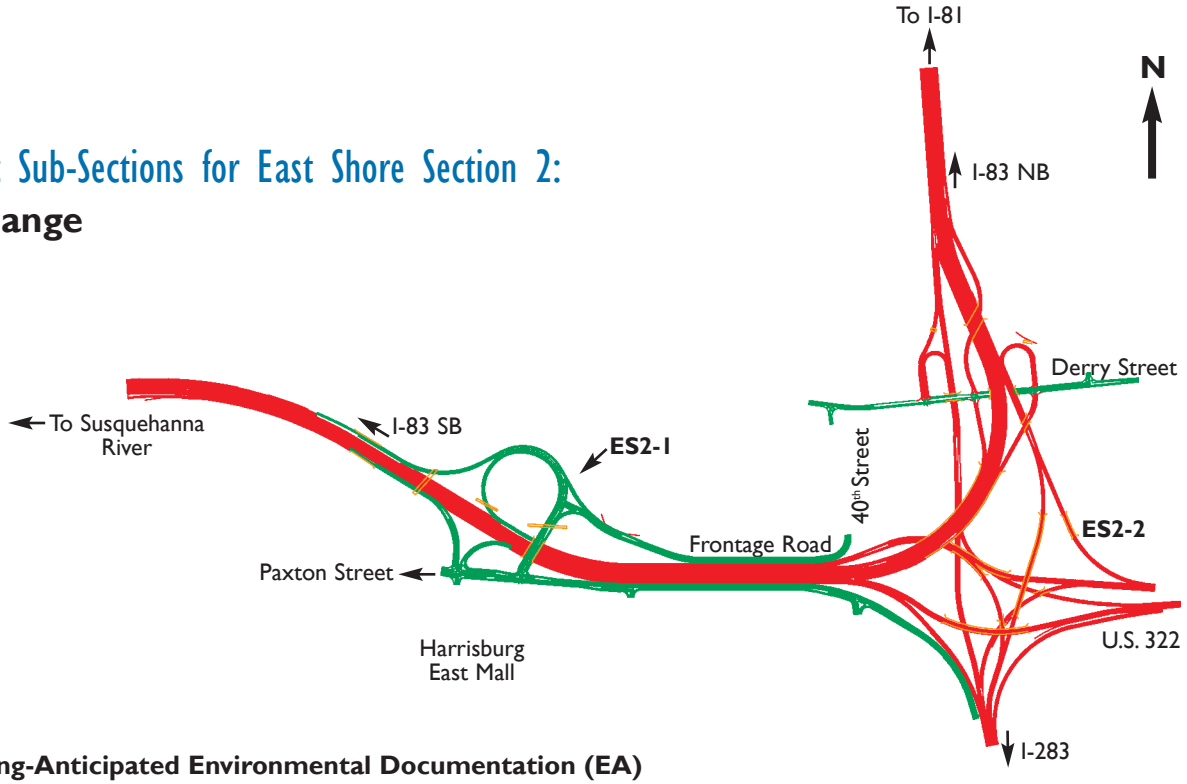
Schedule based on availability of funding for design and construction

PART VI: PROJECT DEPLOYMENT PLAN



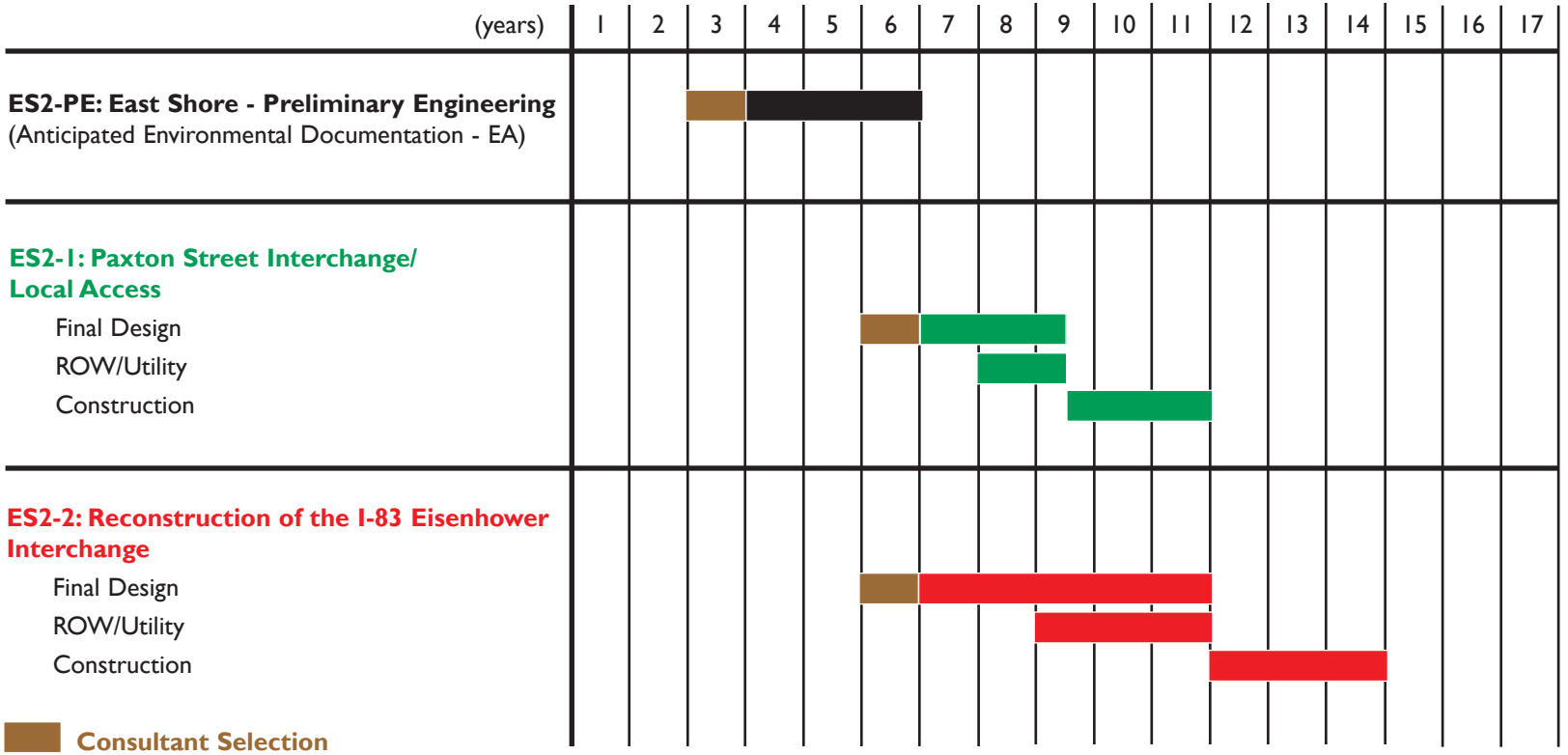
2. Construction Contract Sub-Sections for East Shore Section 2:

Eisenhower Interchange



Section	Description
ES2-PE	**Preliminary Engineering-Anticipated Environmental Documentation (EA)**
ES2-1	**Paxton Street Interchange/Local Access** - Completion of ITS initiatives for Section 2 - New Paxton Street widening from Harrisburg East Mall to PA 441 - North side local access road from 40th Street to Paxton Street Interchange (Along I-83 SB) - Derry Street Improvements
ES2-2	**Reconstruction of the I-83 Eisenhower Interchange** - Reconstruction of the Eisenhower Interchange and I-83 mainline from the 29th Street overpass to north of Derry Street - Reconstruction of Derry Street Interchange

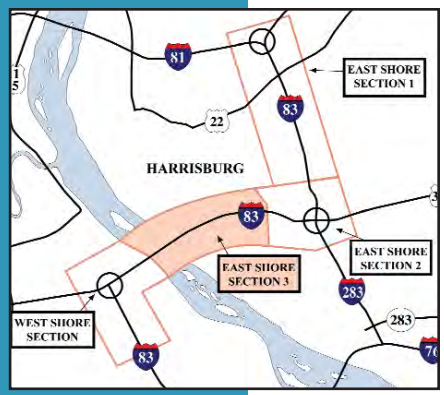
I-83 PROJECT DEPLOYMENT SCHEDULE: EAST SHORE SECTION 2 (ES-2)



Schedule based on availability of funding for design and construction

Est. Cost (x1000)	ES2-PE (Total Section)	ES2-1	ES2-2	Total
Prelim. Engineering	5,000	---	---	5,000
Final Design	---	3,000	12,000	15,000
ROW/Utility	---	12,700	18,200	30,900
Construction	---	31,400	187,400	218,800
Total	5,000	47,100	217,600	269,700

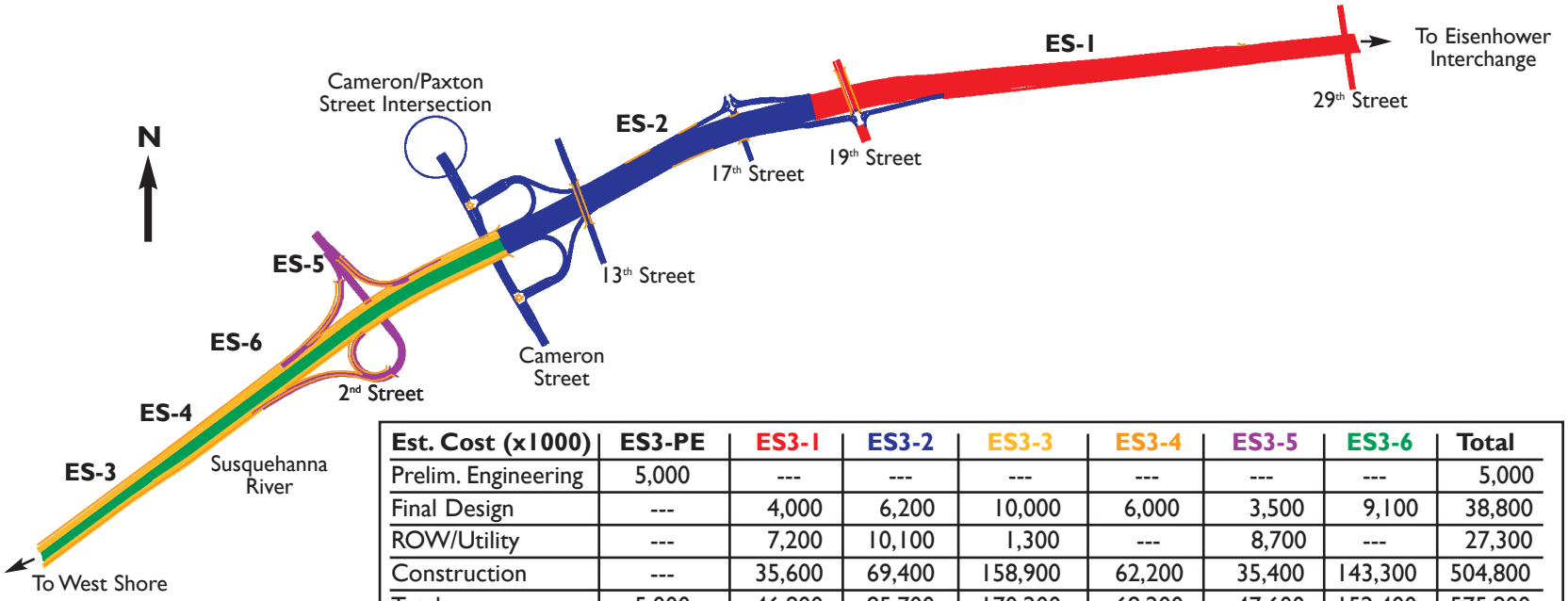
THE I-83 MASTER PLAN



3. Construction Contract Sub-Sections for East Shore Section 3:

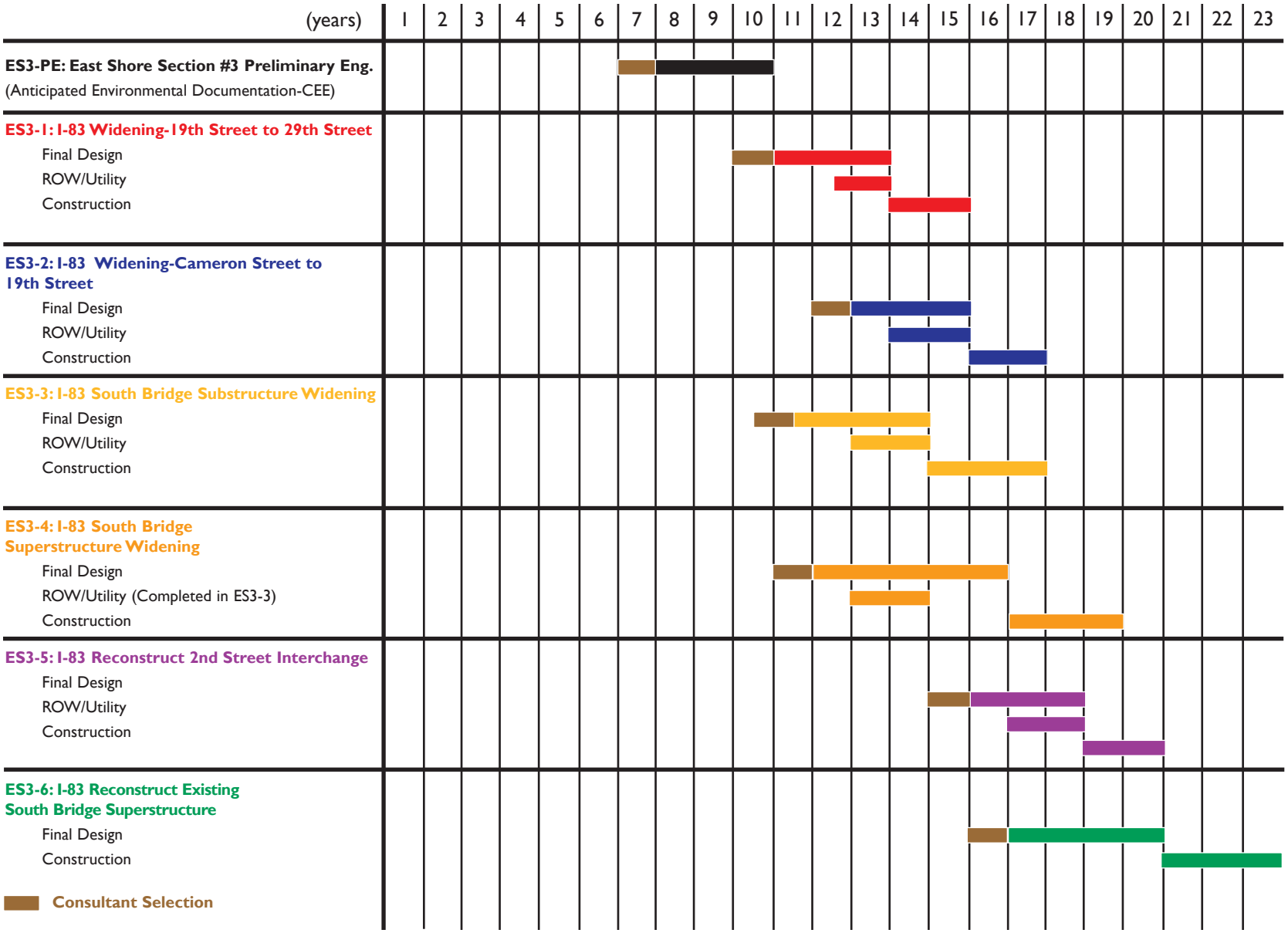
Eisenhower Interchange to the Cumberland County Line

Section	Description
ES3-PE	**Preliminary Engineering-Anticipated Environmental Documentation (CEE)**
ES3-1	**I-83 Widening - 19th Street to 29th Street** - Completion of ITS initiatives for Section 3 - Widen and reconstruct I-83 mainline to 8 lanes
ES3-2	**I-83 Widening - Cameron Street to 19th Street** - Widen and reconstruct I-83 mainline to 10 lanes - New Cameron Street Interchange - Cameron Street Widening - Improvements to Cameron / Paxton Street Intersection
ES3-3	**I-83 South Bridge Substructure Widening**
ES3-4	**I-83 South Bridge Superstructure Widening** - Widen NB and SB South Bridge Superstructure
ES3-5	**I-83, Reconstruct 2nd Street Interchange**
ES3-6	**I-83, Reconstruct Existing South Bridge Superstructure**



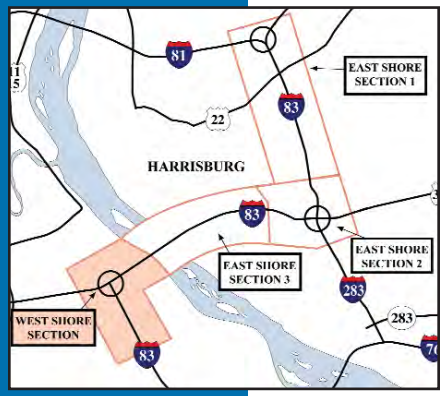
Est. Cost (x1000)	ES3-PE	ES3-1	ES3-2	ES3-3	ES3-4	ES3-5	ES3-6	Total
Prelim. Engineering	5,000	---	---	---	---	---	---	5,000
Final Design	---	4,000	6,200	10,000	6,000	3,500	9,100	38,800
ROW/Utility	---	7,200	10,100	1,300	---	8,700	---	27,300
Construction	---	35,600	69,400	158,900	62,200	35,400	143,300	504,800
Total	5,000	46,800	85,700	170,200	68,200	47,600	152,400	575,900

I-83 PROJECT DEPLOYMENT SCHEDULE: EAST SHORE SECTION 3 (ES-3)



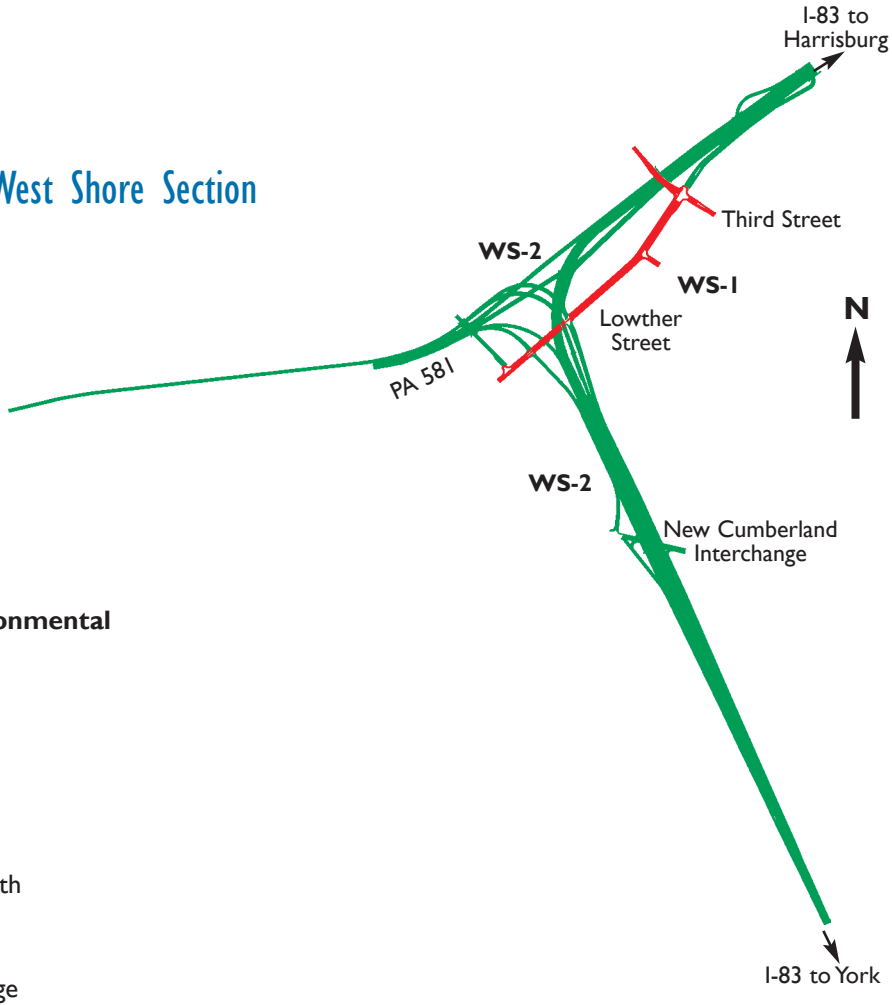
Schedule based on availability of funding for design and construction

PART VI: PROJECT DEPLOYMENT PLAN



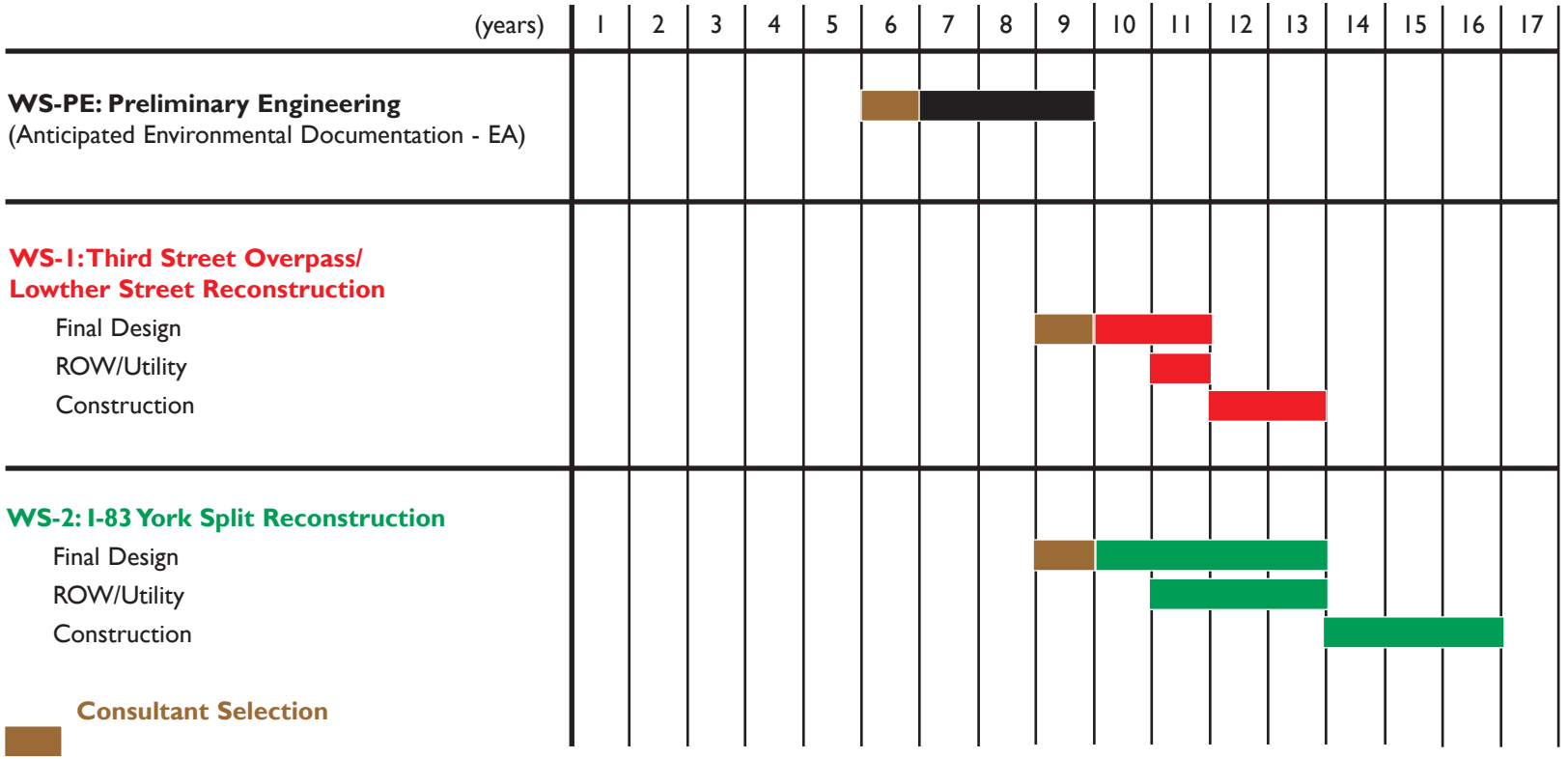
4. Construction Contract Sub-Sections for West Shore Section

Cumberland County Line to the New Cumberland Interchange



Section	Description
WS-PE	**Preliminary Engineering-Anticipated Environmental Documentation (EA)**
WS-1	**Third Street Overpass / Lowther Street Reconstruction** - Completion of ITS initiatives for the West Shore Section
WS-2	**I-83 York Split Reconstruction** - Widen and reconstruct I-83 mainline from south of the New Cumberland Interchange to the South Bridge - Reconstruction of the I-83 / PA 581 Interchange - Reconstruction of the Lemoyne Interchange

I-83 PROJECT DEPLOYMENT SCHEDULE: WEST SHORE SECTION (WS)

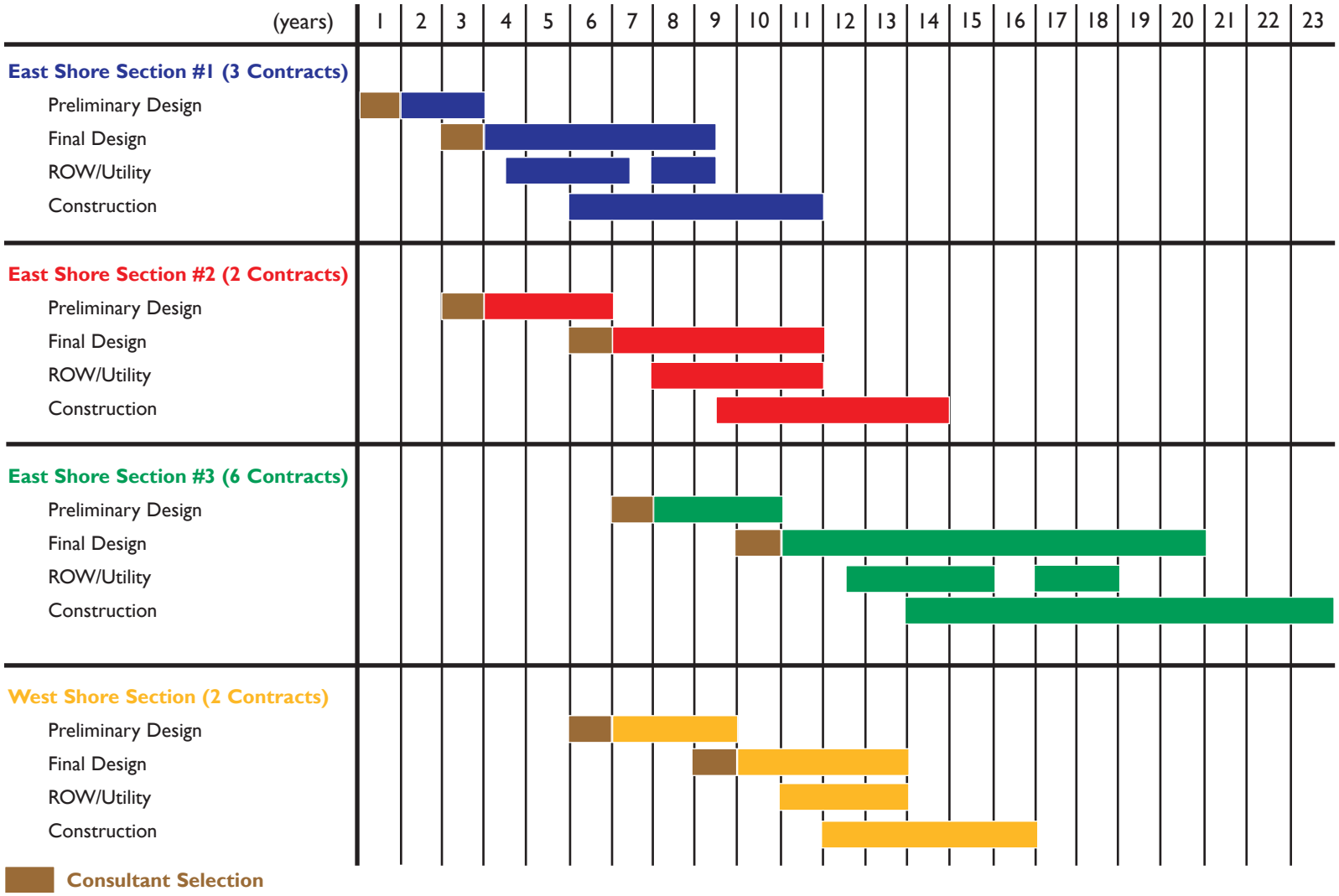


Schedule based on availability of funding for design and construction

Est. Cost (x1000)	WS-PE	WS-1	WS-2	Total
Prelim. Engineering	5,000	---	---	5,000
Final Design	---	2,900	10,000	12,900
ROW/Utility	---	4,500	33,900	38,400
Construction	---	10,800	123,700	134,500
Total	5,000	18,200	167,600	190,800

PART VI: PROJECT DEPLOYMENT PLAN

5. I-83 Project Deployment Schedule



Schedule based on availability of funding for design and construction

PART VII: I-83 MASTER PLAN - PROJECT PARTICIPANTS

The Study Team:

PENNDOT District 8

PENNDOT Central Office - Bureau of Design

Federal Highway Administration

McCormick Taylor Consultant Team

with: Greenhorne & O'Mara, Inc.

HNTB Corporation

Skelly & Loy, Inc.

Community Planning Consultants, Inc.

Advanced Technology Solutions, Inc.

Applied Geoscience & Engineering, Inc.

BAE Systems ADR

Study Area Municipalities:

Cumberland County:

- Camp Hill Borough
- Lemoyne Borough
- Lower Allen Township
- New Cumberland Borough

Dauphin County:

- City of Harrisburg
- Lower Paxton Township
- Paxtang Borough
- Susquehanna Township
- Swatara Township

York County:

- Fairview Township

Planning Agencies:

Tri-County Regional Planning Commission

Cumberland County Planning Commission

Dauphin County Planning Commission

Other Project Stakeholders:

Capital Beltway Advisory Committee

PA State Police Troop 4

Colonial Park Mall

Harrisburg Regional Chamber of Commerce

West Shore Chamber of Commerce

Emergency Service Providers