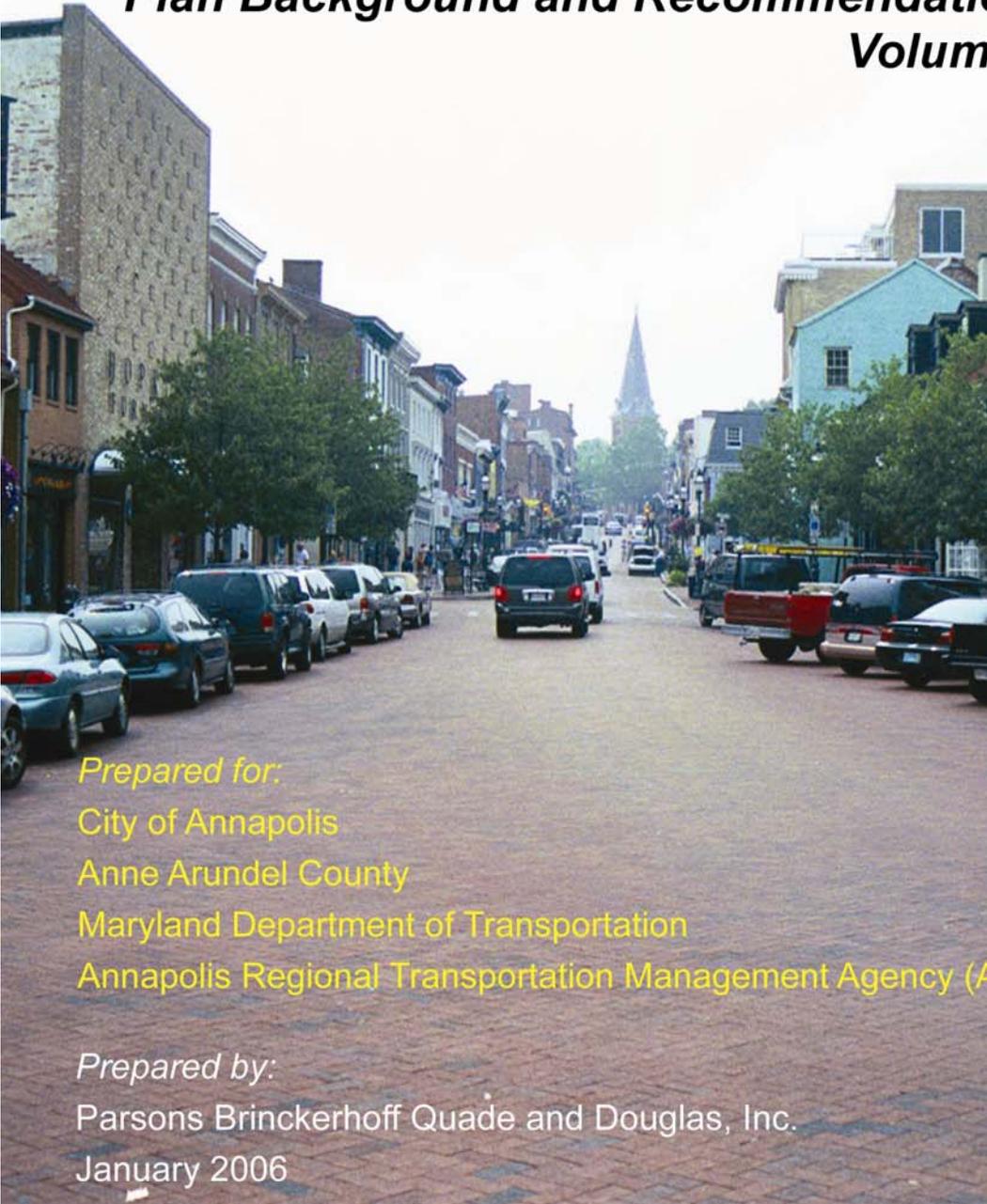




# Annapolis Regional Transportation Vision and Master Plan

## Plan Background and Recommendations Volume II



Prepared for:  
 City of Annapolis  
 Anne Arundel County  
 Maryland Department of Transportation  
 Annapolis Regional Transportation Management Agency (ARTMA)

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# INTRODUCTION

## STUDY AREA

The *Annapolis Regional Transportation Vision and Master Plan* study area is centrally located in Anne Arundel County on a peninsula containing two important centers – the City of Annapolis and Parole (Figure 1). The City of Annapolis accommodates a wide range of governmental functions as the County Seat and State Capital. It is also the home of St. Johns College and the U.S. Naval Academy. The City has a number of mixed-use centers including downtown, Eastport, and areas adjacent to Forest Drive, West Street and Rowe Boulevard. The Annapolis area has a worldwide reputation for sailing with a thriving boating industry and sailing events. Tourism is a significant economic force with approximately 4 million annual visits to the study area.

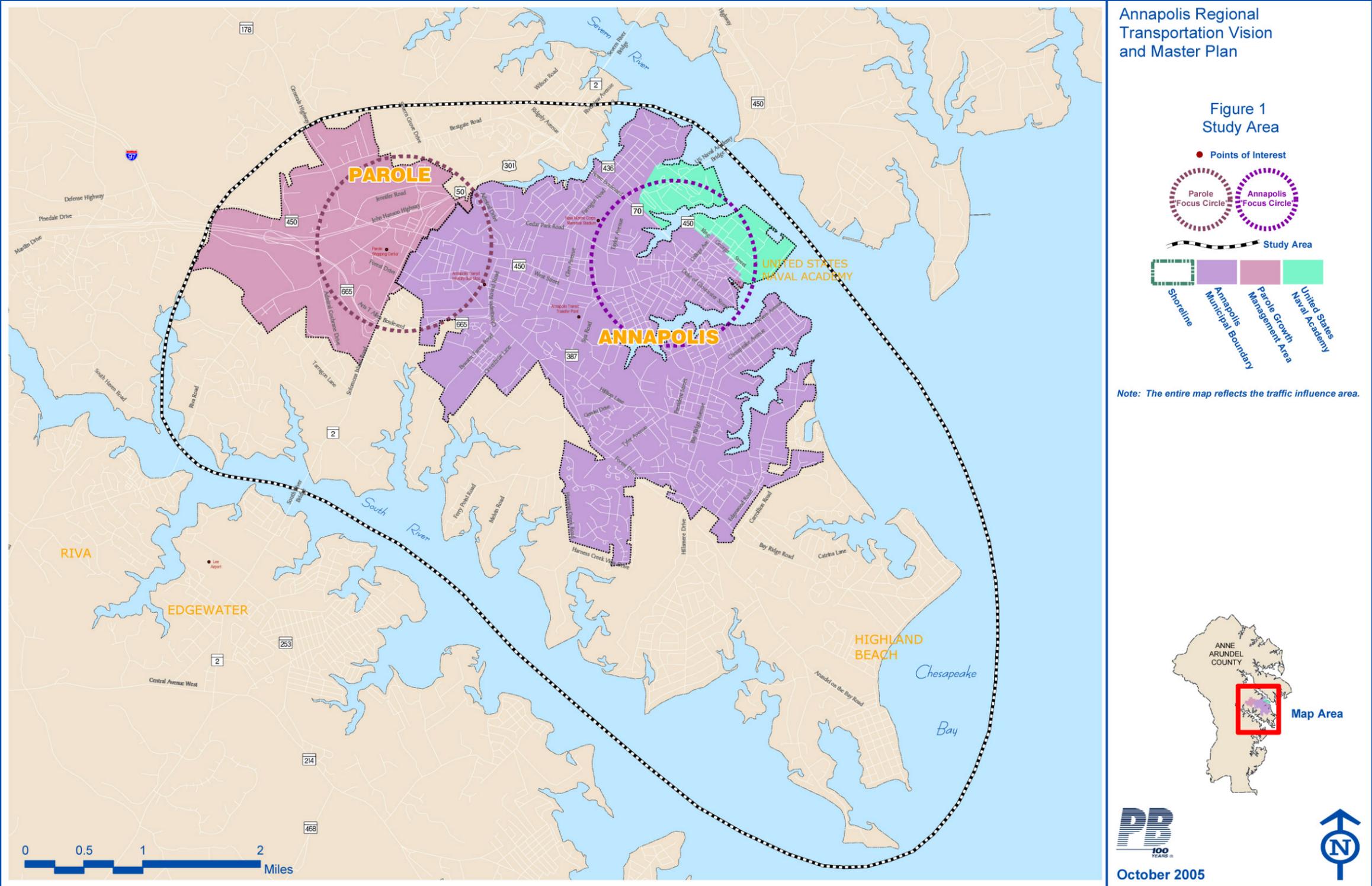
The predominant activities in Parole are commercial retail businesses and services. Major uses include the Annapolis Mall, Anne Arundel Medical Center, the Anne Arundel Detention Center, and a variety of retail stores, businesses and industries. State and County offices are also located in Parole.

Outside of these two centers, the study area has several primary community areas, which include Riva Corridor, Forest Drive/Bywater/Harness Creek, and Outer Neck. These areas are comprised primarily of single-family residences along with supporting public and neighborhood commercial uses.



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Figure 1 – Study Area



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## TRANSPORTATION ISSUES IN THE ANNAPOLIS AREA

Located on a peninsula, roadway access is limited to four primary gateways into the study area. These primary entry and exit routes are: Aris T. Allen Boulevard/Forest Drive (MD 665); West Street (MD 450); Roscoe Rowe Boulevard (MD 70), and U.S. Naval Academy Bridge (MD 450). To varying degrees, the four gateways are linked to U.S. 50/U.S. 301, which is the major connection to regional destinations, including Baltimore, Washington, D.C., the Baltimore Washington International Airport, and the Eastern Shore.

Coupled with this geographic limitation, the street system is old with its origins dating back to the late 1600's. While the narrow streets, antiquated design, and irregular intersections contribute to the charm and sense of place in the study area, they pose considerable obstacles to accommodate today's travel demands.

*"... it would be desirable ... to have what is very special about this town in the way it was historically laid out not overwhelmed by the ways in which people get around it in this century ..."*  
Sandy Cohen

The Annapolis area is divided by U.S. 50/U.S. 301, which, in addition to serving the study area, also carries a high volume of traffic that passes through the study area without stopping in route to and from other destinations. Although it is outside of the study area, I-97 is another significant factor regarding the volume of this through traffic.

The study area, Anne Arundel County, and the Baltimore/Washington area have experienced significant growth. During the past 1990-2000 Census period, the study area population grew by more than 11% from over 56,000 to almost 63,000. While the City and Naval Academy population grew by a modest 3.9%, the remainder of the study area population rose by over 27% during the same period.

The 2000 Census data indicates that there are over 30,000 employed persons living in the study area. The Anne Arundel County Office of Planning and Zoning estimated that in 2000, there were approximately 4,400 employers and 60,000 jobs in study area. Major employers include the State of Maryland, Anne Arundel County, the U.S. Naval Academy, Annapolis Mall, ARINC, IIT, Anne Arundel Medical Center, St. Johns College, and the Capital Gazette newspaper.

Despite the surplus employment opportunities in the study area compared to the number of local employees, public survey results (discussed later) indicate that approximately one-half of the employed residents work outside of the study area. This weekday exodus leaves over 40,000 jobs in the study area, which are filled by individuals living outside of the study area. This commuting pattern contributes significantly to the peak hour congestion problems.

Much of the study area is developed, and little vacant land is available, especially in the City. However, a significant amount of new redevelopment is under construction or has been approved. City planning department records indicate that projects are approved, under construction, or recently completed in all areas of the City. West Street, in particular, has experienced a significant amount of redevelopment. These recent projects total approximately 250,000 square feet of commercial floor area, over 100 hotel rooms, over 400 new residences, and approximately 500 assisted living or public housing units.

Land development in Parole is also active. In addition, the Parole Growth Management Area (PGMA) has a tremendous amount of redevelopment potential. The adopted Parole Urban Design Concept Plan and the design concepts, which have subsequently been discussed all feature significant redevelopment of the Parole Center. This area can be expected to yield over one million square feet of office and retail use along with perhaps as much as 1,500 residential units.

The transportation activity generated by land uses for shopping, appointments, services, recreation, etc. is a major contributing factor leading to the ever increasing demands on the transportation system. Finally, the study area receives 4 million visitors each year. People are attracted by the enchanting historic character of the City, the U.S. Naval Academy, and special events. The State Legislative session attracts significant numbers of visitors when it is in session from January to April.

Automobiles currently satisfy the vast majority of travel needs in the study area. Over 95% of the trips made are by car, and the majority of those are made with only one occupant. This is primarily consistent with State and national trends, which show that the number of vehicle miles traveled (VMT) per capita is increasing. Annapolis Transit, the local transit provider, has seen healthy gains in ridership, but only about 3% of the trips in the area are made by transit. Walking and bicycling account for a minute portion of all trips.

*“Two major challenges – where do you park your car and how do you move around without it? What options are there to the car, especially for those who do not drive?”*  
*Bill Ratchford*

Heavy regional use on U.S. 50/U.S. 301 has a significant impact on traffic circulation in the study area, particularly when north and eastbound weekend traffic or accidents cause motorists to seek local routes. Although much of this problem is seasonal in nature, recurring congestion is experienced around the Severn River Bridge.

The primary transportation issues for the area are:

- **Traffic Congestion.** Drivers experience peak hour congestion on several major highway facilities in the study area. Major streets in Parole, West Street, Forest Drive, and Roscoe Rowe Boulevard are especially prone to peak hour problems. Although outside of the scope of this plan, U.S. 50/U.S. 301 and I-97 can experience traffic backups, which affect the local transportation system.
- **Limited Transportation Choices.** Annapolis Transit (AT) has made important strides in expanding and improving bus and shuttle service and increasing ridership. However, transit continues to play a minor transportation role compared to the automobile. Walking and bicycling also are of minor importance due to uneven provision of facilities (sidewalks, bicycle lanes, pathways) and relatively disbursed, low-density land uses. Greater availability of transportation options will become increasingly important as the local population continues to age creating a significant portion of the community in need of transportation alternatives.
- **Parking.** Parking in downtown Annapolis will never be able to meet all demands placed upon it for employees, patrons, visitors, and residents. The challenge is

*“We are reaching the limits of our ability to expand capacity of the road system and need to make better use of what we have.”*  
*George Mauer*

to determine how to best meet the sometimes competing needs of employees, patrons, visitors, and businesses. Special event parking is becoming a significant issue for affected neighborhoods, as the size and frequency of special events has grown.

- ***Need for Greater Intergovernmental Coordination.*** Transportation and land use planning often have been addressed by individual agencies, without sufficient coordination to address common transportation issues. With transportation issues mounting and financial resources dwindling, close intergovernmental cooperation is essential.

## **PLAN INITIATION**

The Annapolis Transportation Board, consisting of 11 appointed City residents, reviewed these issues and recommended to the Mayor, City Council, and members of the Governor's Commission on the Capital City that a transportation vision and planning process should be conducted for the Annapolis area that:

- Addresses transportation issues in Annapolis, Parole, and the immediate surrounding area;
- Is user-centered, focusing on how to meet the needs of different transportation system user groups, such as residents, employees, and tourists;
- Includes a visible planning process, which is influenced by the transportation users;
- Enhances quality-of-life, environment, land-use, and special characteristics that make the Annapolis area a great place to live, work, and visit;
- Features the active participation of the City, County, State, and Naval Academy in the planning process;
- Creates a vision and master plan, which identifies and describes policies, programs, and projects to achieve the vision of mobility for each user group;
- Includes the benefits, costs, and implementation methods for each policy, program, and project; and
- Promotes closer institutional coordination and development of on-going intergovernmental partnerships to implement this Plan.

# PURPOSE OF THE ANNAPOLIS REGIONAL TRANSPORTATION VISION AND MASTER PLAN

## SCOPE

Many plans and studies related to transportation in the Annapolis area have been completed over the past 15 years. Although many excellent ideas were developed, these past efforts create a fragmented mosaic. They are spread out over time, with some being recent, others obsolete. Many deal with geographic pieces of the study area – such as the Parole Growth Management Area in the County, or Ward One or Outer-West Street in the City – but not the entire study area. Others deal with specific modes, such as transit, walking, bicycling, or parking, but do not address integration of all transportation modes.

This Plan is intended to build upon past planning efforts to provide a coordinated intergovernmental strategy, which addresses the transportation needs of the study area. This Plan is the product of a joint effort by the City of Annapolis, Anne Arundel County, State of Maryland, U.S. Naval Academy, and Annapolis Regional Transportation Management Association (ARTMA). As such, it provides a very important step towards a higher level of cooperation and coordination between the major agencies responsible for transportation facilities and services in the study area.

In addition, this Plan focuses on the mobility needs of the people who use the area's transportation facilities and services. Traditional transportation plans tend to look at transportation system performance in more mathematical and abstract terms, using such measures as Level of Service (LOS) and vehicle capacity ratio. While these methods are accepted and appropriate for transportation planning, they often do not provide a clear picture of the actual experience for the traveling public. This Plan was developed from the perspective of the transportation system users to ultimately to provide *mobility* that is safe and convenient throughout the Annapolis area while maintaining a balance with the area's *quality of life*. In addition to maintaining this balance, the Plan is intended to integrate elements from past plans and studies with new concepts to create a current, regional transportation plan, which covers the entire study area and integrates all transportation modes. It is intended to focus and coordinate transportation programs, policies, and projects throughout the Annapolis area for the next 20 years.

As discussed more fully in the following pages, a considerable effort was made at the outset to collect background information regarding the existing condition of the transportation system and to engage the public and stakeholders in the area to identify the key needs and issues facing the region. The transportation vision, accompanied by project themes, provides the overall focus and direction for creating a coordinated set of policy, program, and project recommendations to address transportation issues facing the area. The responsibility for implementing the recommendations is shared by the City of Annapolis, Anne Arundel County, U.S. Naval Academy, State of Maryland, and ARTMA.

In addition to what this Plan will do, it is important to recognize two major factors that it does not address – land use and U.S. 50/U.S. 301. First, this Plan does not attempt to influence either land use policy or land use decisions even though they are likely to generate significant pressures on the local transportation system. Current and projected

land use and development are taken as givens. This Plan is intended to respond to and to accommodate pressure generated on the local transportation system from planned and future development to the extent it is feasible to do so.

As indicated above, there are a significant number of development and redevelopment projects underway or on the horizon, and they will obviously have an impact on future transportation conditions. The City, County, and State will need to continue to monitor new development and provide transportation improvements to accommodate it. This is being done now on a project-by-project basis, however, it will become increasingly important for land use impacts to be evaluated and addressed in a regional context. If the City and County allow new development that exceeds the capacities created by implementation of this transportation master plan, it may be necessary to revise this Plan before expiration of its projected 20 year life.

Second, this Plan acknowledges the importance that U.S. 50/U.S. 301 plays regarding transportation in the study area. Along with providing access into and out of the study area for the benefit of residents, employees, and visitors, there is a tremendous volume of traffic that is simply moving through the study area between regional destinations. The study area is located at an important junction of routes from Baltimore and Washington, D.C. In addition, U.S. 50/U.S. 301 provides the only vehicular crossing of Chesapeake Bay in Maryland, making this a popular route to many travelers in the broader Baltimore/Washington, D.C. area. This regional congestion on U.S. 50/U.S.301 can aggravate congestion throughout much on the study area. This regional traffic, and its growth, is outside of the scope of this Plan. At the same time, management of this traffic on a regional and statewide basis is critical to the proper performance of the transportation system in the study area. The Maryland Department of Transportation (MDOT), through the Maryland State Highway Administration (SHA), is responsible for managing travel demand and incidents along U.S. 50/U.S. 301, MD 2, and I-97. The Chesapeake Bay Bridge crossing is maintained by the Maryland Transportation Authority MdTA), which retains responsibility for travel over the span and its approaches.

## **RELATIONSHIP TO CITY AND COUNTY PLANS AND STUDIES**

Because a primary purpose of this Plan is to develop a more coordinated approach to planning, all previous plans and studies, relevant to the project, were reviewed and evaluated. These included a wide range of documents from comprehensive plans to detailed traffic studies for particular projects. A summary of the plans and studies is presented in Appendix A.

Of the plans and studies reviewed, five adopted plans and two studies stand out as being particularly relevant and important to the Annapolis Regional Transportation Vision and Master Plan. They are:

- *Annapolis Comprehensive Plan*
- *Annapolis Neck Small Area Plan*
- *Parole Urban Design Concept Plan*
- *Anne Arundel County Pedestrian and Bicycle Master Plan*
- *City of Annapolis and Anne Arundel County Transit Development Plan*
- *Annapolis Ward One Sector Study*
- *Parking and Transportation Problem Solving Action Team Report*

The *Annapolis Regional Transportation Vision and Master Plan* represents a formal recognition by the City of Annapolis and Anne Arundel County of the transportation needs and aspirations of Annapolis Area residents. Its purpose is to support the seven documents noted above by providing a focused transportation strategy to accommodate the needs of area residents, businesses, institutions, and visitors.

## **TRANSPORTATION SYSTEM USER GROUPS**

People use the area's transportation facilities and services for a wide variety of reasons, such as going to work, shopping, running errands, and visiting the area. Because the value of transportation facilities and services ultimately are judged by how well they meet the needs of the people using it, this Plan focuses on identifying the primary system user groups and meeting their needs through a coordinated set of recommended transportation system improvements.

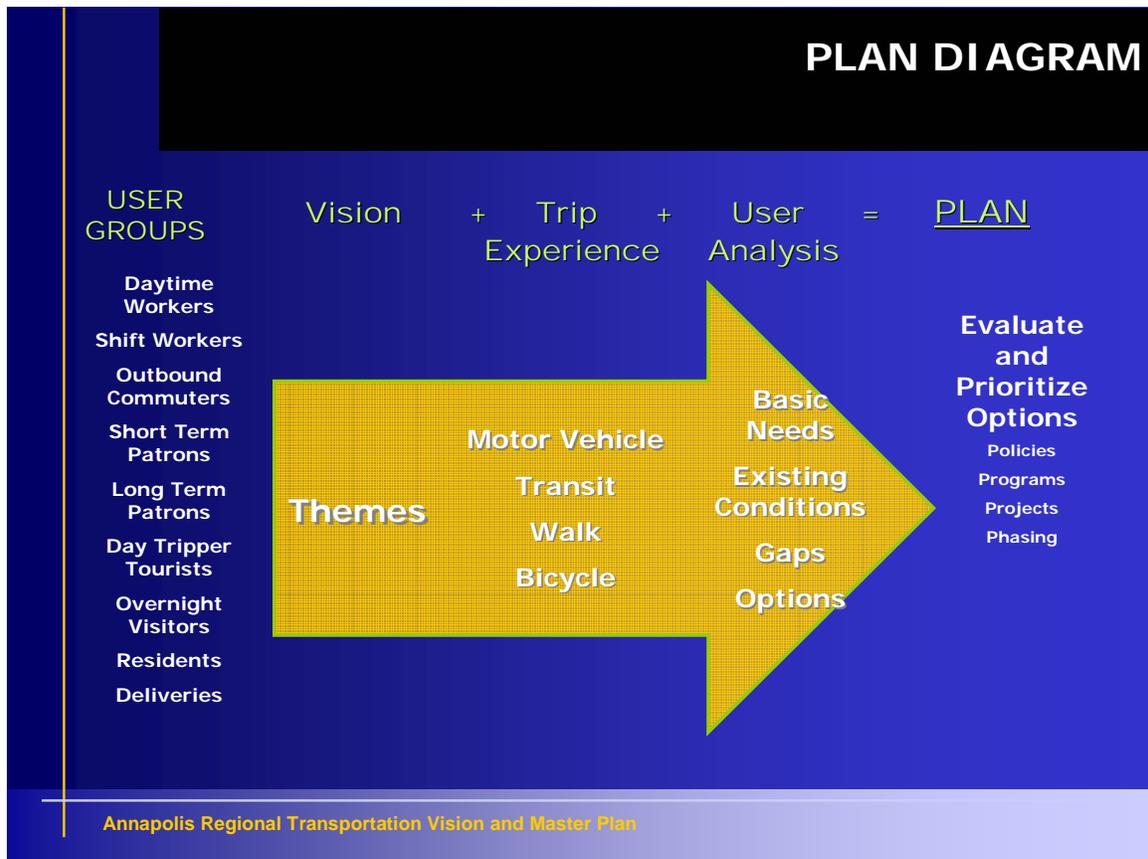
For the purpose of this Plan, transportation system users were categorized into nine groups, reflecting the major ways people use the transportation system or the manner in which they are affected by the transportation system. The user groups and the ways they use the transportation system are described in the Planning Process section.

# PLANNING PROCESS

The process used in developing this Plan is unique because it focuses on meeting the needs of the users of the transportation system, rather than just developing a list of improvement projects in response to traffic studies and similar information.

After creating the vision and themes, work began to distill these broad directives into policies, programs, and projects to be implemented to satisfy identified user needs. Transportation system users all travel by one or more basic modes and, therefore, many of the recommendations pertain to modal improvements that will be beneficial to one or more user groups. The character of the trip experience for each user group, their needs, existing conditions, and system “gaps” or deficiencies were identified leading to a list of potential options for overcoming the gaps and meeting user needs. Evaluating potential options according to how well they satisfy user needs and the project themes yielded a prioritized list of policies, programs, and projects for implementation. The process in Figure 2 illustrates the planning process used in this study, which is further explained in the following pages. Evaluating potential options according to how well they satisfy user needs and the project themes yielded a prioritized list of policies, programs, and projects for implementation.

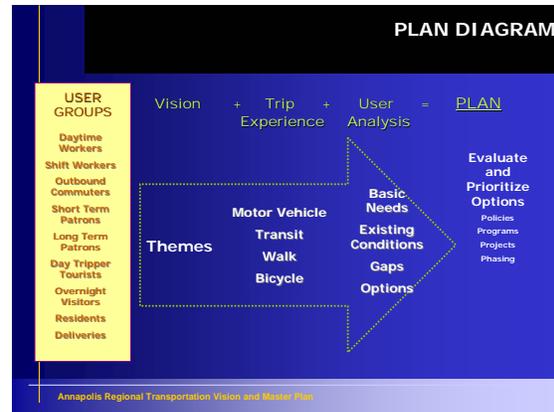
**Figure 2 – Planning Process Diagram**



## TRANSPORTATION SYSTEM USER GROUPS

The nine transportation system user groups, reflect the major ways people within the study area use the transportation system or the manner in which they are affected by it. The user groups are:

- **Daytime Workers** – users who work in the area during normal daytime business hours.
- **Shift Workers** – users who work in the area on a shift basis, such as restaurant employees.
- **Outbound Commuters** – users who live in the area, but travel outside of it to work.
- **Short-term Patrons** – users who travel to retail, office, and government centers for quick stops.
- **Long-term Patrons** – users who visit retail, office, and government centers for longer periods of time.
- **Day Tripper Tourists** – users who come to the area for the day.
- **Overnight Visitors** – users who stay over at least one night.
- **Residents** – users impacted by the activity in and around their neighborhoods.
- **Deliveries** – users who make deliveries to both residential and commercial customers.

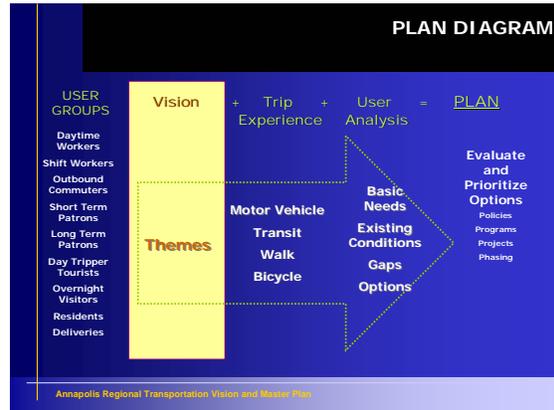


It is essential to understand that people will be in different “groups” during the course of a day or week, depending upon the purpose of their trips. For example, a daytime worker would be a short-term patron if he or she goes out to dinner after work. The importance of the user group concept is to ultimately provide solutions to address the public needs to make different types of trips conveniently and safely in the study area.

It is also important to note the special treatment given to residents as a user group. Although this Plan addresses the transportation needs of residents along with those of other major user groups such as tourists and office workers, residents are not classified as a user group for purposes of addressing their mobility needs. Instead, trips generated by residents and their need for parking are captured under other categories of user groups, such as short term patrons, office workers, outbound commuters, etc. When referred to as a user group in this Plan, the term “residents” is used narrowly to refer to “users impacted by the activity in and around their neighborhoods,” as stipulated above.

## THE VISION AND THEMES

As discussed more fully in the following pages, a considerable effort was made at the outset to collect background information regarding the existing condition of the transportation system, account for new development already planned or approved in the study area, consider projections for future development and traffic in the study area based on relevant transportation models, and engage the public and stakeholders in the area to identify the key needs and issues facing the region. The transportation vision, accompanied by project themes, provides the overall focus and direction for this Plan.



In developing the Plan, the public, a Citizens Advisory Committee, and agency staff created an overall vision and a list of themes to guide this planning effort. It was recognized that mobility should be the focus of this transportation plan but, at the same time, transportation strategies should not be implemented without considering their relationship and potential impact upon the area's quality of life.

### VISION STATEMENT

To provide **mobility** that is safe and convenient throughout the Annapolis area for all transportation system users, including area residents, businesses, institutions, maritime community, and visitors. Provision of viable travel options to the automobile will enhance mobility for all. While mobility is the focus of this Plan, the second key element of the vision is to maintain a balance between mobility and the **quality of life** offered in the Annapolis area.

## Mobility Themes

### *Specific Themes*

- **Maximize the connectivity and ease of access for user groups via all modes of travel (e.g., pedestrian, bicycle, auto, transit, and water taxi) between activity centers.**

*Connectivity is especially important between the activity centers in the study area as well as destinations beyond it. Providing connectivity along the major transportation corridors is critical to the success of this planning effort. Special attention should be paid to travel between the primary activity centers of downtown Annapolis and Parole. Although most travelers in the study area use the automobile, this Plan emphasizes greater utilization of other modes primarily because of their potential to reduce traffic congestion and support the Quality of Life Themes.*

- **Improve the operational efficiency of transportation circulation patterns within activity centers.**

*Along with connectivity between important destinations, adequate circulation within activity centers represents another key element of this Plan. The ability to move efficiently within Annapolis and Parole is particularly important. Management of transportation modes in these areas, including automobiles, is necessary to realize this theme.*

- **Realize maximum effectiveness of all existing and future public and private parking facilities for all user groups.**

*All automobile and bicycle trips begin and conclude with a need for parking. Adequate parking is a critical part of any transportation system. However, parking facilities are not without adverse traffic, aesthetic, and environmental impacts. Balanced management of parking to efficiently meet user needs while encouraging modes which do not require significant parking investment (walking, bicycling, and transit), is an important element of this Plan.*

### ***General Themes***

- **Provide appropriate access and mobility for user groups at appropriate times.**

*A central idea for the mobility themes is to maximize the benefits for all of the users of the transportation system. The recommendations presented at the conclusion of this Plan should be designed to satisfy user needs equally.*

- **Increase the overall safety, comfort, and convenience of transportation facilities for all user groups.**

*Proposals that would improve safety for a user group, via any mode, should be supported, provided it will not have an adverse affect on the safety of other user groups. This criterion pertains to automobile/pedestrian conflicts, automobile/bicycle conflicts and areas of potential criminal activity.*

- **Provide recommended actions with realistic opportunities for implementation.**

*Successful implementation will largely depend upon on building and sustaining public support for change in travel behavior and consistency with adopted plans, the actual or anticipated availability of funding, the ability to stage implementation to coincide with other projects or funding, and the ability to be implemented simultaneously with other options for maximum effectiveness. Opportunities for implementation should be enhanced through intergovernmental cooperation through complementary public policies, capital projects, and management programs.*

## Quality of Life Themes

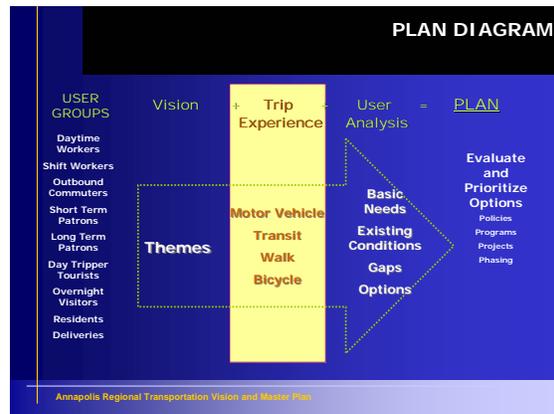
Although the quality of life themes are important, they are addressed fully in other plan policy documents. They are included as part of the Vision primarily to ensure consistency of the transportation recommendations with these planning issues.

- **Protect and enhance the cultural and historic integrity of the Annapolis area.**
- **Reflect and integrate unique community geographic and seasonal conditions.**
- **Improve air quality through integrated land use and transportation decisions.**
- **Minimize impacts to the natural environment (e.g., woodlands, wetlands, and waterways).**
- **Maintain an appropriate sense of scale for Annapolis area neighborhoods.**
- **Promote economic vitality and community development.**

## TRIP EXPERIENCES

The user groups meet their various transportation needs by utilizing one or more of the following basic transportation modes:

- **Motor vehicle** – automobiles, carpool, motorcycles, and trucks.
- **Transit** – bus, shuttle, taxi, and water taxi.
- **Walk** – walking or other mobility device.
- **Bicycle** – bicycle, Segway, and scooters.



The mode or modes of travel that constitute a complete trip for different individuals was considered to gain a better understanding about how people really use the transportation facilities and services available to them and what improvements will have the most practical value to them. When traveling to and from any destination, people use one or more of the four modes. Five primary trip experiences were identified based on the common single mode or multiple mode trips taken in the study area in order to better understand specific travel needs for system users:

- **Drive** – an automobile is used to make the entire trip to and from destinations.
- **Drive/Walk** – an automobile is used to make the majority of the trip before the user walks the remaining distance (typically 1-3 blocks).

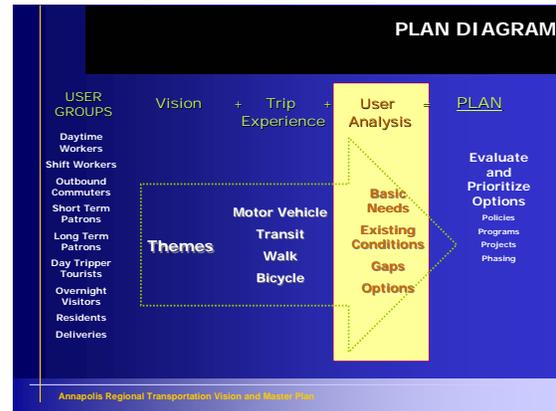
- **Drive/Transit/Walk** – an automobile is used to begin the trip, followed by a ride on transit from a park and ride or remote lot, and concluding with a walk from the transit stop to the destination.
- **Walk/Transit/Walk** – a walk to transit, a ride on transit, and concluding with a walk from the transit stop to the destination.
- **Walk/Bicycle** – a walk or bicycle ride to the destination.

## USER ANALYSIS

### Information Sources

As indicated above, a significant effort was made to gather relevant information upon which to create this Plan. The information used to support this effort came from three primary sources, which are described in the following pages.

- Available transportation information and traffic studies regarding existing transportation conditions (Appendix A).
- Relevant plans and studies involving all or portions of the study area (Appendix A).
- A public affairs program designed to better understand public opinion regarding the area's transportation issues (Appendix B).



## Existing Conditions

### Street Network

Existing functional street classifications and descriptions within the study area are available for both the County and City. Figures 3 and 4 (see pages II-20 and II-21) show the City and County functional street classifications for freeways, arterials (major regional transportation routes), and collector streets (locally important routes). There are several streets classified in the City that are not classified in the County, and vice versa. The classifications generally reflect the different view of the street system from a local (City/County) and regional (County/State) perspective. The highlighted streets in Figures 3 and 4 represent the routes of primary importance in the study area. The remaining streets are classified as local streets.

The roadway network serving the study area is comprised of three major regional highways and several arterial roads. The three freeways are I-97, U.S. 50/U.S. 301, and Aris T. Allen Boulevard (MD 665). Principal arterial routes include Solomon's Island Road (MD 2) and Rowe Boulevard (MD 70). The minor arterials include Forest Drive, West Street (MD 450), Bestgate Road, Riva Road, Spa Road, Generals Highway (MD 178), and Defense Highway (MD 450).

The primary north-south roadway within the network is MD 2, which provides the connection to Edgewater and to major activity centers to the north (Severna Park, Glen Burnie, etc.) via the U.S. 50/U.S. 301 bridge over the Severn River. Other north-south routes closer to the downtown area include MD 387 (Spa Road) and Bay Ridge Avenue, which provide connections from Forest Drive to downtown via the major east-west arterials, including Rowe Boulevard (MD 70) and West Street (MD 450). Forest Drive is a heavily traveled east-west route along the southern portion of the Annapolis Neck, providing direct access to Aris T. Allen Boulevard (MD 665), which in turn provides access to Parole, Annapolis Mall, U.S. 50/U.S. 301, and I-97. Rowe Boulevard (MD 70) serves as the primary 'gateway' to downtown providing a direct connection to U.S. 50/U.S. 301 as well. Riva Road is a north-south route, which primarily serves employment and retail centers, including the County government buildings.

With the exception of three State routes and one County route, all roads within the City limits are owned and maintained by the City of Annapolis Department of Public Works. The State routes are Rowe Boulevard (MD 70), Taylor Avenue/Annapolis Street (MD 435), and West Street (MD 450). The County owns and maintains Aris T. Allen Boulevard/Forest Drive (MD 665).



### ***Existing Traffic Operations***

Traffic congestion was an important issue amongst citizens who attended the various public meetings, concerning the development of the *Annapolis Neck Small Area Plan*. During peak traffic hours and special events, most of the major roadways are heavily congested. The survey results for the *Annapolis Regional Transportation Vision and Master Plan* revealed that overall, the majority of residents were satisfied with the transportation system. The major congestion areas reported from previous work are:

- ***U.S. 50/U.S. 301, from MD 450 to Rowe Boulevard*** is congested throughout the entire segment during PM peaks and weekends, especially during the summer as beach patrons and Eastern Shore commuter traffic mixes with local traffic. The U.S. 50/U.S. 301 interchange with MD 450 has congestion during the PM peak hours. U.S. 50/U.S. 301 has severe congestion during summer weekends due to weekend beach traffic. The U.S. 50/U.S. 301 interchange with I-97 has recurring congestion related to northbound traffic during the PM peak.

Congestion on U.S. 50/U.S. 301, regardless of the cause, frequently has ripple effects throughout the Annapolis area. Drivers exit eastbound U.S. 50/U.S. 301 in search of alternative routes though the City. A popular by-pass leaves U.S. 50/U.S. 301 at Rowe Boulevard and cuts through West Annapolis to the Rt. 450 Bridge over the Severn River. This traffic backs up behind traffic lights on Rowe Boulevard and at the U.S. Naval Academy Gate 8. Alternatively, many drivers exit U.S. 50/U.S. 301 at MD 450 in Parole and drive east on West Street to Westgate Circle to Taylor Avenue and across the failing Taylor Avenue/Rowe Boulevard intersection to the MD 450 Severn River Bridge.

Both cut-through routes are susceptible to heavy congestion, prompting drivers to branch farther afield in search of more free-flowing traffic. The north-south connectors between West Street and Aris T. Allen/Forest Avenue -- including MD 2 South, Chinquapin Round Road and Spa Road -- bear the brunt of the overflow traffic from both West Street and Aris T. Allen/Forest Drive as cars ferry back and forth between equally congested routes in search of an open passage that often does not exist.

- **The Forest Drive corridor** continues to experience increasing traffic volumes due to the residential growth within the peninsula between the South River and the Severn River. Recent projects to add turning lanes have helped to relieve the failing conditions at signalized intersections, but additional capacity improvements are needed to combat the high traffic volumes.
- **The congestion within Parole** is significant during peak morning, mid-day and late afternoon periods, especially along Riva Road and MD 450.
- **I-97, from MD 32 to U.S. 50/U.S. 301** has heavy traffic volumes in the AM and PM peak hours. This segment of roadway is only two lanes in each direction and is near or at capacity during peak hours.
- **MD 2 through Edgewater** is congested along the entire segment during all daytime and evening hours, but this was relieved somewhat upon the recent completion of a widening project on MD 2.
- **MD 450 (West Street) from MD 178 (Generals Highway), through Parole to MD 2** is congested during evenings and weekends. MD 450 congestion continues eastward due to queuing vehicles stacked behind turning vehicles on the segment between MD 2 and Chinquapin Round Road.
- **Streets between the historic downtown area and the Parole area, such as West Street and Forest Drive** are congested and have capacity problems. Eastbound West Street during the PM rush hour has severe congestion backed up behind light at Russell Street. This congestion can extend westward to Legion Avenue. A lot of traffic turns right on Russell to cut over to Spa and from there to Hill Top Lane. This route is an attempt to avoid Forest Drive-Chinquapin Round Rd. congestion. For patrons entering the City directly from the U.S. 50/U.S. 301 Corridor, the divided four-lane Rowe Boulevard (MD 70) has congestion resulting from vehicles backing up at the signalized intersections.

### ***Existing Operation of Key Intersections***

Within the study area, all traffic signals on State routes are controlled by the Maryland State Highway Administration (SHA). Signals on County roads are controlled by the Anne Arundel County Department of Public Works even if the side road is owned by the City of Annapolis. The U. S. Naval Academy also operates several signals. All other traffic signals are owned and maintained by the City.

Level of Service (LOS) is the common method used to measure street and intersection performance. It is similar to a report card rating with LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak travel demand. LOS D and E signify progressively worse peak hour traffic operating conditions. LOS F represents conditions where the demand has exceeded the capacity, typically resulting in long queues and delays (see Appendix A for further information).

Figure 5 highlights the transportation deficiencies in the *Annapolis Regional Transportation Vision and Master Plan* study area. This assessment was based upon a variety of available sources from the City, County, and State (see Appendix A, Existing Transportation Conditions Memorandum). As shown in the figure, roadways experiencing heavy congestion (LOS E OR F) are:

- Forest Drive
- Rowe Boulevard
- West Street
- Riva Road

The intersections are currently operating at level of service E or F for either the AM or PM peak hour (hour with the most intense traffic during the morning and evening). Without any improvements or additional mitigation, these intersections are anticipated to continue operating at a deficient LOS and gradually degrade to extreme congestion or failure in the future. The study area intersections exhibiting the significant traffic delays are:

- West Street-MD450/Madison Place-Southgate Avenue;
- West St. east bound during PM rush from Legion Avenue to Russell Street;
- Bestgate Road/Generals Highway-MD 178 (LOS F);
- Solomon's Island Road-MD 2/Tarragon Lane (LOS E);
- Riva Road/Aris T. Allen-MD 665 (LOS F);
- Riva Road/Admiral Cochrane Drive (LOS F);
- Riva Road/Harry Truman Parkway(LOS E);
- Forest Drive-MD665/Bywater Road (LOS F – improvement project funded);
- Forest Drive-MD 665/Hilltop Lane (LOS F – improvement project funded);
- Forest Drive MD 665/Spa Road (LOS E);
- Chinquapin Round Road/MD 665-Forest Drive-Allen Boulevard (LOS E); and
- Rowe Boulevard-MD 70/Farragut Road (LOS F).

Figure 5 also shows the locations identified in the greater Annapolis area as candidate safety improvement locations with high collision rates by the State of Maryland.

In addition, Aris T. Allen Boulevard (MD 665), between U.S. 50/U.S. 301 and MD 2 has short-distance/high volume weaving problems. The interchange with Riva Road is currently being evaluated by the County because it is failing during morning and afternoon peak periods not only because of the weaving problems, but also due to the heavy volumes on Riva Road and the high number of traffic signals within the vicinity of MD 665. The eastbound lanes of MD 665 between MD 2 and Forest Drive/Chinquapin Round Road have several PM peak hour back-ups as commuters return to their residences via Forest Drive. These back-ups cause motorists to wait through several signal cycles at the Chinquapin Round Road intersection.

Figure 3 – City Street Classification - Annapolis

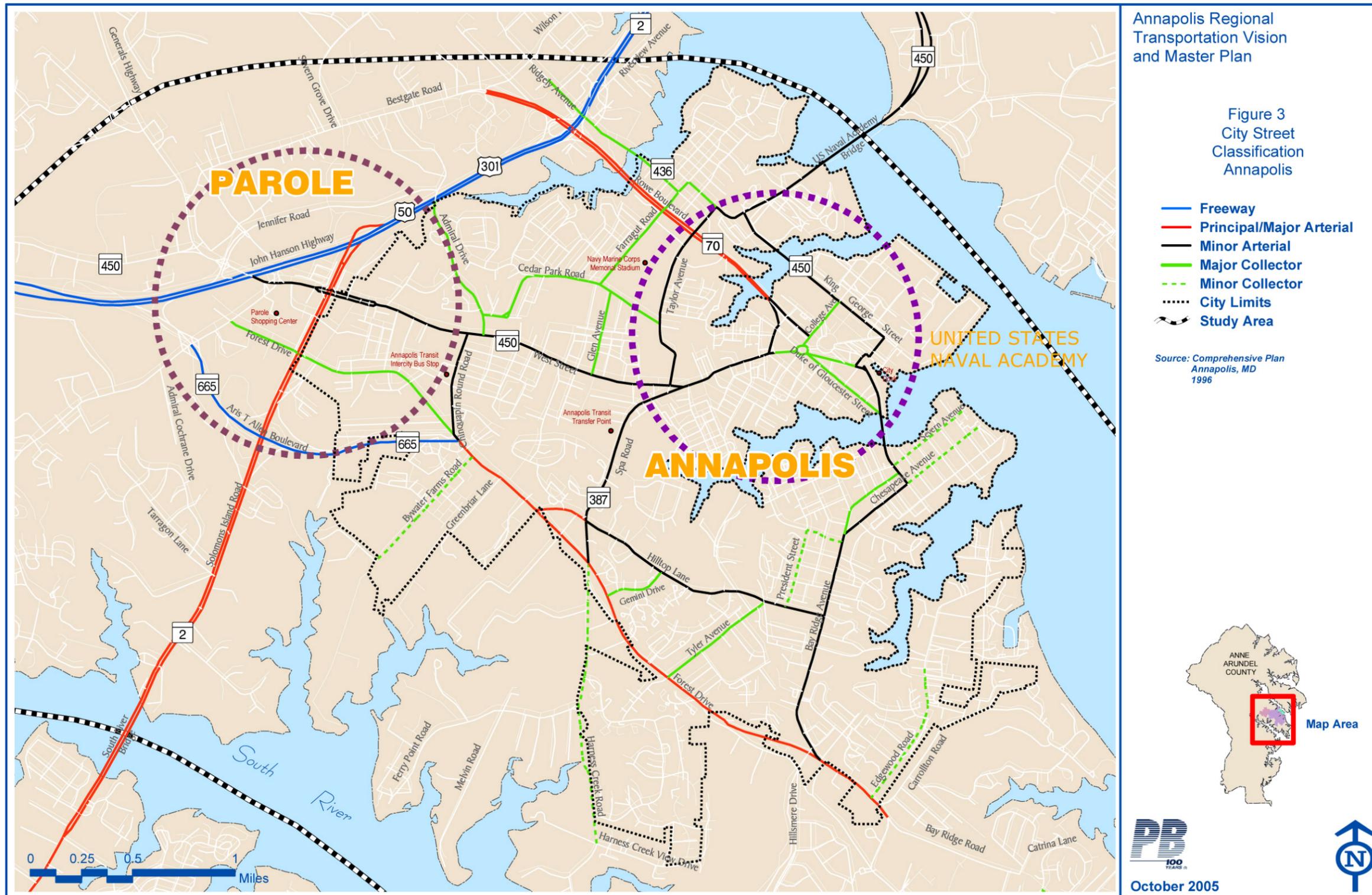


Figure 4 – County Road Classification - Annapolis

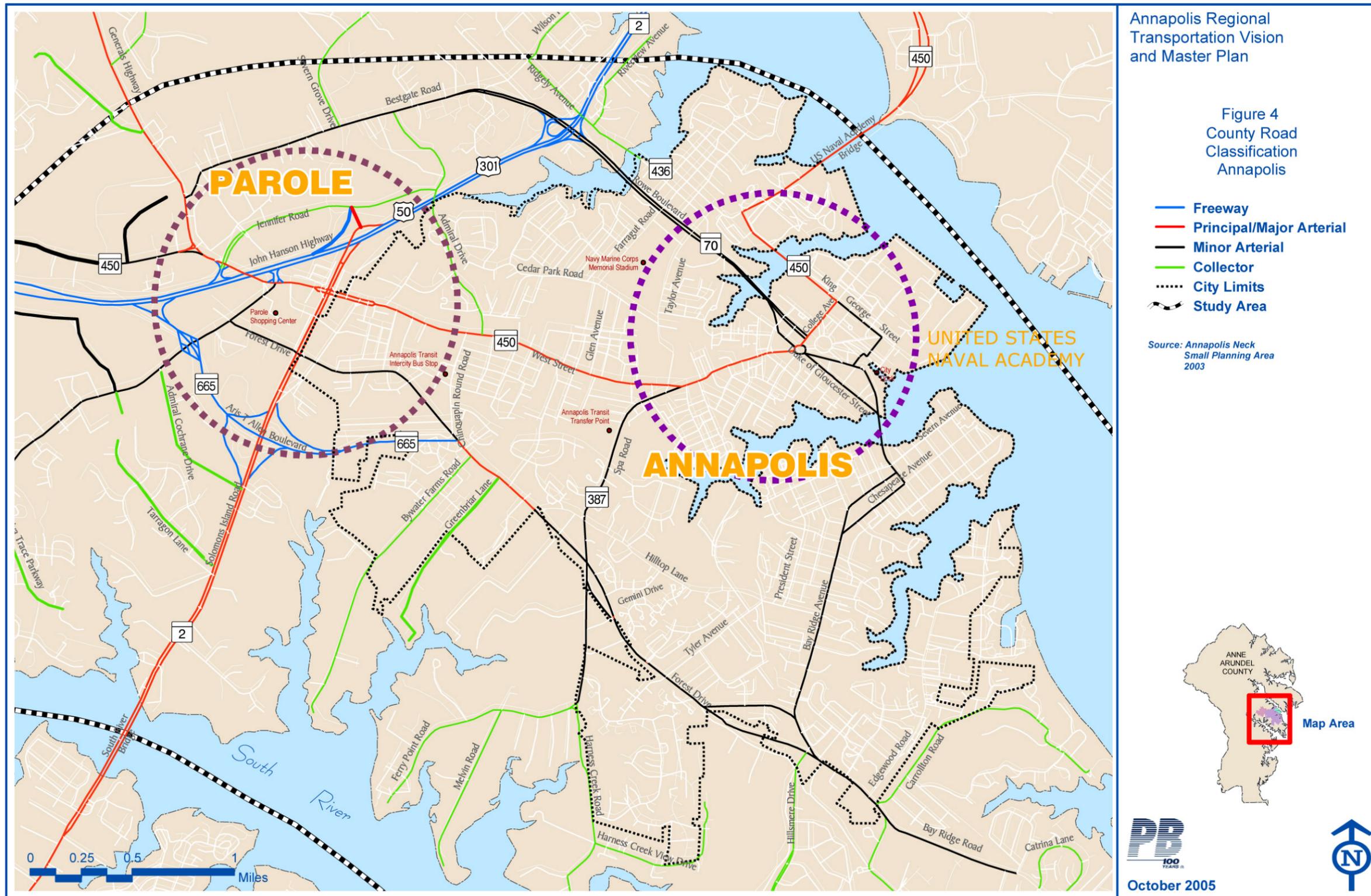
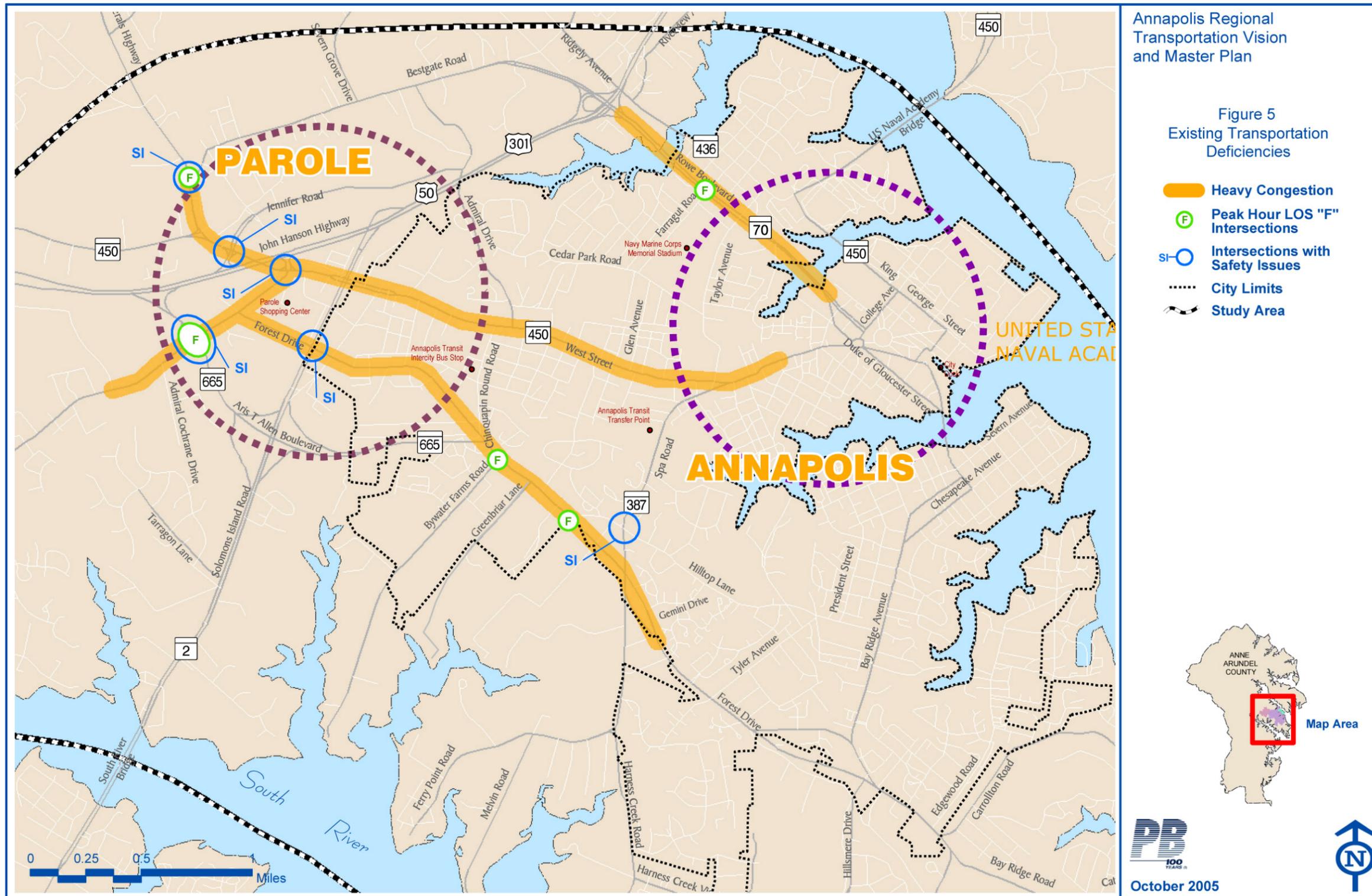


Figure 5 – Existing Transportation Deficiencies



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## ***Planned Improvements and Studies***

A number of transportation improvements are already planned, underway or recently completed in the Annapolis study area. In addition, a number of planning studies are underway or recently completed. The following projects and studies are a compiled listing of planned projects from recent reports.

**Table 1 – Planned Improvement Projects**

<b>Project Name</b>	<b>Description and Purpose</b>	<b>Status</b>
<b><i>State Projects</i></b>		
MD70 (Rowe Boulevard)	Replacement of bridge number 2042 over Weems Creek and rehabilitation of bridge number 2043 over College Creek, including the enhancement of the area between the two bridge structures by Fall 2006.	Under construction
Annapolis Gateway Feasibility Study	Streetscape study for West Street (MD 450) from Old Solomons Islands Road (MD 393) to Chinquapin Round Road. The City is interested in pursuing a roundabout concept at MD 450 and Old Solomon's Island Road.	Under study
<b><i>County Projects</i></b>		
Arundel on the Bay Road	Realign a portion of Arundel on the Bay Road near the Bay Highlands Road and Thomas Point Road intersection.	Funded for construction
Forest Drive Widening	Continuous westbound right turn lane on Forest Drive starting at Hilltop Lane and terminating at Chinquapin Round Road (Westbridge Village Traffic Study). This will add two lanes to create a six-lane divided street on this section of Forest Drive.	
Forest Drive Relief Road Alignment Study	Potential new alignment from Aris T. Allen Boulevard (MD 665) to Spa Road (MD 387). The City has been acquiring right-of-way along the south of Forest Drive.	Study complete
Parole Town Center Community Legacy Grant	Prepared predevelopment design for Community Legacy Area of Parole. An Action Plan and 30% Design Package were completed to complement the anticipated redevelopment of the Parole area.	Completed
Intermodal Center Feasibility Study	Study to determine the feasibility and location of a transit center in the Parole area.	Not funded
<b><i>City Projects</i></b>		
Inner West Street Congestion Mitigation	A series of projects to revitalize Inner West Street and its commercial corridor and to minimize the impact of traffic and parking from redevelopment plans.	
Knighton Garage	An Inner West Street Congestion Mitigation element to reduce cut-through traffic, Colonial Avenue was changed to a one-way street exiting the community. Traffic monitoring will determine if a signal is required at West Street and Colonial Avenue.	Garage is completed
Capital Site Development	An Inner West Street Congestion Mitigation element to create an alley connection between	Completed

<b>Project Name</b>	<b>Description and Purpose</b>	<b>Status</b>
	Monticello and Southgate for bi-directional circulation and improved access to West Street.	
Enhanced Shuttle Service	An Inner West Street Congestion Mitigation element where the Annapolis Department of Public Transportation is providing enhanced shuttle service for downtown and the NAAA lot. The City will also encourage businesses to take advantage of available tax credits for employee participation.	Implemented
Bladen Street Streetscape Project	Streetscape improvements are planned along Bladen Street from College Park to College Avenue (Bloomsbury Square) including a potential circle at Bladen and Calvert.	
Chinquapin Round Road /West Street improvements	Street improvements related to the redevelopment of Johnson's Lumber Company site. This development is a 350-unit residential development with a retail component located near this intersection.	
Outer West Street	A variety of safety and congestion actions include requiring wider buffer yards to allow future expansion, intersection upgrade at MD 2 in anticipation of Parole area redevelopment, and access controls.	Underway
Right-of-way Acquisition	The City requires major development projects to dedicate additional street right-of-way where necessary to support current or future street improvements.	Underway
Taylor Avenue Traffic Analysis	An Inner West Street Congestion Mitigation element to conduct a traffic analysis that showed that Taylor Avenue would not need to be widened between Cedar Park and the DNR Building.	Completed
Outer West Street – Chinquapin Round Road Land Use Study	Consideration of improvements include a roundabout at Old Solomon's Road with connections to Hudson Street and Gibraltar Avenue; an extension of Admiral Drive to Virginia Avenue; and installation of a traffic signal at Virginia Avenue and Chinquapin Round Road. Additional improvements include a connection between Georgetown Road and Edgewood Road southwest of Bay Ridge Road in the Bay Village site.	Underway
<b><i>City Annapolis Comprehensive Plan</i></b>		
Evaluate modifications to key entry corridors	Enhance access to and from the City, with primary emphasis on Aris T. Allen Boulevard/Forest Drive, Route 450, Rowe Boulevard, and Outer West Street.	
Evaluate realignments to key roadway corridors within the City	Enhance neighborhood access, traffic circulation and vehicular/pedestrian safety including Chinquapin Round Rd/West St/Admiral Drive, Spa Road/West Street/Taylor Avenue, Taylor Avenue between Rowe Boulevard and MD 450, and Taylor Avenue between West Street and Rowe Boulevard.	

<b>Project Name</b>	<b>Description and Purpose</b>	<b>Status</b>
Traffic Management Plan for U.S. 50/U.S. 301 corridor	Develop a Traffic Management Plan for U.S. 50/U.S. 301 corridor. Coordination with Maryland SHA.	
Neighborhood-to-neighborhood access	Identify opportunities to enhance without promoting through vehicular traffic.	
Parking management strategy	Develop a strategy that can be implemented over the next ten years to support the continued economic health of the downtown while maintaining the quality of residential life.	
West Street parking	Develop a parking management strategy to support revitalization of Inner West Street.	
Eastport parking	Monitor the need for a parking management strategy for Eastport.	
<b>Annapolis Neck SAP</b>		
Holly Avenue	A new road is proposed between Forest Drive and West Street, however, it is not indicated on the preliminary plans for the Annapolis Towne Centre.	Under consideration
MD 2/MD 450/Jennifer Road Ramp	Extend MD 2 to Jennifer Road including a hiker/biker trail. Provide north to east and south to west ramps by Fall 2005.	Under construction
Arundel on the Bay Road	Road realignment and safety improvements near Bay Highlands Road and Thomas Point Road intersection.	Design is funded
Forest Drive	Increase capacity by reconstructing Forest Drive to a six-lane, divided roadway with a sidewalk and multi-use trail including crosswalks for pedestrians between Hilltop Road and Chinquapin Round Road.	Under construction
MD 2 at Forest Drive	Construct a second left turn lane from northbound MD 2 to Forest Drive. Design is funded.	Funded for construction
U.S. 50/U.S. 301 Sound Barriers	New noise barriers along U.S. 50/U.S. 301 from Ridgely Avenue to the Severn River Bridge.	Completed
MD 70 (Rowe Boulevard) Bridge	Replacement of bridge number 2042 over Weems Creek and rehabilitation of bridge number 2043 over College Creek, including the enhancement of the area between the two bridge structures.	Under construction
Bestgate Road to Riva Road	Part of MD 178/MD 450 improvements to provide a north to east exclusive right turn lane at MD 178 and Bestgate Road.	Completed
US 50/301 and MD 450 Intersection	Part of MD 178/MD 450 improvements by considering a proposal by the Annapolis Town Centre at Parole at Riva Road/US 50/US 301/MD 450.	Under review
Extension of Housley Road to US 50/301	Street extension to improve circulation.	No activity
Extension of MD 2 to Jennifer Road and improvement of the MD 2/U.S. 50/U.S. 301 interchange	Provide ramp connection from Jennifer Road to U.S. 50/U.S. 301. Provide bikeways along the connection by Fall 2005.	Under construction
Parole	Construct internal streets for the urban core of and extend Holly Avenue to the Annapolis Mall, if feasible.	Under consideration

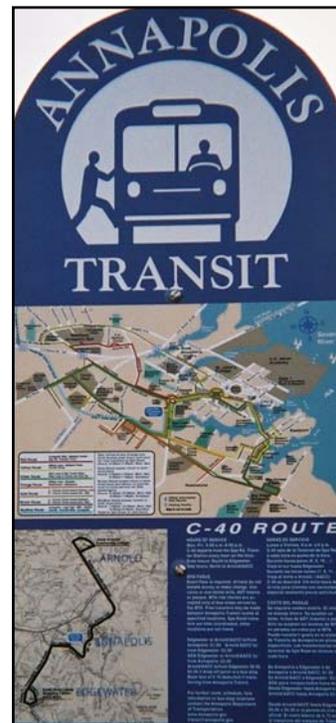
<b>Project Name</b>	<b>Description and Purpose</b>	<b>Status</b>
Park-and-ride areas	Increase the number and improve the effectiveness of transportation centers, for residents, commuters, visitors, and tourists.	Under consideration
Parking Authority for the PGMA	Investigate the value and feasibility of establishing a parking authority to: develop parking structures serving multiple users to help release surface lots for redevelopment or landscaping, develop park and ride facilities to support both regional transit and transportation management program, and develop a parking management strategy that would support revitalization of Inner West Street and economic viability of outer West Street businesses.	No activity
Gateway Village Drive	New connector road through Sam's Club and the SHA Maintenance facility from MD 178 to Housely Road.	Under design. No const. funding.
Harry S. Truman Parkway	Truman Parkway extension from east of Riva Road north to Admiral Cochrane Drive.	Completed
Riva Town Center Boulevard	Proposed road connection between Annapolis Harbour Center and Festival at Riva Road.	Design complete. No const. funding.
Holly Avenue Extended	New connector road between West Street and Jennifer Road.	No activity
<b><i>Parole Urban Design Concept Plan</i></b>		
U.S. 50/U.S. 301/MD 2 Interchange	Extend MD 2 to Jennifer Road including a hiker/biker trail. Provide north to east and south to west ramps.	Under construction
Medical Boulevard	New connection from Jennifer Road to Bestgate Road near the Anne Arundel Medical Center.	Completed
MD 178 at Bestgate Road	Provide a north to east right turn lane.	Completed
Admiral Cochrane Drive	Extension from west of Riva Road to MD 2.	Completed
Harry S. Truman Parkway	Harry S. Truman Parkway extension from east of Riva Road to Admiral Cochrane Drive.	Completed
Old Solomon's Island Road	Old Solomon's Island Road (MD 393) extension from Forest Drive to Hudson Street.	In County CIP, not funded
U.S. 50/U.S. 301 Strategic Plan	Form a committee to provide strategies to decrease congestion in the US 50/301 corridor.	No activity
Forest Drive Extension/Three Mile Oak	Extend Forest Drive from Riva Road to MD 450 with a roundabout at MD 178.	No activity
Ramps from I-97 to Housley Road	Provide access ramps to and from I-97 at Housley Road.	No activity
Town Center Boulevard Bridge	Construct a bridge across MD 665 from Town Center Boulevard to Womack Drive.	No activity
U.S. 50/U.S. 301 Off-ramp	Construct an off-ramp from US 50/301 to Truman Parkway.	No activity
U.S. 50/U.S. 301 Overpass	Housely Road to Aris T. Allen (MD 665) or MD 450 to Truman Parkway.	No activity

Project Name	Description and Purpose	Status
Intermodal Transit Station and Riva Square	Potential Intermodal Transit Station and Riva Square.	No activity
Gateway Village Drive	New connector road through Sam's Club and the SHA Maintenance facility from MD 178 to Housley Road.	Under design. No construction funding.
Midterm Project Planning.	Acquisition of right-of-way and finalization of alignment for Mid- and Long-term project.	
Riva Town Center Boulevard	Proposed road connection between Annapolis Harbour Center and Festival at Riva Road.	Design completed. No const. funding.
Riva Road/MD 665 Interchange	Study ways to improve operation of the Riva Road/MD 665 interchange.	Under study

### ***Transit Network***

Annapolis Transit (AT), under the direction of the Annapolis Department of Transportation, is the primary provider of public transportation services for Annapolis and Parole. AT also provides expanded service to outlying areas including Anne Arundel County Community College and Edgewater. Ridership on AT has been growing every year as the system expands to offer increasingly convenient, reliable transportation in and around Annapolis. Anne Arundel County provides an annual capital grant to help support AT's operating costs.

Annapolis Transit provides a mix of fixed-route and deviated fixed-route service. AT serves low-, middle-, and high-income areas and links most of the major high-density residential areas with the primary destinations and activity centers. The usefulness of the system is enhanced by the use of a pulse schedule, whereby all but one of the local fixed routes serve the central transfer facility at the same time. The pulse schedule results in a more efficient use of bus vehicles while making the entire service area accessible with a short transfer.



### **Fixed or Deviated Fixed-Route: Bus**

Annapolis Transit operates six local routes, two local downtown/park-and-ride routes, one distant park-and-ride route, and two distant County routes. A non-local route (C-60) provides recently instated service to the BWI Airport area. Five of the local routes operate in a “pulse” fashion from a central transfer point on Spa Road, providing a convenient means for passengers to transfer between routes. Three of the local routes operate on 30-minute headways; the other three local routes operate on 60-minute headways. The six local bus routes are shown in Figure 6 and described in detail below. A detailed summary of the AT routes is provided in Appendix A.

### **Regional Routes**

Annapolis Transit operates additional routes that connect Annapolis and Parole as well as outlying areas:

- **Route #31 Kent Island Shuttle** providing morning and evening peak travel service from Kent Island park-and-ride to the Stadium and downtown.
- **Route C-40** providing service between Edgewater and Arnold and Anne Arundel County Community College.
- **Route C-50** providing service between Annapolis and Shady Side Deale area of South County.
- **Route C-60** providing service between Annapolis, Cromwell light rail station, BWI, and Arundel Mills.

### **Free Shuttles**

Annapolis Transit operates two free shuttle routes, which connect parking lots at the Naval Academy Stadium and downtown:

- **Route #11 – Stadium Shuttle – Annapolis** with free service with 15 stops from the stadium park-and-ride lot and downtown Annapolis. Headways are 3-5 minutes during the morning and evening peak and 10-15 minutes during off-peak times
- **Navy Blue Route** with timed stops with 30- minute headways from the stadium to Navy Gate 1 and West Annapolis.

### **Hours of Operation**

The colored routes, the C-40, C-50, and C-60 routes, and shuttle vary somewhat regarding services periods, but generally bus service is provided between 5:30 a.m. and 7:00 p.m. (Figure 6).

### **Fares**

- Zones are \$0.75 each
- One-way trip base fare is \$0.75; transfers are free
- Senior citizens with an ID card can ride for ½ base fare during off-peak hours
- Multiple discount passes:
  - Weekly discount cards \$7.00
  - Local Monthly card \$40.00
  - Unlimited card \$80.00
  - Annual pass \$350.00
- ADA off-route service: 2 x base fare

### **Ridership and Operating Statistics FY 2002**

Annapolis Transit exceeded 1.2 million passengers in fiscal year 2003. Available information shows increases in annual ridership for the past several years. The Kent Island Shuttle is a very cost-effective route with 105 passenger trips per vehicle hour. Of the local fixed routes, the Yellow, Red and Green routes are operating in a very acceptable range, comparable to the system-wide averages for Baltimore, Boston, Los Angeles, New York and San Francisco.

### **Vehicles and Maintenance**

Annapolis Transit has 18 active passenger vehicles, including four "trolley" vehicles, to meet peak vehicle need. All buses and one of the four trolleys are currently wheelchair accessible. All new vehicles are lift-equipped and meet the accessibility standards of the

Americans with Disabilities Act (ADA). In addition, all buses are now equipped with convenient front-loading bike racks. AT provides administrative, vehicle storage and maintenance functions at a facility on Chinquapin Round Road.

### ***Maryland Transit Policies***

Maryland's first statewide transit plan, the *Maryland Comprehensive Transit Plan* (MCTP), was published in December 2000 and presented recommendations for improving transit across Maryland. The MCTP detailed an ambitious goal of doubling transit ridership by the year 2020 by outlining strategies within the short term (first three years of the plan) consisting of improvements to current transit services and expanding services in new markets, transit-oriented development, marketing, and other methods in later years. In particular, the MCTP offered the following recommendations for the Annapolis region:

#### **Short-Term Recommendations**

Projects that can be implemented within three years, provided that sufficient funding and other resources are available:

- Bus stop/shelter enhancements (accomplish through public/private partnerships)
- Increase bus service on Annapolis/Parole area routes
- Increase downtown parking shuttles
- Improve signage and transit information
- Institute Smart Cards program
- Add new routes
- Implement transit supportive development/initiatives
- Enhance public awareness programs (new transit map, website, marketing efforts, etc.)

#### **Long-Term Recommendations**

Projects that will be implemented during the remainder of the MCTP's 20-year timeframe:

- Expand service from Annapolis into adjacent areas of Anne Arundel County (particularly to growth areas and markets).
- Improve services by extending the service day, increasing frequency of service and adding Sunday service on all routes.
- Integrate clean-fuel, low-floor, and lighter-weight buses into fleet.
- Institute bicycle/pedestrian access improvements.
- Develop a new bus transfer facility.
- Install on-board technology improvements such as Automatic Vehicle Location (AVL), Global Positioning Systems (GPS) and Mobile Data Terminals (MDT).
- Institute Intelligent Transportation System (ITS) capabilities such as interactive trip planning on the website and "real time" travel information.

### ***The City of Annapolis and Anne Arundel County Transit Development Plan Update***

The *City of Annapolis and Anne Arundel County Transit Development Plan Update* was completed in 2003. This Plan update evaluates future needs, provides an assessment

of services/providers/alternatives, and presents a transit Plan for a five-year horizon. Major proposals, which relate to the study area are:

- **Replace/Provide Shelters.** Annapolis Transit (AT) initiated a project to replace and/or provide bus shelters along all of its routes. This project is proceeding, and it is planned to continue through 2008 when all of the existing shelters will be replaced featuring weather protection, seating, and lighting.
- **Parole Circulator.** A mid-day circulator is proposed to begin operation through the Parole area, including Bestgate Road, West Street, Riva Road, Solomons Island Road, Chinquapin Round Road, and Forest Drive. This circulator, which would operate between 11 a.m. to 2 p.m., is intended to provide alternative transportation over the noon hour.
- **College Parkway – New Route.** This route would connect Spa Road and Anne Arundel Community College via West Street and the Naval Academy Bridge.
- **Shuttle – Inner West Street.** A shuttle between Inner West Street Circle, Church Circle, Duke of Gloucester, Green Street, and Main Street is proposed for daytime and evening service on weekdays.
- **Heritage Harbour – New Route.** This bus service is proposed between Heritage Harbour and Annapolis Mall and Medical Center during the daytime hours.
- **Shuttle – Annapolis Triangle.** A shuttle on Taylor Street, Inner West Street, Church Circle, Duke of Gloucester, Green Street, Randall Street, King George Street, College Avenue, and Rowe Boulevard is proposed for daytime service throughout the week.
- **Provide Real Time Information Signs.** The City of Annapolis/Annapolis Transit has programmed funds in the Transportation Improvement Program (TIP) for implementation of an Intelligent Transportation System (ITS) using a Global Positioning System (GPS) with 2-way communication, on board displays/enunciators and real time on-site information for all bus services, including shuttles at bus stops/shelters. AT has verified equipment needs to make this possible. Other initiatives include color coded routes and information provided in Spanish.
- **Annapolis Area Transit Center.** The Spa Road Transfer Point is inadequate to meet operational and transit use needs. It is a high priority for AT to find an alternate location.

### ***Other Transit and Transportation Providers***

#### **Maryland Transit Administration**

The Maryland Transit Administration (MTA) provides local and commuter services between Annapolis/Parole to Patapsco Light Rail Station, Kent Island, New Carrollton Metrorail Station, and Washington, D.C. It also provides paratransit services through its van transportation and handy cab programs. MTA provides the following routes, which serve the study area:

- **Route 14 – Annapolis/Patapsco Light Rail Stop.** The route serves the north portion of downtown with service to the light rail station. This route will change following the adoption of MTA's recommendations for route restructuring in the fall. New Route 41 will replace segments of Route 14 and also eliminate Sunday service and reduce headways to two hours on Saturday.

- **Route 921 – Annapolis/New Carrollton.** Commuter service is provided with stops at the Navy-Marine Corps Memorial Stadium lot, downtown, West Street, and Harry S. Truman park-and-ride lot.
- **Routes 922 and 950 – Kent Island/Annapolis/Washington, D.C.** Commuter service is provided with stops at the Navy-Marine Corps Memorial Stadium lot, downtown, West Street, and Harry S. Truman park-and-ride lot.

### **Greyhound Intercity Bus Service**

Greyhound provides intercity bus transportation service on routes operated by Carolina Trailways. The bus stop and ticket counter are operated by the Annapolis Department of Parking and Transportation on Chinquapin Round Road. The seven buses that stop here daily travel directly to and from Baltimore, Washington, D.C., and the Eastern Shore.

### **Taxi Services**

Three major cab companies provide approximately 180 taxicabs to serve the study area. There is a fixed charge of \$1.80, then \$1.40 per mile, or \$.20 for each one-seventh of a mile. For any trip originating outside of the City to a destination outside of the City, there is a \$5.00 fee. An additional \$1.00 per passenger fee is applied for subsequent passengers beyond the first two.

### **Water Taxi Service**

Water taxi service is provided by Watermark, a private company. Watermark will pick up individuals anywhere that is accessible by boat on an on-call basis. It offers five "water taxis" and two other small boats. User groups are primarily tourists, and the hours of operation reflect the fact that they tailor their service to times of high tourist use.

### **ARTMA**

The Annapolis Area Transportation Management Association (ARTMA) provides ride matching services, information on transportation alternatives, referrals, and a guaranteed ride home for member employers only.

ARTMA's ride-matching program provides service to approximately 300 persons per year. Users provide their information to the program and are then matched to car or vanpool service through the Commuter Connection network. The user makes subsequent contacts, between the user and the car or vanpool service. Any individual who lives or works in study area is eligible for this service. There is no fee for the matching service, however, the car or vanpool service may have a fee.

### ***Future Plans***

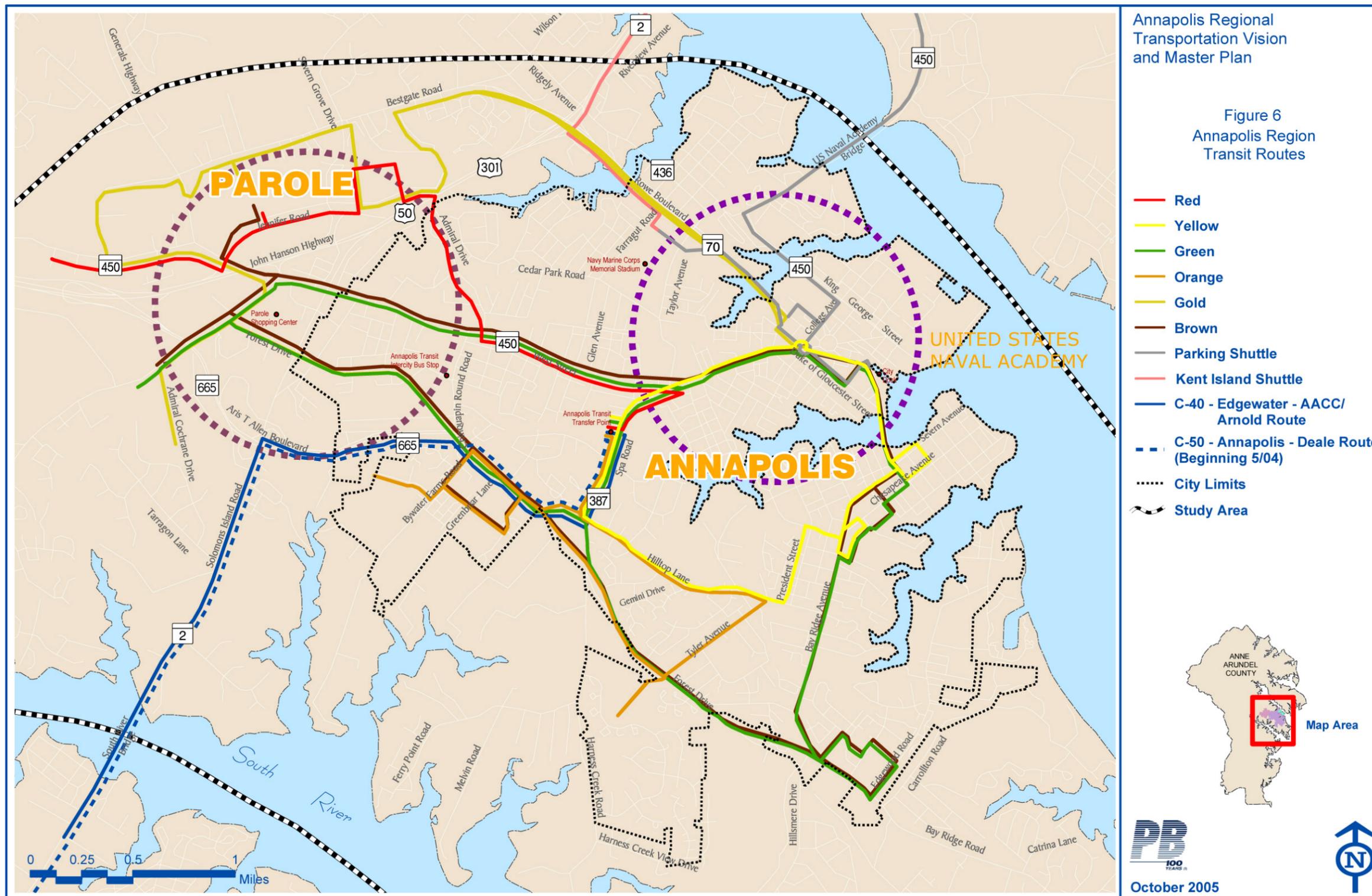
The City of Annapolis, Annapolis Transit, Anne Arundel County, and MDOT have plans for several initiatives that support MCTP recommendations and transit ridership goals:

- **Smartbike.** The City of Annapolis proposed to purchase computerized bicycle-and-rack systems called Smartbike that operate using smart cards. Each bicycle rack would store 10 bikes. Funding for *Smartbike* is on hold.
- **Annapolis Transit Improvements.** Annapolis Transit is currently installing new transit stop signs with a user-friendly "you are here" map, Spanish translations, and color-coded routes. Many of the more than 180 bus stops have new,

illuminated shelters with benches and Annapolis Transit eventually plans to increase the number of passenger shelters from 35 to 100. Further, Annapolis Transit sponsors “Transit Perks”, a program that allows employers and employees to take advantage of state and federal tax benefits for commuting by transit.

- ***Parole Improvements.*** The 1994 *Parole Urban Design Concept Plan* recommends expanding the park-and-ride lot at Riva Road/Harry Truman Parkway and providing park-and-ride capacity in the vicinity of the Annapolis Mall. The 1994 Plan recommends the development of an intermodal center within the growth management area.
- ***Route and Service Improvements.*** The *Annapolis/Anne Arundel County Transit Development Plan* (TDP) includes specific recommendations for improving and expanding service throughout the Annapolis area.
- ***Intermodal Center Feasibility Study.*** Anne Arundel County and MDOT began work on an Intermodal Center Feasibility Study to determine an appropriate location for a transit center and to ensure that the development remains consistent with priority places initiatives. Funding for the study was eliminated. The study remains on hold pending identification of new funding.
- ***Forest Drive Pedestrian and Transit Facilities.*** This project includes the installation of sidewalks, provision of bus shelters, pedestrian crosswalks and lighting at appropriate locations along Old Forest Drive and Old Solomon’s Island Road between MD Route 2 and Chinquapin Round Road.

Figure 6 – Annapolis Region Transit Routes



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## ***Existing Bicycle and Pedestrian Network***

### **Mixed-Use Facilities**

The study area contains several regional bicycle and pedestrian facilities that include the Baltimore & Annapolis (B&A) Trail and the Washington, Baltimore & Annapolis (WB&A) Trail (Figure 7). While the Prince George's County portion of the WB&A trail is complete, the Anne Arundel County portion, which will incorporate the B&A Trail in the future, is not yet finished. Work continues to complete this system. A detailed description of these trails is provided in Appendix A.

Aside from the regional trail network, the City of Annapolis supports its own existing network of pedestrian and bicycle facilities, known as the Colonial Annapolis Maritime Trail System (CAM Trail), also shown in Figure 7. This 16-mile touring network is comprised of the Spa Creek Trail, the City's Pathway System in Eastport, and the Poplar Park Trail.



The CAM Trail, the B&A Trail, and the WB&A Trail are referred to as Millennium Legacy Trails. These connecting trails give access to recreational, cultural, and educational facilities throughout the region. Bike racks are available along the trail, other public areas, and at most street-end/waterfront parks.

### **Pedestrian Network**

Downtown Annapolis has a pedestrian-oriented development pattern characterized by the following elements that encourage a high degree of pedestrian activity:

- Human-scale building architecture and orientation of buildings to edge of sidewalks.
- Multi-use streets usable by people, bikes, transit, and cars.
- Mixed uses that are in close enough proximity to walk to each other.

In contrast to downtown Annapolis, the outlying portions of the City, Parole, and the remainder of the study area exhibit a more automobile-oriented development pattern that typically discourages pedestrian activity with:

- Commercial buildings set far back from streets and each other, surrounded by parking.
- Obstacles in sidewalks, such as utility poles.
- Missing sidewalk segments.
- Roads and streets suitable for use only by cars.
- Wide roads with higher speeds and capacities.



The only pedestrian trail in Parole exists along Admiral Drive. There are currently no bike trails in Parole. Planned trails through Parole include: the South Shore Trail (a portion of the planned American Discovery Trail), as well as potential trails that are yet to be named.

The *Annapolis Neck Small Area Plan* notes the lack of adequate sidewalk coverage in the outlying areas of the City of Annapolis, and recommends plans for sidewalk improvements to be made on specific streets in and around the City of Annapolis and Parole.



### **Bicycle Network**

Bicycle routes in the Annapolis region include the mixed-use trails, mentioned above, striped bicycle lanes on portions of Hilltop Lane and Bay Ridge Road, and shared spaces along major roads. Some of these shared routes have “Share the Road” signage indicating which roads encourage consideration for bicyclists. Conditions for bicycling along many of the major streets in the study area are generally difficult and sometimes potentially dangerous due to heavy traffic volumes, high speeds, and/or limited room to share the road. In addition, connections between neighborhoods on the local street system are often limited.

### ***Planned Pedestrian and Bicycle Facilities***

The following bike and pedestrian improvements are proposed in the Annapolis region.

#### **Mixed-Use Facilities**

The American Discovery Trail is a planned multi-use, east-west national trail. The American Discovery Trail will extend from the eastern shore of Delaware to San Francisco. Locally, it follows the Broadneck Peninsula trails, the Baltimore & Annapolis (B&A), the Annapolis Pathways, and the Washington, Baltimore & Annapolis (WB&A) and Anacostia Trails through Anne Arundel and Prince George’s Counties into the District of Columbia.

The City of Annapolis plans the following pedestrian and/or bike improvements:

- ***Forest Drive Pedestrian and Transit Facilities.*** Installation of sidewalks, provision of bus shelters, pedestrian crosswalks and lighting, at appropriate locations, from Solomons Island Road to Chinquapin Round Road (1.0 miles). Design and right-of-way acquisition is complete; construction to begin 2004.
- ***Taylor Avenue.*** Bike lanes and sidewalks from Annapolis Street to the end of the Department of Natural Resources (DNR) property. The sidewalks will resume at the Park Place property and extend to Westgate Circle. This work has recently been completed. Funding has not been identified for the middle section of this project between the DNR and Park Place properties.
- ***Edgewood Road.*** Sidewalks and bike paths from Bay Ridge Avenue to Bembe Beach Road (2.2 miles). Design is complete and construction began in 2003.

- **Rowe Boulevard (MD 70).** Sidewalks from U.S. 50/U.S. 301 to Calvert Street (2.0 miles), depending on available space. The sidewalk will be added on the east side from North Bestgate Road to the Farragut Road/Melvin Avenue intersection. Construction is underway and is anticipated for completion in summer 2006.
- **The Poplar Avenue Trail Extension.** Construct recreational trails from the Parole area and the Annapolis Mall to the City's historic district to improve safety of cyclists and pedestrians. A Phase 3 improvement is to create a designated bike lane along Admiral Drive to Jennifer Road (1.0 miles) and some sidewalk links where space is available. This project is not yet funded.

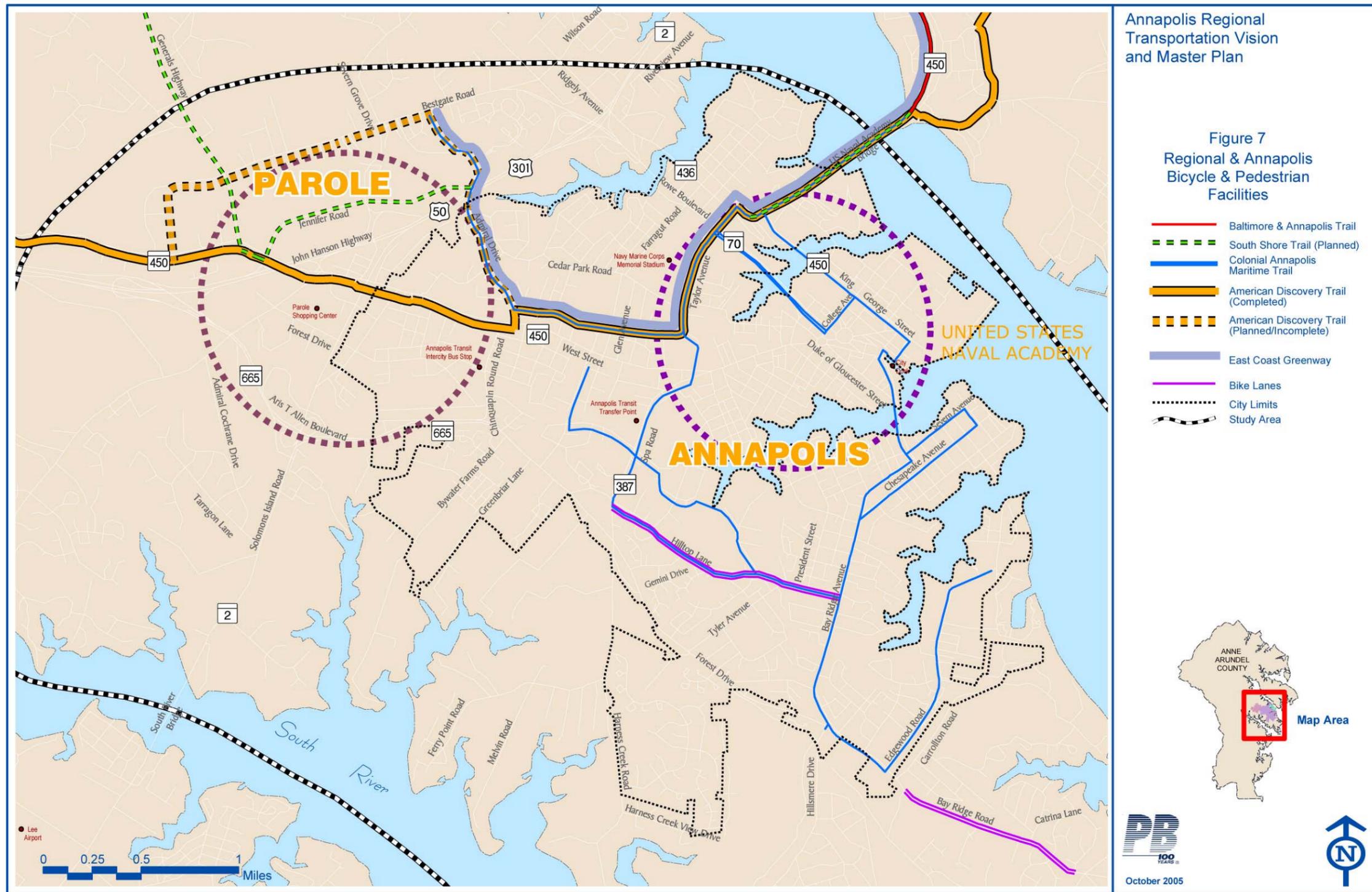
### ***The Anne Arundel County Pedestrian and Bicycle Master Plan (March 2003)***

This Plan suggests the following tiered improvements for existing and new bike/pedestrian infrastructure and Recommended Pedestrian Improvement Zones. Both recommended improvements identify routes in the Annapolis region and encourage building a new bicycle/pedestrian network in the region that interfaces with the existing Annapolis network.

- **Tier 1 Recommended Improvements** are corridors that are considered high priority locations for bicycle and pedestrian improvements. The specific type of improvement for these corridors, which include Bestgate Road, Rowe Boulevard, King George Street, and Riva Road, will be determined by further investigation.
- **Tier 2 Recommended Improvements** are described by the Plan as designated routes that are also recommended for bicycle and pedestrian improvements when opportunities arise in the future to make such improvements. The Tier 2 routes include West Street, Solomons Island Road, Riva Road, Forest Drive, General Highway, Bay Ridge Road, and Arundel on the Bay Road.
- **Recommended Pedestrian Improvement Zones** are described by the Plan as areas that are considered high priority locations to eliminate critical gaps in the network and improve safety for pedestrians. Parole is identified as a pedestrian improvement zone.
- **Sidewalk improvements** are required as part of the typical section whenever roads are constructed or reconstructed in urban areas such as Parole or suburban areas per the County's Design Manual.

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Figure 7 – Regional & Annapolis Pedestrian & Bicycle Facilities



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## ***Parking***

The City of Annapolis has four major downtown public parking garages, six major public parking lots, and approximately 500 metered spaces (2-hour limit, 5 cents/6 minutes); all within walking distance of the commercial area of downtown. The Maryland Department of Governmental Services (DGS) owns or leases a portion of the garaged spaces in the downtown area to provide spaces for State employees. The City also issues approximately 1,800 residential parking permits every year.

Parole consists of approximately 95% commercial and industrial use and approximately 5% residential use. The commercial and industrial sections typically have sufficient parking available, and parking has not been a major concern for this area. Residential parking is also at a surplus and metered parking does not exist in Parole.

### **Existing Facilities**

- ***Parking garages and lots*** in downtown Annapolis are primarily utilized by daytime workers (approximately 75% of the total spaces in Gotts and Hillman garages). The remaining spaces are generally utilized by short- and long-term patrons, day tripper tourists, and shift workers. Figure 8 provides summary information regarding downtown parking facilities, and Table 1 provides supplemental parking information.

The State Department of Government Services (DGS) owns or leases approximately 2,900 parking spaces for more than 4,000 State employees working in the Annapolis area. The primary parking locations include Gotts Garage (160+ spaces), the Navy parking lot (800 spaces), and Whitmore Garage (250+ spaces). DGS plans to construct a new 831-space garage for State employees near the Rowe Boulevard entrance into the city. The Knighton Parking Facility recently opened with 270 additional spaces along West Street, between Southgate Avenue and Colonial Avenue.

The Westfield Shopping Town Mall (Annapolis Mall) in Parole has a parking garage for patrons of the mall to use while shopping. Two additional garages are planned.

- ***Park-and-rides and shuttle buses*** operate from the US Naval Academy Stadium lot, which is owned and operated by the US Naval Academy Athletic Association (USNAAA). Approximately 3,800 parking spaces are available to the general public for satellite parking, and approximately 400 parking spaces are used for commuter parking. DGS also leases 800 spaces in this lot. MTA buses run between the park-and-ride and Baltimore as well as Washington, D.C. The parking rate at this lot is \$3.00/day during the week and \$4.00/day on the weekends. This parking lot also serves patrons using the shuttle (trolley) service into downtown Annapolis.

The Maryland SHA operates the Riva Road park-and-ride located in Parole near the corner of Riva Road and Harry S. Truman Parkway. This park-and-ride



lot serves patrons riding the commuter buses to Baltimore and Washington, D.C. This 480-space lot is currently operating at or over capacity. Design development for an additional 200 spaces is underway, and construction is planned for completion in Fall 2006.

- **Residential parking districts** in the City of Annapolis offer residents priority in obtaining on-street parking in four areas near the downtown (Figure 8) by paying a residential parking permit fee. Non-residents may legally park for up to two hours during enforcement hours. This parking system is successful when there are sufficient on-street spaces for residents, but there are often times when parking spaces are unavailable to residents. The City does not currently limit the total number of permits issued per residence per year, or total for the district.
- **Metered parking** provides over 500 parking spaces in the immediate downtown Annapolis area. These spaces serve mostly the patrons of downtown (most visiting the Dock area and Districts 1 and 2), deliveries, and downtown employees. These spaces are in extremely high demand during the day. No metered parking exists in Parole.
- **Parking fines** for both parking meter violations and residential parking violations are mandated and regulated by the Annapolis Police Department. Parking meter violations result in a \$15.00 fine (or \$25.00 for residential violations) if paid before 11:00 p.m. on the day of the violation, with increasing fees afterwards. The stakeholder interviews drew out a lot of criticism for poor and/or inconsistent enforcement of parking meter violations. According to some of the interviewees, this has been a long-running problem between downtown merchants and the police department.

### **Proposed Parking**

Several new garages have been planned for the downtown area. The Park Place Facility is in the planning/design phase and will provide approximately 1,396 additional spaces at the Northeast corner of West Street and Taylor Avenue.

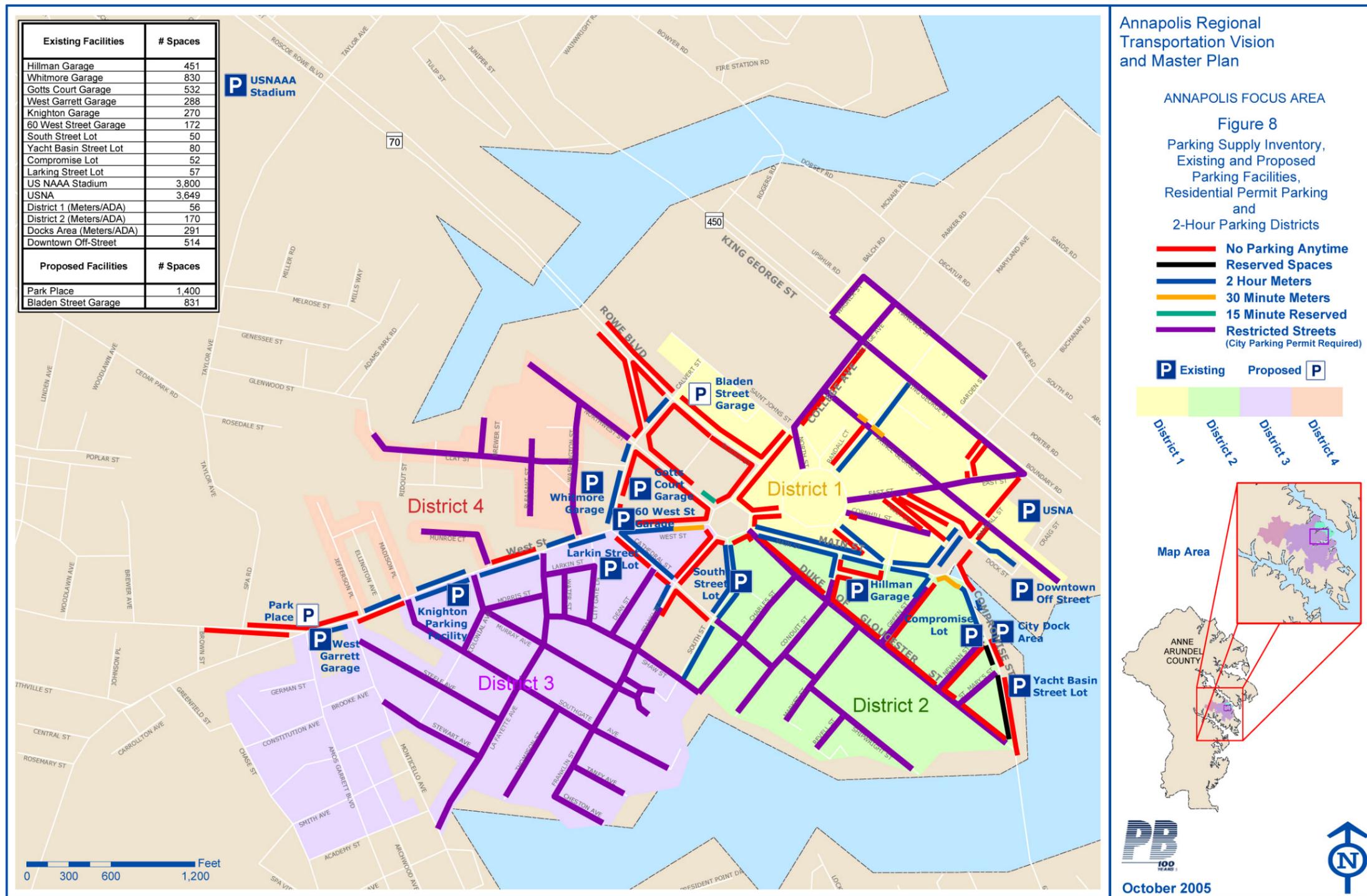
### **Downtown Public Parking Summary**

The City of Annapolis has a large number and variety of existing and proposed parking facilities:

- Over 3,000 parking spaces are easily accessible to the downtown area in the form of garages, lots, and metered parking. This allows patrons to walk to the heart of the commercial district with little difficulty.
- Nearly 3,800 parking spaces are available to the general public for satellite parking at the USNAAA Stadium Lot, with shuttle (trolley) service provided to and from the lot to downtown.
- An additional 3,500 spaces are available for faculty, staff and midshipman on the USNA campus.
- An additional 2,500± spaces are currently under development at the proposed Knighton, Park Place, and DGS facilities.

In addition, Parole has more than ample parking for patrons of its commercial district. Some lots have extra spaces available during the workweek.

Figure 8 – Parking Supply Inventory



**Table 2 – City of Annapolis Downtown Parking Summary**

Existing Facilities	Owner	Location	User Groups	# Spaces	Cost/Comments		
					Initial Rate	Additional Hourly Rate	Maximum Rate
Hillman Garage	City of Annapolis	Gorman St. (behind City Hall)	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	451	Free (Hour 0-1)	\$1.00/Hour (Hour 1-8)	\$8.00 (8+ Hours)
Whitmore Garage	Anne Arundel County	37 Clay St.	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	830	\$1.00 (Hour 0-1)	Additional \$0.50/Hour (Hour 1-6)	\$4.00 (6+ Hours)
Gotts Court Garage	City of Annapolis	Calvert Street between West and North Streets	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	532	Free (Hour 0-1)	\$1.00/Hour (Hour 1-8)	\$8.00 (8+ Hours)
West Garrett Garage	City of Annapolis (Managed by Towne Park)	275 West (at Amos Garrett Blvd)	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	288	Free (Hour 0-1)	(Hour 1-2) \$3.00; (Hour 2-5) Additional \$1.00/Hour. Monthly Passes (\$65 for bldg workers, \$85 others)	\$7.00 (5+ Hours); \$5.00 flat rate entrance After 5:00 PM
60 West Street Garage	City of Annapolis	Enter on Calvert St.	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	172	\$1.00 (0-20 minutes) ; \$1.50 (20 min-1 Hour)	Additional \$1.50/Hour (Hour 1-5)	\$9.00 (5+ Hours)
South Street Lot	City of Annapolis	South of Church Circle on South St.	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	50	\$1.00 (Hour 0-1)	Additional \$1.00/Hour (Hour 1-7)	\$8.00 (7+ Hours)
Yacht Basin Street Lot	Marriott	On Compromise St. south of Marriott	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	80	\$8.00 Daily Flat Rate, \$10.00 Weekend Flat Rate, \$15.00 Overnight Flat Rate		
Compromise Lot	School	School Lot on Compromise St.	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	52	Private Parking Weekdays. \$5.00 public parking after 4:00 PM Thursdays and Fridays. \$5.00 public parking Saturdays and Sundays.		
Knighton Garage	City of Annapolis	West St. between Southgate and Colonial	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	270	\$8.00 maximum per day typical to Hillman and Gotts Court Garage. \$100.00 for 5-day/week monthly passes and \$120.00/month for 7-day/week monthly pass		
Larkin Street Lot	City of Annapolis	Larking St. and City Gate Lane	Daytime workers, shift workers, residents	57	50 Private spaces by permit only. 7 metered spaces (2 hour parking) 10-7:30 Monday - Saturday, 12-6 Sunday.		
USNAAA Stadium	Naval Academy Athletic Association	Rowe Blvd. between Taylor and Farragut	Daytime workers (leases to State of Maryland) Daytime workers, shift workers (daily parkers) Daytime workers (monthly pass holders) Short/long-term patrons, day tripper (stadium events)	800 290 110 3,800	\$4.00/Day, \$5.00/Day during stadium event; \$0.75 Shuttle to Downtown Historic District		
USNA	Naval Academy	Northeast of King George Street	Daytime workers (Navy personnel) Short/long-term patrons	3,482 167	No Cost		
District 1 (Meters or Handicap)	City of Annapolis	Downtown	Shift workers, short-term patrons, day tripper, deliveries	84	Every \$0.05 will buy 6 minutes		
District 2 (Meters or Handicap)	City of Annapolis	Downtown	Shift workers, short-term patrons, day tripper, deliveries	198	Every \$0.05 will buy 6 minutes		
District 1 (Residential)		Downtown	Residents, overnight visitors	459			
District 2 (Residential)		Downtown	Residents, overnight visitors	152			
Docks Area (Meters or Handicap)	City of Annapolis	Docks	Shift workers, short-term patrons, day tripper, deliveries	291	Every \$0.05 will buy 6 minutes		
Downtown Off Street	City of Annapolis	Downtown	Residents, overnight visitors	514	Varies		
Total Existing Spaces Available				13,129			
<b>Proposed Facilities</b>							
Park Place	Private Owner	Northeast corner of West St. and Taylor Ave.	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	1,396	In Planning/Design Phases. Ground Breaking in 2003. Will open in Late 2004 or early 2005. County and City reserved 896 spaces for \$25,000,000 bond insurance.		
Bladen Street Garage	DGS	Along Rowe Blvd./Bladen St. near State House	Daytime workers, short/long-term patrons, day tripper	831	Design Phase to begin in Fall/Winter 2004. Construction in Summer/Fall 2005. Opening in Winter 2006.		

## ***Land Use***

The study area consists of a typical range of land uses. The major land use is single family residential. Government and institutional uses, including City, County, State, and U.S. Naval Academy facilities account for the second most common land use in the area. These uses are concentrated in the downtown and southeast side of Parole. Commercial and office uses are primarily concentrated in Parole, Outer West Street, Forest Drive, and downtown. Higher density residential development is generally within the City of Annapolis. The study area has relatively little industrial land, which is primarily located on the north and south fringes of Parole (Figure 9).

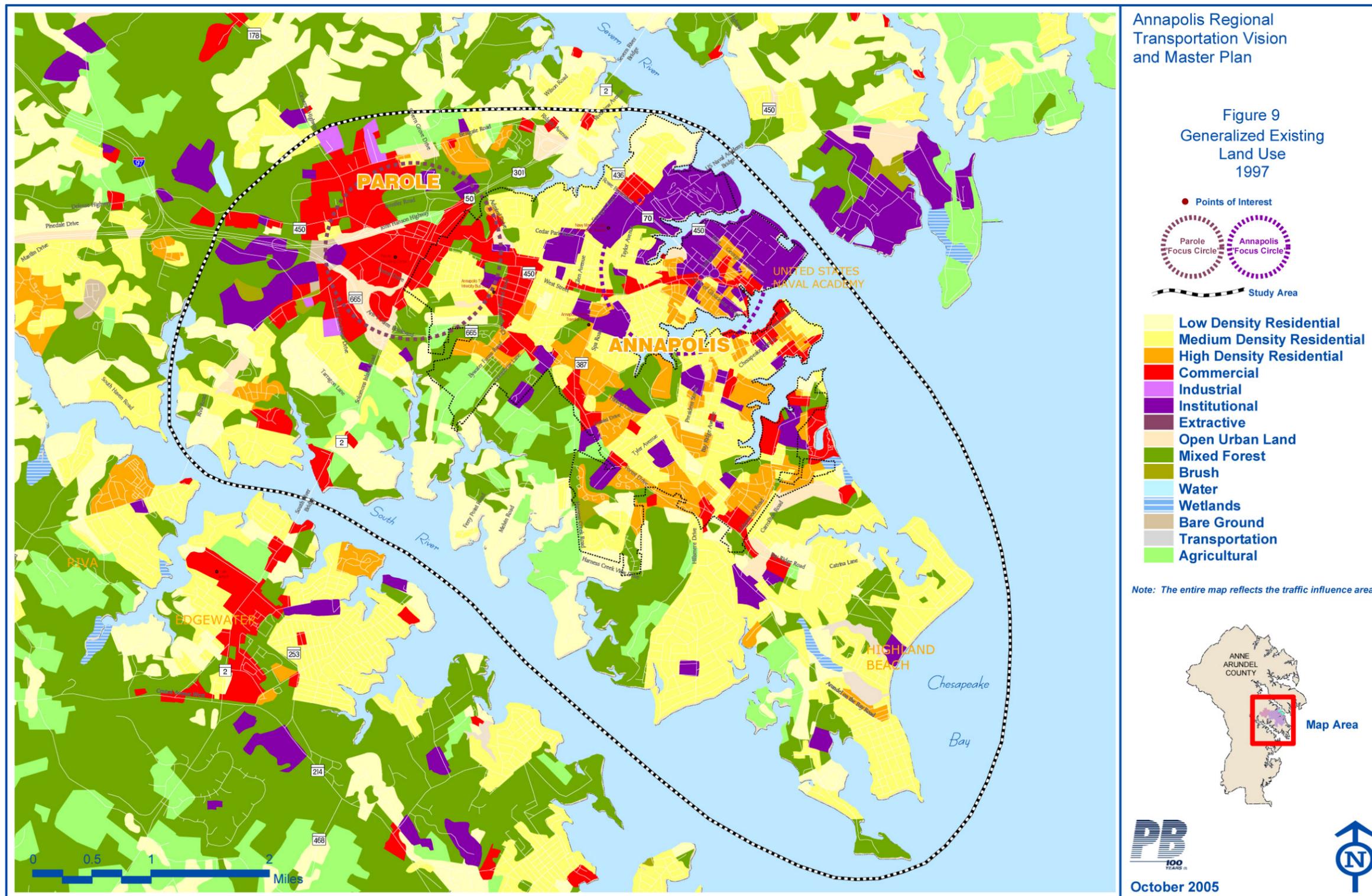


The Anne Arundel County Annapolis Neck Small Area Plan and the Annapolis Comprehensive Plan both call for focused development and redevelopment in what are called “activity centers” in the County Plan and “mixed-use centers” in the City Plan. The majority of these centers are common to both plans. These activity centers and mixed-use areas are West Annapolis, Downtown, Eastport, Inner West Street, Outer West Street, Forest Drive, and Outer Neck/Bay Ridge Avenue/Hillsmere. The County Plan also identifies Parole and the City Plan identifies Central West Street and Bay Ridge Avenue/Eastport as additional centers.



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Figure 9 – Generalized Existing Land Use



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### ***Planned or Approved New Development***

The study area is also continuing to grow with a significant number of development and redevelopment projects, which have been approved, are under construction, or have recently been completed. While many of these projects have or will include transportation improvements, they will generally increase the pressures placed on the existing transportation system. The following table summarizes the projects recently approved or completed.

**Table 3 – Recent Development Projects**

<b>Project Name</b>	<b>Project Description</b>	<b>Parking</b>	<b>Status</b>
<b><i>Commercial Projects</i></b>			
716 Gidding Office Bldg.	19 KSF professional office	51	Complete
Gardner Center	17.2 KSF retail/office	268	Complete
Honda Parts & Service	New service facility	54	Complete
Honda Sales	Renovated sales facility	57	Complete
Chesapeake Yacht Interiors	Renovate residence for business	1	Under Const.
Annapolis Performance Sailing	11 KSF maritime service/retail	9	Complete
Farmer's Bank of Maryland (now BB&T)	New commercial bank	11	Complete
West Village	Retail/residential use	Knighton Garage	Under Const.
O'Callaghan's	125-room hotel	65	Complete
Olde Solomon's Office Center	17.5 KSF commercial office	58	Complete
Sigma business Center	10 KSF commercial office	94	Complete
Capital-Gazette Press Office Bldg.	Commercial office	287	
115 West Street Office Bldg.	22 KSF commercial office	67	Complete
Tributary Grill	150-seat restaurant	45	Under Const.
Severn Bank Bldg.	75 KSF office/retail	274	Under Const.
McDonald's	Reconstruct restaurant		Complete
Navy-Marine Corps Stadium	Renovations		Under Const.
St. Johns College	New dormitory		Under Const.
Knighton Parking Garage		270	Complete
Westfield Shoppingtown Expansion	363,600 sq. ft./672 additional parking spaces totaling 1,542,000 Sq. ft./5,799 spaces	672	Complete
Annapolis Towne Centre at Parole	675,000 sq. ft. retail, 900 residences and 92,000 sq. ft. office	5,616	Proposed
<b><i>Residential Projects</i></b>			
Bates HS Redevelopment	71-unit care facility	61	Under Const.
August Woods	64-unit townhome	112	Complete
Hope Rising II/rider's Glen	80-unit townhome	172	Complete
Harborview Subdivision	10-units (townhomes & single family)	20	Complete
Kingsport	172-unit planned development	344	Under Const.

<b>Project Name</b>	<b>Project Description</b>	<b>Parking</b>	<b>Status</b>
Acton's Landing	112-unit PUD (single & multi-family)	190	Under Const.
Baywoods of Annapolis	202-unit care facility	316	Complete
Gardens of Annapolis	120-unit care facility	60	Complete
Bloomsbury Square	52-unit public housing	51	Complete
Olde Town Manor	10-unit PUD	20	Under Const.
<b>Mixed-Use Projects</b>			
Village Greens Phases I/II	90-unit care facility, 216 apartments, commercial		Complete
Park Place	Commercial/residential PUD	1,396	Under Const.
Union Realty	Mixed-use	660	
Westbridge Village (Johnson Lumber site)	350-unit residential, 10 KSF retail PUD		Under Const.

### ***Population, Employment, and Tourism***

The study area population in the 2000 Census was approximately 63,000 residents with a corresponding number of jobs totaling 60,000 (Annapolis Neck SAP). The City of Annapolis accounts for approximately 36,000 of these residents and 30,000 of the study area jobs. Government employment in the downtown, including the State, Anne Arundel County, City of Annapolis, and USNA, accounts for over one-half of the City employment with approximately 15,700 positions. Parole area accounts for much of the remaining study area population and employment with approximately 14,000 residents and almost 7,000 jobs (Annapolis Neck SAP).

Tourism is a very important element of the local economy with approximately 4 million visitors annually. Approximately 2.6 million are daytime visitors (over 7,000 per day on average), and about 1.4 million stay overnight (over 3,800 per day on average). Visitation varies throughout the year relating to seasonal and special events as well as the legislative session. There are approximately 2,000 hotel and bed and breakfast rooms available in the study area to accommodate overnight visitors.

### **Relevant Plans and Studies**

Given that a primary purpose of this Plan is to foster a higher level of planning coordination and cooperation, existing plans and planning projects were reviewed at the outset. Many documents were reviewed as described in Appendix A. The documents of major importance are summarized below:

#### ***Annapolis Comprehensive Plan***

Adopted in 1998, this Plan articulates the City's desired course in the areas of Regional planning, land use, transportation, housing, economic development, community uses, sensitive areas, and urban design. Key goals are to:

- Establish mechanisms for regional cooperation to address land use, transportation, and other planning issues, which transcend City boundaries.
- Develop multi-modal transportation system.
- Promote the creation of nine "mixed-use centers" to provide focal areas for new development and redevelopment and to enhance the vitality of surrounding neighborhoods.

### ***Annapolis Neck Small Area Plan***

Adopted in 2003, this Plan includes virtually the same study area of Annapolis, Parole, and surrounding lands on the peninsula. It is a refinement of the 1997 Anne Arundel County General Development Plan. Key goals are to:

- Establish a regional framework for cooperative planning including land use and transportation.
- Create a multi-modal transportation system.
- Maintain acceptable levels of service (LOS) during peak periods, such as late weekday afternoons. The County does permit LOS F in Parole within maximum average vehicle delay thresholds.
- Improve the safety and appearance of roadways and parking.
- Create a pathway system.
- Focus growth in nine “activity centers”. Many of these centers generally correspond with the City’s “mixed use centers”.

### ***Parole Urban Design Concept Plan***

Although the County has recently worked on amended planning concepts for the Parole Growth Management Area (PGMA), this 1994 document remains as the adopted plan for the area. It calls for a greater mix of land uses, improved pedestrian-scale urban design treatment, and promotion of multi-modal transportation – especially transit. An intermodal center is proposed to serve as a convenient point of access into the Annapolis-Parole area, provide parking facilities and other tourist-oriented services, and provide convenient shuttle bus and/or local bus service with connections in Parole and Annapolis. A location in the proposed “Urban Core” in the vicinity of Holly Avenue and West Street is recommended in the Plan. Tourist-oriented services are proposed to include a visitor’s center and shopping opportunities to combine with shuttles to tour downtown Annapolis. The Urban Core area is proposed to feature multi-story buildings, mixed-use, and urban form, such as buildings fronting on the street, to create a more urban activity center.

Since the adoption of the Parole Urban Design Concept Plan, Anne Arundel County has been considering amendments to this Plan. However, the basic concept of higher density and mixed-use, along with an intermodal facility continue to be envisioned for the area.

## ***Anne Arundel County Pedestrian and Bicycle Master Plan***

The *Anne Arundel County Pedestrian and Bicycle Master Plan* was adopted in 2003. The Action Plan portion of the document makes the following key pedestrian and bicycle recommendations:

- Build for success – begin construction of key on-road bicycle and pedestrian projects throughout the County.
- Build on the success of the trails program in Anne Arundel County – increase access to off-road trails.
- Integrate bicycling and walking as a standard part of each new development and transportation project.
- Establish new sources of funding for pedestrian and bicycle improvements.
- Provide increased opportunities for children and adults to become more educated on safe riding and walking behaviors.
- Create an organizational structure within the County to implement bicycle and pedestrian programs and projects.

In addition, the plan identifies Parole as a Pedestrian Improvement Zone. This designation is intended to focus pedestrian improvements in specific areas where the potential is greatest for pedestrian use.

## ***City of Annapolis and Anne Arundel County Transit Development Plan***

This City/County report was completed in 2003 to serve as a 5-year plan for providing transit services to the City of Annapolis and Anne Arundel County. The Plan calls for:

- Complying with the State goal to double transit ridership by 2020.
- Supporting State Smart Growth (now Priority Places) goals by improving transit facilities and services in activity centers/mixed-use areas identified in City and County plans.
- Increasing the frequency and span of service in Annapolis to reduce traffic congestion and parking demand.
- Improving passenger facilities by providing shelters, improving information signs, developing a new transfer center.
- Providing attractive shuttle services from outlying parking to maintain the historic atmosphere of the downtown and City Dock.

## ***Annapolis Ward One Sector Study***

This study was completed in 1993 in an effort to address planning issues for Ward One, which is located in downtown Annapolis. The study takes a 20-year look at how the central portion of the City should be maintained or enhanced. The study presents four primary conclusions:

- The City must become less congested by implementing an integrated traffic and parking management program.
- The City must be vibrant and vital by retaining or enhancing neighborhoods and commercial areas.
- A new partnership process should be established between government, business, and residents to manage the City's future.
- The historic, maritime character of the City should be enhanced.

## ***Parking and Transportation Problem Solving Action Team Report***

This report was completed in 2002 to propose possible solutions to congestion and parking issues facing downtown Annapolis. The report concluded that existing parking resources are not being used effectively and evening shift workers arrive when garages are full forcing them to park on the street. The report presented a number of proposals to optimize existing parking and to provide adequate parking for different users. Major ideas include:

- Pursuing a system of satellite parking and shuttle services.
- Providing “real time” parking information signs to guide motorists to available parking and shuttle services.
- Revising parking pricing to align with levels of service.
- Expanding the present shuttle service and provide more amenities to encourage its use.

## **Public Affairs Information**

From the outset of this project, a substantial effort was made not only to gather important background information and data, but also to include a public affairs component to better understand regional transportation issues from the viewpoint of citizens, businesses, and stakeholders.

The public involvement process was a collaborative effort involving transportation providers, stakeholders, interested citizens, and user groups contributing their perspectives on transportation needs in the Annapolis region. The Public Affairs Program was designed to: (1) identify transportation needs, issues, and priorities; (2) obtain public reaction to the transportation vision, themes, goals, and objectives that will guide the project; and (3) solidify public acceptance of the recommendations contained within the draft and final Transportation Vision and Master Plan.

The Public Affairs Program had three components: **Public Relations** (distribution of project information); **Public Outreach** (soliciting values, concerns and transportation needs from User Groups and Stakeholders); and **Public Involvement** (formal process of soliciting public input on elements of the Regional Transportation Vision and Master Plan during specific stages of the project).

### ***Public Relations***

The MyAnnapolis website (<http://www.ci.annapolis.md.us/citizens/myannapolis/>), is an email-based news service, designed to help anyone with an interest in the City of Annapolis find out quickly about City government news and events, employment opportunities and more. It is a "custom" service that lets citizens select areas of interest for which to receive information. The MyAnnapolis website maintained current project information including meeting announcements, study progress and interim results. The website also listed opportunities for involvement during the Public Affairs Program, explained the planning process, and identified project contacts for additional information.

## ***Public Outreach***

This project used various strategies to obtain information from the public regarding values, concerns and transportation needs: Stakeholder and Community Leader Interviews, Focus Groups, a Visioning Workshop, Telephone and Written Surveys, a Project Liaison, and a Citizens Advisory Committee (CAC). The following sections summarize the strategies and outcome of each element of the Public Outreach efforts.

### **Leadership/Stakeholder Interviews**

***Purpose:*** To introduce the vision process to and record the perspectives of community leaders and stakeholders. Interviews also generated ideas for additional people to interview.

***Approach:*** Interviews were held with 36 elected officials and community leaders to generate input on values/principals, problems/challenges, issues, potential solutions, and funding options. Interviewees were asked a series of 32 questions that were used to obtain detailed information about the current situation, issues, and concerns from knowledgeable participants in the City and County. The interviews were an opportunity to explore the current situation or future issues with people of expertise or influence in the area.

***Outcome:*** Interviews were conducted between October and December 2002. The complete "Summary of Stakeholder Interviews" is available in Appendix B.

City of Annapolis Stakeholders – The discussion of values and principles reflected two dominant concerns: The first was reduce the level of automobile traffic in downtown Annapolis by providing options to the automobile, including shuttles, jitneys, enhanced public transit, and bicycle and pedestrian access and safety. The second was to develop a transportation system that is in harmony with the City's scale and character.

Anne Arundel County Stakeholders – The concerns expressed by County stakeholders were driven far more by their awareness of increasing problems and challenges than by visions of a desirable transportation system. The challenges include constraints associated with the area's terrain (peninsulas and creeks), the permanent presence of through traffic and related congestion (especially on U.S. 50/U.S. 301), and, most importantly, projected increase in development, population and automobile pressure over the next 20 years in the face of limited ability to expand highway capacity.

Consideration of these factors led several stakeholders to emphasize the importance of programmatic solutions, including various forms of transportation demand management. The people interviewed emphasized the importance of comprehensive transportation planning that integrates transportation with land use. However, their comments went beyond coordinating land use, transportation, and multi-modalism to address possible constraints on development and use of pricing mechanisms to achieve systemic demand management.

## **Focus Group Meetings**

**Purpose:** To gather perspective, insights and opinions, explore attitudes in depth, and identify the major points of agreement or divergence of opinion.

**Approach:** Focus Groups involved small group (from 1 to 12 people) discussions with a neutral facilitator. To guide the discussion, each Focus Group was asked the same five questions relating to essential and desirable transportation requirements, time and proximity requirements, and issues. Focus Group meetings were held to elicit input from six groups: residents, tourism providers, downtown Annapolis office workers, County office workers, employers of shift workers, and bicyclists/pedestrians.

**Outcome:** A summary was prepared of each Focus Group meeting and is available in Appendix B.

1. **Residents** – downtown Annapolis, Forest Drive, Riva Road and MD 2 corridor. This Focus Group meeting, held June 12, 2003 at the Annapolis Department of Planning and Zoning, highlighted the following concerns:
  - High-speed traffic, traffic signal issues and lack of enforcement for speeders.
  - Annapolis is not as walkable as believed due to hidden intersections, cobblestones, sidewalk obstructions, dangerous crosswalks, etc.
  - Traffic congestion and cut-through traffic due to major events and due to seasonal summertime traffic.
  - Lack of a traffic management program, especially to regulate access to downtown for trucks/buses.
  - Parking problems, specifically lack of residential parking and the need to assign visitor parking to the NAAA Stadium and the parking garages.
  
2. **Tourism Providers** – highlighted needs of long-term (all-day and overnight) visitors to the City and County. This Focus Group meeting, held March 12, 2003 at Annapolis City Hall, highlighted the following concerns:
  - The shortage of parking and weekend congestion in downtown in general.
  - The lack of amenities for tourists at the NAAA Stadium.
  - The lack of a hub for managing buses and welcoming incoming tourists.
  - The lack of a place for buses to park. City Dock is not an option and should be further enforced, especially with the current USNA security and access restrictions.
  - Inadequate signage and other directional tools in managing visitors.
  - Inadequate shuttle system, including the frequency, timeliness, and ease of use of existing shuttle service.
  
3. **Downtown Annapolis Office Workers** – This Focus Group meeting, held March 19, 2003 at Annapolis City Hall, highlighted the following concerns:
  - Traffic congestion on major highways leading into the City (Ritchie Highway, US 50 between I-97 and MD 2 ramps) and on some City streets during the morning and evening rush hours (e.g. Rowe Boulevard).
  - Limited and Inconvenient Parking and Shuttle Options. Parking at the NAAA Stadium is not convenient because of poor shuttle service - longer headways after morning and evening rush hours, longer in-vehicle time, unpredictable service, etc.

- Lack of continuous pedestrian and bicyclist facilities and amenities.
  - Lack of business parking permit, such as allowing businesses to use some of the residential parking spaces during the day when most residents are at work.
4. Anne Arundel County Office Workers – This Focus Group meeting, held July 9, 2003 at the Anne Arundel County Heritage Office Complex, highlighted the following concerns:
- Maintain character of Annapolis. Any solution to solve traffic issues must not damage the character of the downtown area.
  - Need for coordination of business and government to solve transportation problems.
  - Lack of affordable housing near work. Upper level managers can afford to live near where they work to take advantage of specific communities or for a shortened commute time, but still drive cars for practical reasons. Lower level managers and blue-collar workers live outside of the study area and drive cars because they have to. Service level employees ride the bus.
  - Transportation and Land Use. Participants expressed the belief that transit is effective in dense urban environments where the transit stops are on every block, service is frequent, and residences and activity centers are all in the same general area.
5. Employers of Shift Workers – downtown Annapolis. This Focus Group meeting, held March 20, 2003 at Annapolis City Hall, highlighted the following concerns:
- Lack of security at garages where parking may be available for shift workers. Not safe to walk to Gotts Parking garage, West Street and St. John’s College areas.
  - Inaccurate information on space availability in parking garage. It is common to see signs to garages reading “FULL” when there are some parking spaces available.
  - On-street parking. Meters are inaccurate and on-street parking spaces are often not marked.
  - Signal timing and signage. Customers complain about the poor signage.
  - Shuttle service. Service is not frequent or reliable.
6. Bicyclists and Pedestrians – City and County. This Focus Group meeting, held on March 31, 2003 at the Anne Arundel County Heritage Office Complex, highlighted the following concerns:
- Safety. A major concern to all participants is the danger to walk/bike along some routes such as Forest Drive, King George Street over the Eastport bridge, high vehicular speed makes it difficult to share the road where there are no sidewalks, bike lanes/paths; and “road rage” towards bicyclists, especially on Forest Drive.
  - Poor sidewalk conditions. Due to disconnected sidewalks and poor maintenance (e.g. cracks in sidewalks along Duke of Gloucester Street), utility poles in the middle of sidewalks, lack of consistent signage, lack of ramps in certain areas for the disabled.
  - Lack of respect for pedestrians and bicyclists. Vehicles do not share the road with bicycles or yield to pedestrians.

- No office for bicycle/pedestrian issues either in the City or the County to illustrate its importance.

### **Visioning Workshop**

**Purpose:** To develop a shared vision of the region's future character and form of transportation in 10-20 years and identify long-range issues.

**Approach:** The Visioning Workshop was held on April 24, 2003 at the Bates Middle School in Annapolis, Maryland. The Visioning Workshop used a small group, open discussion format lead by a neutral facilitator. Each group was presented with three categories (assets, issues/problems, and vision) for which they brainstormed ideas and prioritized goals.

**Outcome:** Approximately 65 citizens attended the Visioning Workshop. Comments centered on transit, accessibility, and vision for the future:

- Attendees identified transit as the region's biggest asset but with the most problems and issues. Many citizens attended the workshop solely to protest the elimination of MTA 210 bus service.
- Traffic and congestion received the second highest number of comments (following transit) in the "issues/problems" category.
- Americans with Disability Act (ADA) and elderly issues were also frequently mentioned in the "issues/problems" category. Attendees noted that they received a letter (Sender undetermined) prior to the workshop encouraging them to attend and express concerns with ADA issues for use in the project. Some of the attendees stated that they worked in the ADA/Elderly profession, but did not work or live in the study area.
- Attendees provided many comments regarding a vision for the future that included better coordination between land use and transportation to so that people can live where they work and enjoy seamless transportation system which allows individuals to travel efficiently from one end of the County to the other.

### **Telephone and Written Surveys**

**Purpose:** To identify the transportation needs/requirements, issues, and characteristics of residents (telephone survey) and employees (written survey) in the study area.

**Approach:** Approximately 1,500 surveys (to 130 businesses) were delivered to downtown Annapolis employers in June 2003 who distributed the questionnaires to their employees. Downtown employees reside within and outside of the study area. The surveys were collected and analyzed by the Anne Arundel Community College Center for the Study of Local Issues.

The Anne Arundel Community College Center for the Study of Local Issues also surveyed approximately 1,000 study area residents by telephone in November 2003.

**Outcome:** The telephone survey returned 356 responses and the written survey returned 725 responses. The surveys highlighted public opinion and behavior in a number of important areas including:

- Resident and employee characteristics
- General travel habits
- Downtown Annapolis parking and congestion
- Transit
- Interceptor lot and shuttle use
- Walking and bicycling

The important survey results are summarized below, and the entire survey report is provided in Appendix B.

### Resident and Employee Characteristics

Survey results indicate that approximately 35% of the study area residents work in the City of Annapolis, 5% in Parole, and 10% in the remainder of the study area. The other 50% work outside of the study area and predominantly outside of Anne Arundel County. Residents who are employed primarily work in professional or management (53%), retail (24%), and clerical (11%).

Almost one-half of the downtown employees reside in Anne Arundel County (49%), with large concentrations coming from zip codes 21401 (Parole/downtown) and 21403 (SE Annapolis/Highland Beach). The vast majority of employees work for government (71%), followed by legal (7%), and retail (6%). Government employees worked for the State (41%), Anne Arundel County (16%), or the City of Annapolis (4%).

### General Travel Habits

The vast majority of the survey respondents (85-95%) indicated that their transportation choices and preferences are motivated primarily by “time or convenience”. Large majorities of residents and employees think that their travel times are “reasonable” (73% and 81%, respectively), however, the longer the commute (especially 45+ minutes), the more likely respondents are to consider their commutes too long. Only 12% of those traveling less than 30 minutes said that congestion is a large problem, compared to 30% of those traveling longer. Similarly, 25% of those traveling 30 minutes or more said that travel time is a problem, compared to only 2% of those traveling under 30 minutes.

Residents who responded to the survey travel to work by:

- Car – 93% (of which 94% have one occupant)
- Car to shuttle or transit for the remainder
- Survey results in this category did not capture any transit/walk/bike only trips

Residents who responded to the survey shop by:

- Car – 95%
- Walk – 1%
- Bus – 3%
- Bicycle – 0%
- Other – 1%

Employees coming into downtown Annapolis utilize a variety of routes, including the Naval Academy Bridge, Rowe Boulevard, West Street, and Forest Drive. The highest percentage uses Rowe Boulevard (27%). During the weekdays, employees are more likely than residents to arrive at peak times between 7:30 a.m. and 9:00 a.m., accounting for 75% of all downtown employees. The afternoon departure has a similar 1½ hour peak between 3:30 p.m. and 5:00 p.m. when over 80% of the workforce leaves.

### *Downtown Annapolis Parking and Congestion*

The survey found that the majority of employees arriving in downtown generally have no problem finding parking (52%) but a large percentage (35%) indicated that finding parking space was a large problem. Many downtown employees (68%) park at no cost, and only a modest number (13%) pay the full cost without any employer subsidy. Parking inventory information shows that slightly over 8,700 parking spaces are available in downtown Annapolis, including at the U.S. Naval Academy and on-street parking.

The survey found that those traveling during the peak arrival and departure periods were more concerned about traffic congestion, but were likely to be rewarded with ample or convenient parking. Those arriving after the morning peak were less concerned about congestion but were more likely to only find costlier and less convenient parking. Those arriving later are much more likely to use metered parking.

### *Transit*

When asked about using alternatives to driving, employees and residents indicated that increased time, poor conditions, difficulties of getting home in an emergency, and errand running were all part of a complex set of variables, which discouraged using transit or carpooling. Poor quality (e.g., construction, lighting) of the bus shelters was singled out by 62% of the residents as the most important deterrent to taking transit.

The survey concluded that many respondents preferred to improve the current drive alone commute rather than truly consider alternatives. The survey analysis indicates “in the absence of a comprehensive, flexible, and reliable system of public transportation, potential users will inevitably find it more convenient and time-efficient to continue driving their cars.” Safety is a high priority for women. Women were more likely to be users of interceptors given their demographic profile. Any approach to increasing the participation of women in alternatives to driving alone and parking close to work must focus on security elements.

### *Interceptor Lot and Shuttle*

The survey also delved into resident and employee receptiveness to using an interceptor lot and shuttle. Fifty-one percent indicated they would not use such lots. Of the employees who indicated they would be “very likely” to use an interceptor lot and shuttle, they were most likely to be:

- Government employees
- Clerical or technically skilled jobs rather than managers, professionals, and salespersons
- Users of public transportation
- Traveling over 16 miles or longer than 20 minutes

- Arriving between 7 and 8 a.m.
- Less likely to want to use their car during the day

The primary motivators to get people to use the interceptor lots and shuttle are:

- Economic incentives from the employer
- Weather protection while waiting for the shuttle
- Safety

### Walking and Bicycling

Only a small percentage of the users walk or bike to work (other than walking the final distance from their car). This user group often experiences facilities that are deficient or totally absent. While 12% of the survey responses indicated the sidewalk system was poor, 49% expressed this opinion of bicycle facilities. Over 50% rated sidewalks as fair or poor, and over 80% rated bicycle facilities similarly. Access to showers and lockers at the destination were considered to be “important or somewhat important” to over 60% of bicyclists, but only 1% presently have access to such facilities.

### **Citizens Advisory Committee (CAC)**

**Purpose:** To provide a means for the City and County to build partnerships with community members, allow additional opportunity for public involvement throughout the project, and afford representatives of active community groups to be heard in a constructive way.

**Approach:** This advisory group met at project milestones during the development of the *Annapolis Regional Transportation Vision and Master Plan*. These meetings allow members to discuss project progress and develop recommendations for consideration by the PMT. The committee members represent a diverse variety of groups and perspectives. In the interest of group facilitation and consensus building, the CAC was limited to 12 members, equally represented between City and County. A member of the Project Management Team (PMT) facilitated each CAC meeting. Group decisions were made by consensus and a variety of consensus-building techniques and activities to structure group discussion.

**Outcome:** The CAC assisted the project in several ways by:

- Advising the PMT about project issues from personal experience as well as from the constituency represented.
- Defining the critical issues of the project from the needs and desires of the constituency represented.
- Providing feedback, at key milestones of the project, regarding the project’s vision statement, content of project documents, and recommendations.
- Attending Public Information Meetings to present the results of the project and to assist in staffing the event and answering questions by the meeting attendees.
- Attending City/County Council briefings to present the results of the project and lend support to the results presented.

## ***Public Involvement***

### **Public Information Meetings**

**Purpose:** To present study findings and gather reactions from the general public regarding identified issues, vision, goals, objectives, and recommended projects, policies and programs.

**Approach:** A widely advertised public information meeting was held on May 19, 2004. The attendees received an update about the progress made on the project and its current status. It convened at Annapolis High School was organized around a small group, open discussion format. The participants were asked to comment on the work completed to date and other issues and solutions to consider.

**Outcome:** The response of the public to the work to date was generally positive and the small groups discussions yielded additional ideas to be considered while developing the Plan recommendations.

### **City and County Council Presentations**

**Purpose:** To present study findings at key milestones and obtain approval on study findings/recommendations.

**Approach:** PMT member representatives from the City and County will present study findings and the consultant will be available to answer the more detailed questions from Council members.

**Outcome:** City and County Council presentations are anticipated to be held in 2005 for approval of study recommendations and adoption of the final document.

### **Briefing to the State Commission on the Capital City**

**Purpose:** To present study findings at key milestones and obtain reactions on study findings/recommendations.

**Approach:** PMT member representatives from the City and County will present study findings and the consultant will be available to answer the more detailed questions from Commission members.

**Outcome:** The first briefing was held in June 2003. The Mayor of Annapolis and delegation members (Astle, Busch, Claggett, and others) attended the meeting and asked the PMT to submit a budget with the Annapolis Regional Transportation Vision and Master Plan, asked for the public outreach schedule, and expressed some concern with increased parking prices. Subsequent briefings will be held in later stages of the project.

## Summary of User Needs, Existing Conditions, System Gaps, and Options

The existing transportation conditions information, relevant plans and studies, and the public affairs program were used to better understand the present characteristics of the trips taken by the user groups (see Figure 2 – Planning Process Diagram, p. 9). This information was used to:

- Identify specific **needs** for each of the user groups;
- Understand the **existing conditions** of the transportation system as they relate to the users and their trip experiences;
- Identify the **gaps** or deficiencies in the existing transportation system when user needs and existing conditions are compared; and
- Develop a list of potential **options** for addressing the system gaps.

The public affairs program, combined with guidance from the Project Management Team (PMT) and Citizens Advisory Committee (CAC), resulted in a listing of transportation needs, existing conditions, gaps, and policy, program and project options for each of the nine user groups. Using public and CAC comments, the PMT conducted a thorough discussion of the needs, existing conditions, gaps, and options for each user group. A series of matrices in Appendix C record the notes from the review. Because the circumstances and user groups needs are not necessarily uniform throughout the study area, comments regarding downtown, the Parole Growth Management Area (PGMA), and outbound travelers are noted when they are unique from the entire study area.

### ***Daytime Workers***

The vast majority of this group travels by car. Parking in both Annapolis and Parole is typically not a problem for this group. However, because the people in this group tend to arrive and depart around the same time, traffic congestion can be a significant issue. In particular, West Street, Forest Drive, Riva Road, and Rowe Boulevard have some of the worst congestion in the area (see Figure 5). Route 50 can also have a significant congestion impact when heavy traffic backs up onto the local street network.

As indicated in the survey, parking in downtown Annapolis is generally not an important issue for daytime workers who generally arrive between 7:30 and 9:00 a.m. when parking spaces are plentiful. In addition, many daytime workers have monthly passes and all or a portion of the parking cost paid by their employers. For example, 68% of the daytime parkers in the Hillman and Gotts garages have monthly passes. Other all day parkers occupy an additional 13% and 6% of the Hillman and Gotts garages respectively. Of the 985 available spaces in these two downtown garages, approximately 760 are occupied all day. The survey shows that the majority (70± %) of the downtown workers are government employees.

Parking generally is much more abundant in Parole. Although not covered specifically in the survey, comments from the public and stakeholders confirm that congestion is the leading issue, and parking is generally not a problem. Congestion is a concern during morning and evening commute times as well as some other periods, such as lunch hour.

For those who walk for all or a portion of their trip, sidewalks in Annapolis are generally adequate in the downtown, but of lesser quality and consistency in the remainder of the

City. Outside of the downtown, most daytime workers park on-site. The drive/walk trip experience is primarily taken to the downtown. The walking portion of the trip is typically short after the car is parked (1-3 blocks), and the walking conditions are generally adequate. The remainder of the study area has a sidewalk system that is of inconsistent quality with frequent gaps. Accessibility for mobility challenged individuals is particularly problematic. Many facilities in the study area, for example, do not allow wheelchair access due to obstructions and/or narrow widths.

Taking transit is an option currently used only by a small percentage of this user group. Driving to an outlying lot and completing the trip via shuttle is an option used by a small percentage as well. Those using the NAAA lot have relatively short waiting times for the downtown shuttle during peak hours. However, shelter and weather protection is minimal. These shortcomings along with security were noted in the public survey as deterrents to using either transit or the shuttle. The bus and shuttle generally operate from the early morning to 7:00 p.m.

Walking in downtown is generally satisfactory, however there are areas that are difficult for mobility challenged individuals to negotiate. Walking conditions outside of the downtown vary widely from totally good to absent.

Bicycling is not a common form of transportation in the study area for this or any other user group. The survey results show that most of the public regards bicycle facilities as being in poor or fair condition. Trails offer access to limited portions of the area, and bicycle lanes are only present on portions of Hilltop Lane and Bay Ridge Road. Bicycle parking is also in limited supply, particularly secure long-term parking desired by commuters.

- **Needs:** Safe and convenient access between home and work (equally applicable among the different trip experiences). This includes adequate facilities to accommodate different trip experiences (drive, drive/walk, drive/transit/walk, walk/transit/walk, and walk/bike), including streets, sidewalks, shelters, and bike lanes. Convenient parking is important to the majority of this group, because driving is the predominant travel mode. This parking is generally available for this group. Accessibility for mobility challenged individuals is important, especially for those using transit or sidewalks. Safety is particularly important for persons using transit or public parking facilities.
- **Existing Conditions:** Because daytime workers travel during the periods of peak traffic demand in the morning and early evening, congestion on major roadways can be problematic for trip experiences involving driving and/or transit. Walking and bicycling are generally immune from these problems. Adequate parking is generally available for this user group in all portions of the study area. Daytime transit service is available along all major routes in the study area. Sidewalks and pathways generally facilitate walking in the study area. Bike lanes are provided on portions of Hilltop Lane and Bay Ridge Road and several multi-use pathways are available in the study area.
- **Gaps:** Several major routes experience congestion during peak travel times, affecting this group, which generally travels during these times of the day. The major gaps, according to survey respondents are distance from home to bus stops and the poor quality of bus shelters. Outside of the downtown, pedestrian

access can be hampered by inadequate sidewalks and sidewalk gaps (especially for mobility impaired individuals). Except for the few bike lanes and pathways noted above and low traffic volume streets in the study area, bicycle accommodation is poor.

- **Options:** these include: implementing management techniques to enhance the efficiency of the existing street system; increasing roadway or intersection capacity to relieve bottlenecks; improving transit service and user information; mixed land use to help reduce the number and length of trips; systematic improvement of pedestrian and bicycle facilities; systematic, consistent financial incentives and disincentives to modify travel behavior; and education/marketing programs to shift travel to other modes.

### ***Shift Workers***

The automobile is the preferred mode of this group. Because shift workers are arriving and leaving during off-peak driving hours, congestion is not as important an issue compared to daytime workers. However, parking in the downtown often is a major issue. As noted above, the earlier arrival of daytime workers leads to high occupancy of at least two of the major downtown parking garages before other user groups, including shift workers, arrive. This causes many shift workers to utilize metered or free on-street parking, which may or may not be close to the workplace. Parking outside of downtown has not been identified as an issue for this group.

Transit and shuttle service is not as valuable for evening shift workers because virtually all service ends at 7 p.m.

Walking or bicycling trip experiences are the same, and offer the same limitations as noted for the daytime workers. In some cases, walking or bicycling late at night is perceived to lack proper security and comfort.

- **Needs:** Safe and convenient access between home and work through the study area (equally applicable among the different trip experiences). This includes adequate facilities to accommodate different trip experiences (drive, drive/walk, drive/transit/walk, walk/transit/walk, and walk/bike), including streets, sidewalks, shelters, and bike lanes. Convenient parking is important to the majority of this group, because driving is the predominant travel mode. Accessibility for mobility challenged individuals is important, especially for those using transit or sidewalks. Safety and security are particularly important for shift workers who often finish working in the late evening.
- **Existing Conditions:** Moderate congestion on major roadways for trip experiences involving driving and/or transit, however, because this group travels during off-peak times, congestion is not as important an issue as for daytime workers. As indicated above, much of the long-term parking in the downtown is taken by daytime workers, and therefore, finding parking is more challenging for shift workers. Parking is not a particular problem for this group outside of the downtown. Transit service is available along all major routes in the study area during the day, but evening service typically ends by 7 p.m. The conditions for pedestrian and bicycling facilities affect this group in a similar way as daytime workers.

- **Gaps:** Parking availability in downtown lots and garages is limited because daytime workers occupy many of them. There is insufficient access to transit because of distances between home and bus stops along with the poor quality of bus shelters. Outside of the downtown, pedestrian access can be hampered by inadequate sidewalks and sidewalk gaps (especially for mobility impaired individuals). Except for the few bike lanes and pathways noted above and low traffic volume streets in the study area, bicycle accommodation is poor.
- **Options:** Improve transit service or some type of on-call transportation service to transport late night employees safely to their cars or home. Provide more parking in downtown that would be available when workers arrive as well as making it easier with “real time” parking signs to direct workers to available parking.

### ***Outbound Commuters***

Like the previous two groups, most outbound commuters drive the entire distance to work. For those who take commuter transit, the trip almost universally begins with a drive to a park-and-ride facility.

Park and ride transit facilities are well used, and in particular, the Truman lot is currently over its 466-space capacity. Late arrivals run the risk of not being able to find a place to park in order to take the bus.

Walking or bicycling trip experiences are the same, and offer the same drawbacks, as noted for the daytime workers.

- **Needs:** Safe and convenient access between home and work through the study area (equally applicable among the different trip experience). Convenient parking is important to the majority of this group, because driving is the predominant travel mode, even if it is just to a park-and-ride lot to catch transit. It is critical for park-and-ride parking to be consistently available. Accessibility for mobility challenged individuals is important, especially for those using transit or sidewalks. Safety and security are particularly important for outbound commuters who use the park-and-ride lots early in the morning and later in the evening.
- **Existing Conditions:** Congestion on major roadways for trip experiences involving driving and/or transit; inadequate parking in some of the study area park and ride lots; and limited pedestrian and bicycle facilities to reach park-and-ride lots.
- **Gaps:** Other than congestion for motorists along several major routes, the gaps within the study area generally reflect limited supply of park-and-ride spaces; limited facilities to promote safe and convenient pedestrian and bicycle access to the park and ride lots; and inadequate bicycle parking facilities.
- **Options:** Implementing management techniques to enhance the efficiency of the existing street system; additional park-and-ride capacity; urban design and

mixed land use techniques to reduce the number and length of automobile trips; and systematic improvement of pedestrian and bicycle facilities.

### ***Short-term Patrons***

Again, most short-term patrons drive. Although this does not necessarily reflect all short-term trips, shoppers use a car 95% of the time, transit (3%) and walking (1%) account for most of the remainder. Convenient parking is very important for this group. The shorter the visit, the more important close parking becomes. During the day, short-term parking is typically in limited supply in downtown. The survey results for residents visiting downtown indicated that 70% of the respondents said access into downtown was good or fair, but 85% indicated that parking availability was fair or poor (63%). Short-term parking is typically available in Parole and the remainder of the study area.

This group does not often use transit. Time and convenience are common reasons for not using the bus.

Walking or bicycling trip experiences are the same, and offer the same drawbacks, as noted for the daytime workers.

- ***Needs:*** Safe and convenient access between home/work and destination through the study area, (equally applicable among the different trip experiences). Short-term parking is needed close to the destination.
- ***Existing Conditions:*** Moderate congestion on major roadways for trip experiences involving driving and/or transit; often inadequate short-term parking in downtown Annapolis; daytime transit service along all major routes in the study area without evening service; and pedestrian and bicycle facilities of varying quality throughout the study area.
- ***Gaps:*** The gaps generally reflect limited parking in downtown; poor access to transit because of distances to stops and/or inadequate sidewalks; less convenience and more time needed to use transit; lack of transit during the evening hours; poor walking conditions outside of downtown, and inadequate bicycle facilities.
- ***Options:*** More short-term parking in downtown that would be available during the day and early evening as well as facilities and services, which are publicized and marketed to encourage more transit use, walking, and bicycling.

### ***Long-term Patrons***

The trip experience for this group is similar to short-term patrons. The major difference for long-term patrons who drive downtown is the parking issue, which is more acute because short-term metered parking is not a viable option because of the length of the visit (>3 hours).

This group does not often use transit. Time and convenience are common reasons for not using the bus.

Walking or bicycling trip experiences are the same, and offer the same drawbacks, as noted for the daytime workers.

- **Needs:** Safe and convenient access between home and destination through the study area (equally applicable among the different trip experiences) and daytime parking that is reasonably close to the destination.
- **Existing Conditions:** Moderate congestion on major roadways for trip experiences involving driving and/or transit; often inadequate (or difficult to find) daytime parking in downtown Annapolis; daytime transit service along all major routes in the study area without evening service; and pedestrian and bicycle facilities of varying quality throughout the study area.
- **Gaps:** The gaps generally reflect limited (or difficult to find) parking in downtown, poor access to transit because of distances to stops and/or inadequate sidewalks; less convenience and more time needed to use transit; lack of transit during the evening hours; poor walking conditions outside of downtown, and inadequate bicycle facilities.
- **Options:** Provide more and/or easier to find parking in or near downtown that would be available during the day and early evening as well as facilities and services, which are publicized and marketed to encourage more transit use, walking, and bicycling.

### ***Day Tripper Tourists***

Approximately 2.6 million people visit the area for day visits during the year. The primary modes are automobile and tour bus.

Walking or bicycling trip experiences are the same, and offer the same drawbacks, as noted for the daytime workers. However, because most of the visitors are in downtown where the condition and consistency of sidewalk facilities is perhaps the highest, walking is the typical travel mode, once the car is parked.

- **Needs:** Safe and convenient access and daytime parking. In addition, visitors need clear signage and information to guide them preferably to a remote lot with shuttle or transit service to their final destination (typically downtown). Once parked, day tripper tourists would benefit from improved directional signs throughout downtown.
- **Existing Conditions:** Some signage and information is available to guide visitors into the downtown area. Shuttle service is available to take them downtown. Other day tripper tourists typically arrive by charter bus and are dropped off in downtown or at the NAAA lot. Automobile access is allowed downtown, but parking availability can be minimal.
- **Gaps:** The gaps generally reflect inadequate signage and other information to guide visitors, especially regarding the locations of parking areas, limited pedestrian-scale signs, and markers to guide walkers.

- **Options:** Provide improved directional signs and information to guide visitors to parking locations and encourage parking in remote lots and taking the shuttle or transit into downtown.

### ***Overnight Visitors***

This group shares many of the same traits as day tripper tourists, except that they are more likely to drive to the hotel or bed and breakfast where they will be spending the night.

- **Needs:** The needs are similar to day tripper tourists, except that parking is usually provided with the lodging. Visitors need clear signage and information to guide them as they travel by car and on foot. Once parked, overnight visitors would benefit from improved directional signs throughout downtown.
- **Existing Conditions:** Some signage and information is available to guide visitors into the downtown area. Other than the automobile, overnight visitors typically come by charter bus and are dropped off in downtown or the NAAA lot. Automobile access is allowed downtown, and parking is typically available at the hotel. Many hotels in the Parole and Riva Road area provide shuttle transportation for their patrons to and from downtown.
- **Gaps:** The gaps generally reflect inadequate signage and other information to guide visitors, to parking, historic sites, and other destinations.
- **Options:** Provide improved directional signs and information to guide visitors to parking and sights and encourage parking in remote lots and taking the shuttle or transit into downtown.

### ***Residents***

This category relates to the impact of other transportation system users on the livability of residential neighborhoods in the study area. The primary impacts cited during focus group discussions were neighborhood cut through traffic and on-street parking by visitors or employees.

- **Needs:** The primary need is to limit impacts from cut through traffic on local streets along with minimizing neighborhood on-street parking being used by employees and visitors.
- **Existing Conditions:** Existing conditions include residents affected by cut through traffic anywhere in the study area and on-street parking by employees and visitors that primarily occurs in the downtown area.
- **Gaps:** The gaps generally reflect the limited supply of parking in downtown Annapolis, and cut through traffic that occurs on some streets.
- **Options:** Amending the parking management program to encourage user groups to park in desired locations, such as remote lots or downtown parking

garages, and utilizing traffic calming and similar methods to discourage neighborhood cut through traffic.

### ***Deliveries***

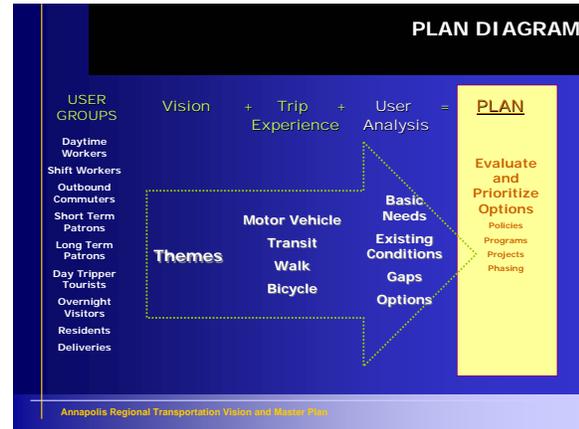
Space is generally available outside of the street right-of-way for deliveries. The major exception is downtown Annapolis where many deliveries occur within the street right-of-way.

- ***Needs:*** The primary need is to be able to deliver goods from a relatively close location to the destination.
- ***Existing Conditions:*** Loading areas are typically available outside of the street right-of-way except for downtown where most of this activity occurs in the right-of-way. Downtown deliveries, which occur within the street right-of-way, are before 10 a.m, however, deliveries can occur during other times of the day.
- ***Gaps:*** Deliveries sometimes can cause congestion.
- ***Options:*** Perhaps establish a delivery zone strategy if the current policy of having deliveries occur before 10 a.m. does not work.

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# EVALUATE AND PRIORITIZE OPTIONS

The final stage of the planning process involved an evaluation of various options to best fulfill the Vision and Themes. To successfully support them, the Plan recommendations must focus on reducing automobile use, while providing enhanced mobility with a wider array of practical travel alternatives. It is clear that continued reliance upon the automobile (over 90% of all trips) to meet the area's mobility needs will ultimately fail due to a variety of factors, including limited ability to expand street system capacity, insufficient public funding to expand and maintain the system, rising fuel prices, declining air quality, and an aging population that will have an increasing percentage of non-drivers. Perhaps most important, the ever-increasing traffic volumes and congestion diminish the quality of life for residents and visitors alike.



The PMT considered a wide variety of ideas to improve the transportation system to better serve all user groups by using the Vision and Themes as a policy basis for choosing the policy, program, and project recommendations to offer a wide variety of transportation choices for all user groups.

## RECOMMENDED POLICIES, PROGRAMS, AND PROJECTS

### Development Process

The Project Management Team (PMT) developed the recommendations based upon the fundamental considerations outlined in the Planning Process diagram (Figure 2).

The following recommendations were developed by the PMT and consulting team in six steps:

- **Adopted plans and completed studies.** In particular, planned policies, programs, and projects were reviewed to gain a complete picture of what was already being or going to be done primarily by government agencies.
- **Public affairs information.** The comments and recommendations from the public surveys and meetings along with the stakeholder interviews were considered.
- **Plan Vision and Themes.** The Vision and Themes were created based upon the input received from the public affairs program.
- **User needs, existing conditions, system gaps, and potential options.** As noted in the Planning Process diagram, the situation for each of the nine user groups was discussed by the PMT yielding a list of needs, gaps, existing conditions, and system gaps for each group (Appendix C).
- **Evaluation of options.** The PMT evaluated the policies, programs, and projects for their level of consistency with the Vision and Themes.

- **Develop the final recommendations.** The preliminary options were assessed further to determine the degree to which they would support the Vision and Themes, complement currently planned actions, and provide the greatest transportation benefits for the study area.

The Plan recommendations, which begin on page 76, are intended to be fully consistent with the Vision and Themes by:

- Endorsing the planned actions and assuming that the planned actions are given, which will ultimately be implemented (if they are not in the process already).
- Complementing the planned actions by broadening the transportation focus with the addition of ideas that are designed to change travel behaviors.
- Emphasizing a multi-modal approach to provide all users with a wider range of practical transportation options.
- Providing a wide array of recommendations, which are mutually supportive and require simultaneous implementation to maximize the effectiveness of the individual recommendations. There are no “silver bullets” that will individually resolve the region’s transportation issues, and a variety of actions are necessary for successfully addressing them.

#### **VISION STATEMENT**

To provide **mobility** that is safe and convenient throughout the Annapolis area for all transportation system users, including area residents, businesses, institutions, maritime community, and visitors. Provision of viable travel options to the automobile will enhance mobility for all. While mobility is the focus of this plan, the second key element of the vision is to maintain a balance between mobility and the **quality of life** offered in the Annapolis area.

#### **Specific Mobility Themes**

- Maximize the connectivity and ease of access for user groups via all modes of travel (e.g., pedestrian, bicycle, auto, transit, and water taxi) between activity centers.
- Improve the operational efficiency of transportation circulation patterns within activity centers.
- Realize maximum effectiveness of all existing and future public and private parking facilities for all user groups.

#### **General Mobility Themes**

- Provide appropriate access and mobility for user groups at appropriate times.
- Increase the overall safety, comfort, and convenience of transportation facilities for all user groups.
- Provide recommended actions with realistic opportunities for implementation.

#### **Quality of Life Themes**

- Protect and enhance the cultural and historic integrity of the Annapolis area.
- Reflect and integrate unique community geographic and seasonal conditions.
- Improve air quality through integrated land use and transportation decisions.
- Minimize impacts to the natural environment (e.g., woodlands, wetlands, and waterways).
- Recognize and advance opportunities for intergovernmental cooperation through complementary public policies, capital projects, and management programs.
- Maintain an appropriate sense of scale for Annapolis area neighborhoods.
- Promote economic vitality and community development.

## Types of Recommended Actions

There are three basic types of recommendations:

- **Policy** recommendations pertain to ideas that will ultimately need to be adopted as government plan policy or as ordinance requirements or design guidelines.
- **Program** recommendations are suggestions that would require actions on the part of government or other parties to implement.
- **Project** recommendations are ideas that involve construction of physical improvements.

## Recommended Timing

Three timing categories apply to the policy, program, and project recommendations. All of the recommendations are considered worthy of implementation as soon as possible. However, budgetary constraints will require phasing these recommendations over time. The earlier recommendations, especially the immediate actions, are considered to be the most likely to receive funding in the short term because they are currently planned and/or because of their relatively low cost. The three timing categories are:

1. **Immediate Actions** to be implemented within the next 1-3 years. The number of immediate actions is limited because of the relatively short time available to implement them. Also, capital improvement projects, which are not currently in an approved capital improvement plan (CIP), do not appear as immediate actions because the funding process necessitates a lead time that will take implementation beyond three years.
2. **Short-term Actions** to be implemented within the next 3-10 years.
3. **Long-term Actions** to be implemented within the next 10-20 years.

While some recommended actions have a discrete timeframe, such as a street improvement project, others will span longer periods because they are intended to be on-going programs, or they are expected to take a period of years to come to be fully implemented.

## Recommendation Categories

Recommendations are grouped into four categories based upon the Vision and Themes. Although many of the recommendations relate to more than one theme category, they are only placed under the most relevant category. The first three correspond to the Specific Mobility Themes, and the fourth relates to the General Mobility Themes.

- I. **Maximize connectivity between activity centers.**
- II. **Improve circulation patterns within activity centers.**
- III. **Maximize effectiveness of parking facilities.**
- IV. **Improve mobility, overall safety, comfort, and convenience for all user groups.**

To create a complete picture and full context for the Plan recommendations, relevant planned actions (policies, programs, and projects) are first described under each topic categories. The planned actions are considered as “givens” that either will be or have

begun to be implemented. It is important to note that not all planned actions are funded, and the timing for implementation is not always been determined. They are followed by recommendations of this Plan, which are intended to further support them. Summary tables are used to list the planned actions and the additional recommended actions, whether they are a policy, program and/or project, their timing (immediate action, short term, or long term), and the agencies to be involved in implementation.

Perhaps the most important aspect of the recommendations is the strong interrelationships between many of them. For example, because all transit trips begin and end by walking, pedestrian and transit improvements are almost always mutually supportive. In fact, a successful transit system relies heavily on safe and convenient pedestrian access. Several recommendations under the fourth category relate to changing travel behaviors to be less auto-dependent. However, to succeed, facility improvements in the preceding three categories must be made to provide realistic options for people to use.

## **EVALUATION**

The recommended actions are first evaluated according to the general level of user group benefit. This is followed by an analysis of the relative consistency of the recommendations with the Vision and Themes. Finally, a more detailed description of user group benefits is provided for each of the recommendation categories.

## **I. MAXIMIZE CONNECTIVITY BETWEEN ACTIVITY CENTERS**

### **I. A. Introduction**

As described earlier, a significant transportation issue is the difficulty residents and visitors often experience when traveling on major corridors between activity centers, such as the Historic District/City Dock, Eastport, and Inner-West Street in downtown Annapolis and, in Parole, the Annapolis Mall—AA Medical Center—Jennifer Road complex, General's Highway retail and office development Harbor Center and Festival at Riva shopping and entertainment centers. The delays present during peak travel times have been mentioned by the public during the public affairs activities. This frustration is confirmed by the low Level of Service (LOS) documented on many major arterial and collector streets during the evening peak.

In addition, new development in the region, plus traffic in the Washington/Baltimore area, will mean a continuing decline in mobility if nothing is done. Current and planned efforts of the State, City, and County have focused on street improvements and transit service expansion. These planned actions are listed below in Section I. B. They represent the primary efforts by the local and state agencies to address the congestion problems facing the area.

The planned actions are appropriate means for addressing the issue of connectivity. The recommended actions in Section I. C. are designed to complement the planned actions by generally focusing on increasing the effectiveness and efficiency of the existing facilities and services rather than more facilities or expansions thereof.

### **I. B. Planned Actions**

The major transportation system improvements projects are summarized in Table 1 on pp. II 24-28. The following additional planned actions are noted here because of their relevance to enhancing connectivity between centers.

#### ***New Annapolis Transit Route - College Parkway***

Annapolis Transit recently began service as proposed in the *City of Annapolis and Anne Arundel County Transit Development Plan*. The route provides service between downtown Annapolis and Anne Arundel Community College from 6 a.m. to 10 p.m. with 60-minute headways.

*Estimated cost: Approximately \$101,000 annually (combined with Edgewater-Mayo).*

#### ***New Annapolis Transit Route - Edgewater-Mayo***

Annapolis Transit recently began service as proposed in the *City of Annapolis and Anne Arundel County Transit Development Plan*. The route provides service between downtown Annapolis and Edgewater from 6 a.m. to 7 p.m. with 60-minute headways along West Street, Chinquapin Round Road, Aris T. Allen Parkway, and Solomons Island Road.

*Estimated cost: Approximately \$101,000 annually (combined with College Parkway).*

### ***Pedestrian and Bicycle (Tier 1) Improvement Projects – Anne Arundel County***

In the *Anne Arundel County Pedestrian and Bicycle Master Plan*, new facilities are proposed improvements for:

#### *Pedestrian*

- *West Street* between Solomons Island Road and Riva Road.
- *Various intersections and corridors* along Generals Highway, Defense Highway, West Street, and Bestgate Road.

#### *Bicycle*

- *Northern Loop* from Defense Highway along Housley Road to Generals Highway, then along Bestgate Road and Ridgely Avenue to Taylor Avenue.
- *Riva Road* from Aris T. Allen to West Street.
- *King George Street* from Taylor Avenue to College Avenue.
- *Forest Drive/Chinquapin Round Road/Bay Ridge Road/Arundel on the Bay Road* from Solomons Island Road and West Street to Arundel on the Bay.
- *Riva Road* from West Street to Annapolis S.H.S.
- *Parole Area* from Solomons Island Road along West Street and Generals Highway to Bestgate Road, and from West Street along Defense Highway to Housley Road.

### ***Pedestrian and Bicycle Improvement Projects – City of Annapolis***

The City plans the following pedestrian and/or bike improvements:

- *Forest Drive Pedestrian and Transit Facilities* – Installation of sidewalks, provision of bus shelters, pedestrian crosswalks and lighting, at appropriate locations, from Solomons Island Road to Chinquapin Road (1.0 mile).
- *Taylor Avenue* – Bike Lanes and sidewalks from Annapolis Street to Westgate Circle (1.0 mile).
- *Edgewood Road* – Sidewalks and bike paths from Bay Ridge Avenue to Bembe Beach Road (2.2 miles).
- *Rowe Boulevard (MD 70)* – Bike lanes, bicycle compatible lanes, and sidewalks from Route 50 to Calvert Street (2.0 miles), depending on available space.
- *The Poplar Avenue Trail Extension* – Construct recreational trails from the Parole area and the Annapolis Mall to the City's historic district to improve safety of cyclists and pedestrians. Phase 1 of the Poplar Avenue Trail, from Taylor Avenue to Windell Avenue, is already completed. Additional phases of the Poplar Avenue Trail include:
  - *Phase 2* – An eight-foot-wide grade-separated trail running from Windell Avenue to Admiral Drive (0.5 mile).
  - *Phase 3* – A designated bike lane along Admiral Drive to Jenifer Road (1.0 mile) and some sidewalk links where space is available.
- Team Ped is a City of Annapolis advisory group that will be developing additional recommendations to improve walking conditions in the City.

## **I. C. Recommendations**

The public affairs activities highlighted traffic congestion as a primary issue for area residents and employees. As noted above, the State, County, and City have a number of planned or funded transportation projects to help address this issue. The recommended actions, which follow, are designed to complement the physical improvements listed above by either reducing the traffic demands on the major transportation system by improving system efficiency. The recommendations in this package are mutually supportive, and they will be most effective if implemented concurrently. However, it is not required that they be implemented together or in a particular sequence to produce positive benefits. A summary table of the recommendations is on page 86.

### ***I. C. (1) Coordinate Traffic Signals***

#### **Purpose**

To improve the coordination of traffic signals in the study area to maximize the efficiency and reduce driver delay.

#### **Description**

Four agencies – the County, City, State, and the U.S. Naval Academy – share jurisdiction over traffic signals in the study area. Although there is some coordination among them regarding traffic operations, a more closely coordinated effort would improve the performance and capacity of the street system. Because much of the study area is fully developed, widening streets is very difficult and expensive – not to mention disruptive and harmful to adjacent properties and neighborhoods. Although the degree of potential congestion relief is modest, it represents one of the lowest cost techniques available to extract maximum performance from the existing facilities.

Representatives from the four agencies currently meet on a regular basis to address congestion mitigation related to the construction projects, which have begun or are slated to occur over the next several years. It is recommended that this group continue to meet to discuss and implement traffic signal coordination modifications, which will enhance street capacity. This would further support a City proposal to develop a coordinated traffic control system for all of City traffic signals (22 total) to optimize traffic flows by real time cycle adjustment as detected by a monitoring system.

Coordinating traffic signals can increase the traffic throughput of arterials in the Annapolis area. Incorporating intelligent transportation system (ITS) technologies and strategies to enhance traffic signal system operation will improve the level of service of the transportation system. IT is a broad term, which applies to a wide range of technologies designed to obtain higher performance and efficiency from transportation facilities and services. In this recommendation, ITS focuses on a coordinated, systematic approach to increase the efficiency of traffic flow. ITS technologies have proven to be successful in reducing congestion, increasing safety, reducing fuel consumption, and improving air quality.

*Type: Program*

*Timing: Immediate action and on-going as needed*

*Agency: City of Annapolis, Anne Arundel County, MDOT, and USNA staff should meet on an as-needed basis to determine how to create greater efficiencies from the existing signal system and implementing operating changes as appropriate.*

*Estimated cost: Traffic signal coordination and ITS systems - \$250,000 per year for equipment upgrades to allow signal coordination, equipment maintenance, and management by agency personnel.*

## **I. C. (2) Comprehensive Traffic Studies**

### **Purpose**

To require new development applications to include a comprehensive traffic analysis of the potential traffic system impacts extending beyond the immediate vicinity of the development.

### **Description**

The City and County typically require traffic studies as part of any significant new development application. However, these studies are typically focused on traffic conditions and impacts immediately surrounding the property to be developed. Given the growing traffic and congestion issues faced in the study area, traffic studies for new development should take a broader look at the potential impacts throughout the transportation system. The City and County councils should amend their respective (ordinances) to expand the scope of the traffic study requirements to:

- Consider cumulative impacts of existing and proposed development in the study area.
- Include long-term impact (20-year) of the development in the context of the projected traffic environment.
- Consider circulation and safety needs for pedestrians, bicyclists, and transit in addition to motor vehicles.
- Extend the analysis coverage of the street system until the additional traffic caused by the development during the p.m. peak hour will be less than 5% of the current traffic volume. An alternative would be to use the County's APF requirements in the subdivision code. The important point is to fully analyze the potential traffic impacts of new development.

These requirements could be calibrated to exclude small projects with negligible impacts.

*Type: Agency policy to require new development to provide more thorough traffic impact studies and program to review these studies and identify appropriate mitigation for unacceptable traffic impacts.*

*Timing: Immediate action to institute this requirement for new development followed by on-going implementation.*

*Agency: City of Annapolis, Anne Arundel County, and MDOT*

*Estimated cost: This would be a cost for applicants to prepare the additional traffic data and perhaps some additional agency staff time to review.*

### ***I. C. (3) Forest Drive – Neighborhood Circulation Opportunities***

#### **Purpose**

To reduce traffic congestion by providing an alternative(s) to Forest Drive for local neighborhood vehicle, pedestrian, and bicycle circulation.

#### **Description**

Forest Drive is identified as having significant congestion problems during peak travel periods. Through traffic in and out of the peninsula to Aris T. Allen Boulevard is a major contributor to the traffic volumes on this street. The planned additional lanes between Chinquapin Round Road and Hilltop Lane will help ease this congestion. Further increases in traffic volume and the need for more turning movements at intersections are caused by the adjacent collector and local street system, which offers few interconnected routes that parallel Forest Drive, forcing traffic onto Forest Drive at key intersections. As a result, any trip, no matter how short, typically requires going to Forest Drive, turning onto the street and turning off again. This reliance on Forest Drive for local circulation causes additional automobile trips on this street, thereby increasing congestion.

A comprehensive evaluation should be conducted to identify opportunities for providing local connections that would alleviate the need to use Forest Drive for local trips. This is not necessarily intended to establish a continuous parallel or alternate route for Forest Drive, but a program to look for ways to connect neighborhoods and reduce traffic on Forest Drive. Neighborhood connections for pedestrians and bicyclists should also be considered and evaluated in addition to vehicular routes. Improvements to Forest Drive for all modes of travel should also be evaluated with this study. The study should include the following elements:

- Existing conditions analysis of the street system including neighborhood access/circulation, traffic analysis, pedestrian and bicycle facilities, and transit routes and stops.
- Identification of opportunities/constraints using the analysis and public open house and agency input.
- Recommended neighborhood connections to reduce traffic impact on Forest including local street connections, pedestrian/bike circulation, and improved access to transit, more efficient transit routes, and improved emergency access.
- Cost estimates and phasing plan for any recommended improvements.

*Type: Project*

*Timing: Short-term*

*Agency: City of Annapolis and Anne Arundel County staff would conduct an evaluation of possible local circulation opportunities for all modes, which would alleviate traffic impacts on Forest Drive and make local trips safer and more efficient.*

*Estimated cost: \$50,000*

## ***I. C. (4) Transportation Demand Modeling***

### **Purpose**

To continue transportation demand modeling and refinement work to better understand the regional transportation system operation.

### **Description**

Anne Arundel County, in coordination with other agencies, will be developing a transportation demand model. This model should be used to evaluate long-term (20 year) growth trends and prioritize transportation policies, programs, and projects to provide a better understanding about present and future system operations. The travel demand model can be used to evaluate transportation impacts of land use decisions and roadway network improvements. Development proposals should be consistent with land use and growth projected in the model and need to be re-evaluated if inconsistent. The model needs to be regularly updated for refinements and revisions to land use changes, growth, and transportation system projects. This should be coordinated with the County's development of a model to cover the Annapolis Neck, Parole, Annapolis, and Broadneck.

*Type: Program*

*Timing: Immediate action and on-going*

*Agency: Anne Arundel County and City of Annapolis staff to work with other agencies to update the model to anticipate future transportation needs.*

*Estimated cost: County and/or City staff time.*

## ***I. C. (5) Priority Transit Treatment***

### **Purpose**

To improve transit efficiency and service along major streets.

### **Description**

Transit signal priority (TSP) uses a combination of vehicle and roadside technology to provide preference or priority to TSP equipped vehicles, in this case buses, as they move through signalized intersections. When applied appropriately, TSP systems can improve schedule adherence, improve transit efficiency, and increase road network efficiency and operation. The goal of TSP is to make minor adjustments in the traffic signal timing, providing minimal delay to transit vehicles passing through signalized intersections while minimizing additional delay to competing movements and modes.

There are several possible signal treatments possible to provide priority to the transit vehicles. The most promising methods include:

- **Early green** (red truncation) so the bus can receive an earlier green signal.
- **Green extension** so an approaching bus can hold the green light to allow it to pass.
- **Actuated transit phase** to give the bus a green light before the other traffic. This would work along with special bus lanes at key intersections as noted below.

Special treatments at the intersections can be designed to accommodate buses and give them priority in combination with transit signal priority. For example, right turn lanes can

be used as a bus lane (allowing right turning traffic) if buses are given either a queue jump (early green) at signalized intersections or a receiving traffic lane on the other side of the intersection. This can be a bus only lane with mixed vehicle use by allowing right turning vehicles to use this lane.

A pilot project is recommended for West Street because it could be used as an opportunity to enhance transit connectivity and convenience between downtown and Parole as well as aiding the efficiency of the downtown circulator routes.

Early green and green extensions are recommended because they are generally easier to implement (assuming it is coordinated with signal coordination project noted above). The City and County (including AT) should work closely with MDOT to identify key intersections that would yield the most benefit for transit operations.

*Type: Program to identify transportation corridors and specific improvements that would support transit priority treatment followed by projects to make specific facility improvements.*

*Timing: Short- and long-term*

*Agency: City of Annapolis, Anne Arundel County, and MDOT transit and transportation staff should first identify suitable routes for transit priority treatment along with a pilot project to implement.*

*Estimated Cost: Variable depending upon specific design treatment.*

### ***I. C. (6) Transit Center Feasibility Study and Development***

#### **Purpose**

To identify and ultimately develop a transit hub to enhance transit efficiency for the various transit providers and the patrons.

#### **Description**

A transit center has been proposed in the Parole area for some time. The 1994 *Parole Urban Design Concept Plan* as well as subsequent planning efforts considered developing such a facility in the Parole area. It could potentially serve as a major transit hub for Annapolis Transit (AT), Maryland Transit Administration (MTA), commercial carriers (Greyhound and Trailways), and tour buses. AT and MTA have expressed an interest in establishing such a center as described in the Parole Urban Design Concept Plan of 1994. Alternative design concepts are also being considered.

A feasibility study is needed to determine whether and how such a multi-purpose center could be constructed, operated, and financed. A partial list of the transit-related issues to be addressed includes:

- All-day parking demand for outbound commuters (primarily MTA riders) and the ability of a Parole transit center/mixed-use site to accommodate it; and
- Moving the outbound commuter parking from the Truman Lot or retaining it and providing additional outbound commuter parking in Parole Center;
- Ability to successfully accommodate a multi-modal center as part of a mixed-use retail, office, and residential development;
- Access and potential delays for buses and other vehicles in and around the center;
- The potential for a visitor center and accommodation of tour buses;

- Alternative sites for all or some of these functions if the Parole Center site cannot accommodate them all.

A feasible visitor center location, to either substitute for or supplement a visitor center in Parole could be the NAAA lot or the adjacent State of Maryland property near the Farragut/Rowe intersection. This is discussed in the parking management section.

*Type: Program and project*

*Timing: Short- and long-term*

*Agency: City of Annapolis, Anne Arundel County, and MDOT*

*Estimated cost: Not determined.*

### ***I. C. (7) Realign Chinquapin Round Road and Admiral Drive***

#### **Purpose**

To incorporate safe and convenient pedestrian and bicycle routes through this intersection in addition to automobiles.

#### **Description**

These two major north-south routes do not align where they intersect with West Street. Aligning these streets would improve traffic flow on West Street by eliminating one intersection. As noted in the Planned Actions, the *Outer West Street – Chinquapin Round Road Corridor Land Use Analysis* suggests modifying the street system so that Admiral Drive would extend south past West Street to connect to Virginia Avenue. This would simplify turning movements related to Admiral Drive and Chinquapin Round Road and enhance pedestrian and bicycle access across West Street in this location.

While this would provide an important improvement for automobiles and buses on West Street, this proposed street realignment project should be further enhanced to improve east-west pedestrian and bicycle access along West Street and north-south access along Admiral Drive and Chinquapin Round Road. North-south pedestrian and bicycle travel on the West Street corridor is difficult due to traffic volumes, poor facilities, and cross streets that are not aligned. Admiral Drive is identified in the Anne Arundel County (*Pedestrian and Bicycle Master Plan*) and the Annapolis (*Take a Step Map*) as a pedestrian and bicycle route. Chinquapin Round Road could become a logical southern extension of this route.

*Type: Program and project*

*Timing: Short- and long-term*

*Agency: City of Annapolis, Anne Arundel County, and MDOT*

*Estimated cost: Minimal if designed as part of the project.*

### ***I. C. (8) Bicycle Route Map***

#### **Purpose**

To take full advantage of the existing street and pathway network to inform bicyclists of the location and condition of the available routes in the study area.

#### **Description**

With the short travel distances and moderate terrain in the study area, bicycling could become a very practical and convenient mode for local trips. The purpose of this project

and the following recommendation (I. C. (9)) is to bring bicycling into the mainstream as an option for many trips and user groups and to diffuse the use of bikes throughout the city, if not the entire study area. To integrate bicycling into the transportation system and not relegate this mode to separate pathways, the City and County should develop a bicycle route map for the study area super-imposed on the existing street system.

Various examples exist around the country for presenting bicycle information. The current "Take A-Step" map is a helpful multi-purpose (walking, transit and bicycling) map, but it does not have sufficient detail to help bicyclists identify useful routes, which are alternatives to the busy major streets. A good bicycle route map should illustrate the following information on a street base map:

- Color-coded streets for bicycle suitability and safety. Typical map colored route designations include:
  - Multi-use paths,
  - Bike lanes,
  - Low traffic through streets,
  - Moderate traffic through streets,
  - High traffic through streets, and
  - Caution areas, such as difficult intersections.
- Larger map insets for important areas (e.g., downtown Annapolis, Parole, difficult intersections, bridge crossings, etc.).
- Important destinations, such as commercial centers, transit stops, schools, and parks.
- Visitor information, (such as visitor booths, public rest rooms, and bike shops).
- Information and diagrams pertaining to safe and legal bicycle operation.

This type of map would provide a useful guide for bicyclists to discover suitable routes, which are consistent with their abilities and preferences. Although residents are familiar with the area, their knowledge about how to travel outside of their immediate neighborhoods is typically limited to the streets on which they drive. So when considering bicycling, the idea is often rejected because the "car route" is not deemed to be suitable. Having a map with route information will allow City residents and visitors to take maximum advantage of existing on-street and trail opportunities.

*Type: Project to develop a route system and print the map.*

*Timing: Short- and long-term*

*Agency: City of Annapolis and Anne Arundel County staff in coordination with MDOT.*

*Estimated cost: City and County staff time and \$5,000 to \$20,000 for printing depending upon the number of maps and the medium used (regular paper or water/tear-resistant).*

### ***I. C. (9) Bicycle Network Plan for the Study Area***

#### **Purpose**

To develop a plan and priorities for filling gaps in the existing bicycle network of streets and pathways.

## Description

The study area has several good bicycle facilities including a number of trails and two streets with bicycle lanes. However, the study area has relatively low bicycle ridership because these facilities are not well integrated, leaving many important destinations in the study area without safe and convenient access.

From the planning and policy perspective, the Anne Arundel County *Pedestrian and Bicycle Master Plan* (March 2003) and the Maryland Department of Transportation *20-Year Bicycle and Pedestrian Access Master Plan* provide the first steps toward creating a good bicycling environment. To date, multi-use trails have been the primary type of bicycle facility provided. The County and State plans recognize that although a trail system will do much to encourage bicycling, much more must be done to make bicycling an important transportation mode.

The Anne Arundel County *Pedestrian and Bicycle Master Plan* makes the following key pedestrian and bicycle recommendations:

1. *Build for success – begin construction of key on-road bicycle and pedestrian projects throughout the County.*
2. *Build on the success of the trails program in Anne Arundel County – increase access to off-road trails.*
3. *Integrate bicycling and walking as a standard part of each new development and transportation project.*
4. *Establish new sources of funding for pedestrian and bicycle improvements.*
5. *Provide increased opportunities for children and adults to become more educated on safe riding and walking behaviors.*
6. *Create an organizational structure within the County to implement bicycle and pedestrian programs and projects.*

In addition, the Plan includes a map showing the “prioritized bicycle route network” of Tier 1 and 2 recommended improvements.

The Anne Arundel County *Pedestrian and Bike Master Plan* represents a good start, but this Plan recommends the following additions:

- Add routes to complete a useful bicycle and pedestrian network for residents and visitors. The County system is naturally developed from a County-wide perspective, and additional bicycle routes should be provided to supplement the proposed County system. A bicycle route map, which is described above, will provide an important secondary benefit of clarifying the system gaps in the Annapolis and Parole areas. This information will be useful to identify what the City and County and State route system should be for the area.
- Using the information and policy direction of the *Pedestrian and Bike Master Plan* and the bicycle system gaps identified as a byproduct of the bicycle route map, the County should set specific design analysis and funding priorities regarding the Tier 1 and 2 projects, which would yield the most benefit to the existing bicycle system of bike lanes, pathways, and streets.
- Adopt a City policy, consistent with the State and County, to integrate bicycle facilities and planning into new development and transportation projects.

- Include bicycle boulevards as a variation to the “shared lane” facility option noted in the County plan. Bicycle boulevards do not have lane marking and typically use local streets. Stops signs are arranged to facilitate through bicycle movement in the desired direction. To discourage motorists from using the same routes, vehicle volumes and speeds are reduced through the use of mandatory turns (with bicyclists allowed to continue) and traffic calming techniques. The City and County should invite bicyclists and neighborhoods to propose bicycle boulevards for inclusion in the Annapolis area bicycle network.

*Type: Policy to identify and adopt a bicycle network plan. Program to establish design approaches and standards along with improvement priorities. Project to ultimately improve the bicycle network according to the plan.*

*Timing: Short- and long-term*

*Agency: City of Annapolis and Anne Arundel County staff in coordination with MDOT.*

*Estimated cost: \$15,000 to \$30,000 for the plan and program.*

<b>I. Maximize Connectivity Between Activity Centers</b>	<b>Type</b>			<b>Timing</b>			<b>Agency</b>				
	Policy	Program	Project	Immediate	Short-term	Long-term	City	County	State	ARTMA	USNA
<b>Recommendations</b>											
I. C (1) Coordinate Traffic Signals											
I. C (2) Comprehensive Traffic Studies											
I. C (3) Forest Drive – Neighborhood Circulation Opportunities											
I. C. (4) Transportation Demand Modeling											
I. C. (5) Priority Transit Treatment											
I. C. (6) Transit Center Feasibility Study and Development											
I. C. (7) Realign Chinquapin Round Rd. and Admiral Dr.											
I. C. (8) Bicycle Route Map											
I. C. (9) Bicycle Network Plan for the Study Area											

## **I. D. Anticipated Benefit to User Groups**

Because congestion along major street corridors is the most significant problem during the morning and evening peaks and during some special events, the planned actions will be most beneficial to daytime workers, outbound commuters, short and long-term patrons, day tripper tourists, and overnight visitors. With the exception of the Chinquapin Round Road/Admiral Drive realignment, these recommendations complement the planned actions with a focus on obtaining higher performance and

efficiency with the existing facilities. In addition, the traffic study and transportation modeling recommendations will allow the government agencies to better understand the operation of the system and the interrelationships between future development, system improvements, and system performance.

Providing information about existing routes, enhancing the bicycle network, addressing critical route deficiencies and gaps, and providing parking will be important first steps toward making bicycling a popular transportation mode. This will provide benefits for all user groups, but the ones most likely to benefit will be the daytime workers, outbound commuters, and short and long-term patrons. As with pedestrian facilities, bicycle improvements should strive to ultimately create an interconnected system, which can be used to fulfill the travel needs for many of the user groups, especially daytime workers, outbound commuters (perhaps just to a park-and-ride), shift workers, short and long-term patrons, and visitors. The first three projects will provide tangible improvements, and will represent additional pieces to the bicycle system. The Tier 1 and 2 designations by the County show intent to address access along these routes, but do not provide any details about potential design treatments.

## **I. E. Consistency with the Vision and Themes**

### ***I. E. (1) Specific Mobility Themes***

- **Maximize the connectivity and ease of access for user groups via all modes of travel (e.g., pedestrian, bicycle, auto, transit, and water taxi) between activity centers.**

These actions, particularly in unison with the facility improvement focus of the planned actions, will enhance mobility by increasing travel efficiency on major transportation corridors and promoting improved understanding about how to minimize adverse impacts of future development. The recommendations in combination with the planned actions will help relieve local traffic congestion and bottlenecks. The ultimate benefit of these improvements will depend upon the effectiveness of other transportation recommendations and management of traffic on Route 50/301. If local traffic volumes continue to increase and overflow traffic from Route 50/301 persist, mobility gains for vehicular traffic will be short-lived. If fully implemented, users will have improved opportunities for using transit and for bicycling.

- **Improve the operational efficiency of transportation circulation patterns within activity centers.**

Although the focus of the recommendations is on connectivity between activity areas, they will also enhance circulation within activity centers. As discussed earlier, traffic bottlenecks on major routes tend to impact circulation within activity centers with traffic backups and motorists searching for alternate routes to avoid traffic. As noted earlier, traffic problems on US 50 can cause problems in the study. This issue is one that the City and County must continue to work on with MDOT.

When facilities are available, bicycling provides outstanding mobility. An average cyclist may easily travel to any part of the study area. With the relatively short distances between destinations within the study area, bicycling should be used to

a much greater extent. Improvements like the ones above represent positive steps to make this possible.

- **Realize maximum effectiveness of all existing and future public and private parking facilities for all user groups.**

The recommendations in this category do not affect parking directly.

### ***I. E. (2) General Mobility Themes***

- **Provide appropriate access and mobility for user groups at appropriate times.**

As with the planned actions, many of the recommendations are designed to enhance vehicular mobility. In addition, the recommendations will improve transit operation along corridors.

As noted particularly in the public survey, the vast majority rated bicycle facilities as poor. Not surprisingly, none of the respondents in the sample rode. Facility improvements will make bicycling a safe and feasible transportation option for trips between activity centers in the region.

- **Increase the overall safety, comfort, and convenience of transportation facilities for all user groups.**

The planned actions will enhance the situation for all user groups (except for residents and deliveries where no impact is anticipated) by improving the operational efficiency of the major street system in the study area.

One of the leading reasons people do not ride bicycles relate to safety concerns. Proper facilities will improve safety and encourage cycling. Bicycle facilities, either on or off-street will provide an additional measure of safety for cyclists. The route map will inform users of appropriate routes to use. Bicyclists with appropriate places to ride will be less likely to use sidewalks, thereby reducing the potential for pedestrian and bicyclist conflicts.

- **Provide recommended actions with realistic opportunities for implementation.**

Many of the projects are elements of adopted plans and are funded or under construction. The new recommendations should be relatively easy to implement because of their proportionately low cost and their ability to avoid creating significant negative impacts for user groups or properties. All of the recommendations are supportive of City and County plan policy to enhance safety and mobility for a variety of modes within the region.

### ***I. E. (3) Quality of Life Themes***

The recommendations are consistent with the quality of life themes because they are generally geared toward utilizing the existing facilities more efficiently and by promoting alternative transportation modes to the automobile. Providing some measure of improved mobility by a wider variety of modes will enhance the quality of life.

## **II. IMPROVE CIRCULATION PATTERNS**

### **II. A. Introduction**

In addition to mobility between major destinations, circulation within activity centers, most notably downtown and Parole, represents the second key focus area for this Plan. A significant portion of the congestion within activity centers is due to people traveling relatively short distances within them. Aware of this problem, the City (Annapolis Transit) has devoted considerable energy toward improving mobility through the use of transit circulator routes. Several of these are in place, as described in the existing conditions section.

Annapolis Transit plans to further enhance this service as noted in the Planned Actions, which are described in the *City of Annapolis and Anne Arundel County Transit Development Plan Update* (TDP). The three recommended actions, which follow, are designed to complement the transit proposals in the TDP by improving wayfinding information for visitors to downtown and Parole as well as an additional transit option. The recommendations are mutually supportive, and they will be most effective if implemented concurrently. It is not required that they be implemented together or in a particular sequence to produce positive benefits.

It is important to understand that other recommendations relate to the issue of circulation within activity centers. Perhaps the most notable are several of the parking management and travel behavior recommendations in the following sections.

### **II. B. Planned Actions**

The planned actions for enhancing circulation patterns within activity centers are focused on a variety of transit improvements. The TDP Update provides a coherent short-term strategy for improving transit services that will enable people to make short trips via bus. Given the funding available, or likely to be available, the TDP describes the following service enhancements.

#### ***II. B. (1) Parole Circulator***

A mid-day circulator is proposed in the *City of Annapolis and Anne Arundel County Transit Development Plan* to begin operation through the Parole area, including Bestgate Road, West Street, Riva Road, Solomons Island Road, Chinquapin Round Road, and Forest Drive. This circulator, which would operate between 11 a.m. to 2 p.m. with one-hour headways, is intended to provide alternative transportation over the noon hour.

#### ***II. B. (2) Heritage Harbour – New Route***

This hourly bus service is proposed between Heritage Harbour and Annapolis Mall and Medical Center during the daytime hours (7 a.m. to 6 p.m.). It will primarily be a circulator route for the Parole area.

### ***II. B. (3) Shuttle – Inner West Street***

A shuttle between Inner West Street Circle, Church Circle, Duke of Gloucester, Green Street, and Main Street is proposed for mid-day (11 a.m. to 2 p.m.) and evening (7 p.m. to 10 p.m.) service on weekdays with 5 and 15 minute headways respectively. Weekend service over the same hours is proposed with 15 minute headways.

### ***II. B. (4) Shuttle – Annapolis Triangle***

A shuttle on Taylor Street, Inner West Street, Church Circle, Duke of Gloucester, Green Street, Randall Street, King George Street, College Avenue, and Rowe Boulevard is proposed for daytime service (7 a.m. to 7 p.m. on weekdays and 9 a.m. to 6 p.m. on weekends) throughout the week. Headways on the weekdays will be 15 minutes and 30 minutes on the weekends.

### ***II. B. (5) Provide Real Time Information Signs***

The City of Annapolis/Annapolis Transit has included this project in the Transportation Improvement Program (TIP) for implementation of an Intelligent Transportation System (ITS) using a Global Positioning System (GPS) with 2-way communication, on board displays/enunciators and real time on-site information for all bus services, including shuttles at bus stops/shelters. AT has verified equipment needs to make this possible. Other initiatives include color coded routes and information provided in Spanish.

## **II. C. Recommendations**

Because the region will not succeed by addressing congestion exclusively through street improvements and system expansion, the region should also focus on improving circulation by encouraging more transit use, walking, and bicycling. The following recommendations are designed to complement the transit service improvements noted above. A summary table of the recommendations is on page 96.

### ***II. C. (1) Directional Signs for Visitors and Tourists***

#### **Purpose**

To provide wayfinding signs for motorists visiting Annapolis to help them navigate by car and on foot.

#### **Description**

It was commonly mentioned throughout the public affairs program that insufficient signage and information was available to guide tourists when they come to the Annapolis area by car. The City staff has developed a wayfinding sign system concept, which would be oriented to both motorists as they arrive and pedestrians as they walk throughout the downtown. This should be pursued to improve circulation and wayfinding, particularly for daytripper and overnight visitors.

For motorists entering the City, real-time information sign or signs would be placed along Rowe Boulevard indicating the parking status of what will be the four main City garages – Gotts Court, Hillman, Park Place, and Knighton. Once it is completed, the Bladen Garage may be included when it is available to the general public during the evening

and weekend. Incoming motorists would be able to see which lots, if any, have capacity and approximately how much. The signs would guide motorists to the four garages.

Motorists would also be advised that parking and free shuttle services are available from the NAAA lot. If the garages are full, the sign would advise that the NAAA and shuttle as the only major option available. This would allow motorists to efficiently find parking and help reduce downtown congestion caused by motorists circulating to find parking.

The City provides pedestrian-oriented signs to guide visitors to historic sites and events located throughout the City. Many of these signs need maintenance and updating. The City staff has initiated the “Navigate Annapolis” sign program, which is inspired by wayfinding sign programs in downtown Philadelphia and Baltimore. The Annapolis sign program, implemented by the Annapolis Department of Public Works, will include the following components:

- **Unifying logo** for easy identification of wayfinding signs;
- **Comprehensive sign program** oriented to motorists and pedestrians; and
- **Color theme** for areas in downtown to make maps and signs easier to use.

*Type: Program to establish design approaches and standards along with improvement priorities. Project to ultimately provide the wayfinding sign network according to the plan.*

*Timing: Short- and long-term*

*Agency: City of Annapolis in coordination with Anne Arundel County (OPZ, DPW, EDC) MDOT, and Convention and Visitors Bureau.*

*Estimated cost: The cost cannot be identified at this time. Costs may vary widely depending upon the design and materials used, the number of signs, and the related visitor information provided to enhance the effectiveness of the signs (e.g., visitor guide or brochure).*

## **II. C. (2) Pilot Jitney Service Program**

### **Purpose**

To provide transit service to areas that cannot be efficiently served by regular fixed-route transit.

### **Description**

The public and stakeholders also mentioned supplemental transit services to provide travel alternatives to portions of the study area without transit. Jitney service was noted as a possible way to link neighborhoods with the main transit route network. Jitney service involves small buses, vans or automobiles, which provide transportation services. They typically operate on a schedule with a flexible route that allows convenient pick-up and drop-off of passengers. This type of service can be relatively expensive to provide, especially if ridership is low.

It is recommended that jitney service be provided as a pilot project in conjunction with a promotional program, such as the TravelSmart program described later in this report. During the individualized marketing efforts for a particular neighborhood, jitney service could be offered as one of the travel options. The potential for success would clearly be improved if routes information, schedules, free tickets, etc. could be offered to entice residents to give it a try.

*Type: Program*  
*Timing: Short- and long-term*  
*Agency: City of Annapolis and Anne Arundel County staff.*  
*Estimated cost: Variable.*

### ***II. C. (3) Reduced Transit Headways***

#### **Purpose**

To enhance convenience and encourage increased transit ridership by providing shorter waiting times between buses.

#### **Description**

Annapolis Transit (AT) is clearly interested in reducing headway times as much as available financial resources will allow. In particular, the City, County, and AT should evaluate further reductions in headways where transit plays a key role in the success of the planned actions and recommendations described in this document. The success of parking management recommendations in the following section will be dependent upon complementary transit facilities and service.

*Type: Program*  
*Timing: Short- and long-term*  
*Agency: City of Annapolis and Anne Arundel County staff.*  
*Estimated cost: Not determined.*

### ***II. C. (4) Annapolis Area Transfer Point***

#### **Purpose**

To replace the Spa Road Transfer Point with a suitable location with sufficient capacity and amenities.

#### **Description**

The Spa Road Transfer Point is inadequate to meet operational and transit use needs. It is a high priority for AT to find an alternate location. A transfer point alternative is currently being pursued by AT to provide a suitable replacement for the Spa Road Transfer Point.

*Type: Program*  
*Timing: Short- and long-term*  
*Agency: City of Annapolis and Anne Arundel County staff.*  
*Estimated cost: \$1,030,000.*

### ***II. C. (5) Systematic Sidewalk Repair and Improvement Program***

#### **Purpose**

To create a methodical system and implementation plan to address gaps in the existing sidewalk and pathway network to encourage walking.

#### **Description**

The Annapolis Department of Public Works has formed a staff committee named TEAM PED to follow-up on the work completed by the Citizen's Sidewalk Task Force. The Department of Public Works recently proposed "trunk" system of primary pedestrian

routes that will receive focus and resources to enhance pedestrian access throughout the City. Subsequent stages of the project would identify secondary routes or “branches” for priority treatment.

It is recommended that this approach receive full City support. A map showing prioritized pedestrian accessibility routes has recently been produced to guide future improvement projects. This program provides an excellent beginning for systematically improving sidewalks, and it should be expanded to be a coordinated effort with the County and State.

As noted through the public affairs activities and field surveys, sidewalks do not always accommodate all users, especially those who are mobility challenged. Downtown Annapolis generally has the best system in the area, although some sidewalk segments are not well-suited for the mobility challenged. Outside of downtown, the sidewalk system is of variable quality, utility, and safety. In many cases, it is totally absent. This program should pay special attention to the needs of individuals who are mobility challenged.

*Type: Program*

*Timing: Short- and long-term*

*Agency: City of Annapolis, Anne Arundel County, and SHA staff.*

*Estimated cost: Staff time for the program, project costs are undetermined.*

## ***II. C. (6) Interim Bicycle Safety Improvements Program***

### **Purpose**

To create a methodical system and implementation plan to mitigate street hazards for bicyclists.

### **Description**

Safety improvements fall into two basic categories:

- Removal of roadway surface hazards such as potholes, irregular pavement, and storm drain grates.
- Improvement of inadequate facilities.

The *Anne Arundel County Pedestrian and Bicycle Master Plan* (Appendix D: Facility Maintenance) addresses roadway surface maintenance and removal of surface hazards. The City and State should implement similar programs if this is not currently being done.

To correct problems created by inadequate facilities, the trouble spots must first be identified. The bicycle route map noted above would provide a process by which routes with poor cycling conditions could be identified in a comprehensive manner. The bicycle level of service (LOS) system proposed in the *Anne Arundel County Pedestrian and Bicycle Plan* may prove to be the ideal method to rate cycling conditions in the study area for the route map as well as a City-County program to improve bicycling safety in identified trouble spots. With limited financial resources, it will be particularly important for the City, County, and State to coordinate their efforts for improving bicycling safety in a meaningful way. Random improvements along bicycle routes that do not address existing problems will do little to encourage more bicycling. Safety improvement should be made in the context of the entire system or a particular route.

The County plan identifies several appropriate methods for accommodating bicycles ranging from wider shared travel lanes to separate pathways. Because providing bicycle lanes and pathways will prove to be difficult, especially in the short-term, the City and County should look for creative solutions. Major safety and convenience improvements should be implemented, even if the County cannot fund the preferred solution in its entirety.

For example, the Eastport Bridge has been identified as a critical route to and from downtown Annapolis and is inadequate for bicyclists, as well as pedestrians. This bridge accommodates all transportation modes and, although current sidewalk widths are adequate, they are not ideal, and there are no bike lanes. Traffic volumes are significant and speeds are often high, making this a particularly difficult bicycle route. In order to provide optimal improvement of this situation, the bridge would need to be replaced or upgraded to include bike lanes. Cost is a barrier that would likely delay implementation of this recommendation. However, because of its importance as a link to Eastport and destinations to the south, some type of interim solution should be considered in the short-term.

A possible solution could include bike lanes or paved shoulders on 6<sup>th</sup> Street between the bridge and Severn Avenue. Severn Avenue serves as a local bike route for Eastport and as a neighborhood connector route to Hilltop Lane. The wide northbound approach offers sufficient width for a bike lane or striped shoulder. The two southbound lanes to Severn Avenue should be considered for similar treatment, except for a right turn lane at the intersection.

To assist cyclists over the bridge, consideration should be given to traffic calming techniques to help slow traffic to safer speeds across the bridge. The shoulder portion of the grating should be modified to provide a safe no-slip surface for bicycles.

*Type: Program to identify improvement areas and needed improvements followed by projects to implement the program.*

*Timing: Short- and long-term*

*Agency: City of Annapolis and Anne Arundel County staff in coordination with MDOT as appropriate.*

*Estimated cost: Staff time for the program portion.*

## ***II. C. (7) Bicycle Route Enhancements***

### **Purpose**

To install or construct bicycle facility improvements consistent with existing plans and/or Recommendation I. C. (9) above.

### **Description**

The City and County should consider making some of the improvements suggested by trail designations or adopted plans. Examples include providing bicycle lanes for the on-street portions of the Annapolis Maritime Trail, constructing the Forest Drive hike/bike trail, and creating bike lanes/marked shoulders along King George Street. The last project could be accomplished with the removal of approximately 30 to 35 on-street parking spaces on the west side of the street near St. John's College.

Because of the limited pedestrian and bicycling improvement options along West Street, the Popular Trail should be evaluated for improvement as a major pedestrian and bicycling corridor. It could possibly be extended to the west along the railroad alignment or via Admiral Drive. The feasibility of extending the trail east of Taylor Avenue, along what is now a private driveway, should also be evaluated. Such an extension could potentially be connected to Inner West Street or Clay Street.

*Type: Program to further develop adopted plan concepts followed by projects to implement the program.*

*Timing: Short- and long-term*

*Agency: City of Annapolis and Anne Arundel County staff in coordination with MDOT as appropriate.*

*Estimated cost: Not determined.*

### ***Comment Regarding the “People Mover”***

During the public involvement portions of the project, several key stakeholders and residents commented that a “people mover” would be an important transportation alternative to consider. It is regarded primarily as a way to enhance mobility within activity centers – especially downtown and Parole. The “people mover” concept is an automated system utilizing passenger carriages traveling in a dedicated lane for travel through the city. While it could hold some interesting possibilities for moving people within and between Parole and downtown, there are a number of significant issues including:

- *High cost.* The AT Director indicates that the design costs for this prototypical system alone are expected to be around \$10 million.
- *Dedicated space needs.* The system would run in a dedicated lane or track. With the limited street widths in the City, such a dedicated route will be difficult and expensive to provide.
- *Untested technology.* One potential advantage of this system would be an automated operation that would not require a driver. However, in a relatively uncontrolled environment (downtown v. an airport people mover), a driverless system would represent a technology that is new, untested, and potentially difficult to design and operate.
- *Inflexible routing.* Because of the fixed route design, the alignment could only be modified at significant expense to respond to future needs.
- *More cost-effective options.* Because of the relatively high cost of such a system, a range of more cost-effective and tested options are available. Simply providing further enhancements to the existing transit and shuttle system (e.g., shorter headways, extended hours, more routes) would be more cost-effective.

<b>II. Improve Circulation Patterns</b>	<b>Type</b>			<b>Timing</b>			<b>Agency</b>				
	Policy	Program	Project	Immediate	Short-term	Long-term	City	County	State	ARTMA	USNA
<b>Recommendations</b>											
II. C. (1) Directional Signs for Visitors and Tourists											
II. C. (2) Pilot Jitney Service Program											
II. C. (3) Reduced Headways											
II. C. (4) Annapolis Transfer Point											
II. C. (5) Systematic Sidewalk Repair and Improvement											
II. C. (6) Interim bicycle Safety Improvements											
II. C. (7) Bicycle Route Enhancements											

## **II. D. Anticipated Benefit to User Groups**

This will benefit all user groups to varying degrees by reducing congestion and providing more choice within the two primary activity centers – downtown and Parole. Congestion will be eased by people choosing the shuttle to driving, and the directional signs will help minimize driving to get to parking. Deliveries will be unaffected and shift worker who leave work later in the evening will generally not benefit from these improvements. The enhanced transit will provide a viable alternative to the automobile for some individuals, helping minimize congestion for those who continue to drive.

## **II. E. Consistency with the Vision Themes**

### **II. E. (1) Specific Mobility Themes**

- **Maximize the connectivity and ease of access for user groups via all modes of travel (e.g., pedestrian, bicycle, auto, transit, and water taxi) between activity centers.**

The ability to get around within the downtown and Parole will be enhanced by reducing congestion. With improved service, transit will become an increasingly attractive and viable mode for many user groups, especially patrons and visitors.

- **Improve the operational efficiency of transportation circulation patterns within activity centers.**

The sidewalk system is the cornerstone for multi-modal access and mobility. Without it, walking clearly does not work well, and transit also is significantly hindered if people cannot walk to and from the bus. Improved walking facilities will contribute to enhancing mobility and convenience for persons who cannot drive and providing an excellent alternative for those who could.

The recommendations will further enhance the planned transit and shuttle services with pedestrian and wayfinding facilities. Their major purpose is to

provide alternatives to automobile travel for short trips – especially those within activity centers.

- **Realize maximum effectiveness of all existing and future public and private parking facilities for all user groups.**

The proposed directional sign program will be an important element to support the efficient use of existing and planned parking facilities by directing visitors and minimizing unnecessary driving within the downtown.

## ***II. E. (2) General Mobility Themes***

- **Provide appropriate access and mobility for user groups at appropriate times.**

Transit already makes an important contribution to the transportation choices for residents. The proposed enhancements will continue to make transit more accessible and convenient, encouraging motorists to leave their cars behind for some trips.

Improving the existing sidewalk system to eliminate gaps, allow access for mobility challenged individuals, enhance safety, provide more functional and pleasant walking environments will do much to promote walking in the study area's activity centers. These improvements and the County focus on improvement zones will make a valuable contribution to expanding mode choices. However, for maximum benefit, these improvements should be made with an overall strategy for making important connections. Places where the sidewalk network is not interconnected should be the focus of attention for sidewalk improvements.

- **Increase the overall safety, comfort, and convenience of transportation facilities for all user groups.**

The added convenience of improved transit and the proposed pedestrian and bicycle improvements are clearly consistent with this theme.

- **Provide recommended actions with realistic opportunities for implementation.**

All of the recommendations are clearly supportive of City and County plan policy to enhance safety and mobility for a variety of modes within the region.

## ***II. E. (3) Quality of Life Themes***

Virtually any healthy urban area has excellent transit. Transit use will help reduce congestion and minimize air quality impacts. The improved mobility offered by a variety of modes for individuals who do not drive is an important aspect to their quality of life. In addition, the quality of the activity centers, most notably downtown and Parole, will benefit from a reduced dependence upon automobiles and the congestion they cause.

Creating a good walking environment contributes to the area's quality of life. Walking is the simplest and most basic form of transportation for all ages. Literally every trip begins and ends as a pedestrian. Offering expanded opportunities to walk comfortably and safely is an important element to the quality of life in any community. Bicycling provides

another quite, non-polluting form of transportation. Creating a good bicycling environment contributes to the area's quality of life with reduce automobile congestion and pollution.

### **III. MAXIMIZE EFFECTIVENESS OF PARKING FACILITIES**

#### **III. A. Introduction**

Parking and congestion have been identified as significant issues for the downtown and study area as a whole. The *Ward One Sector Study* of 1992 identified congestion as the "single most important issue, which the City must face." As noted in the Information Sources and Data Analysis sections above, access to and from downtown, Parole, and other neighborhoods in the study area continues to be an important issue. Much of the difficulty for the downtown and other portions of the study area relate to providing automobile access and parking in an area with over two centuries of history before the first automobiles arrived. While parking is not a major issue outside of the downtown, growing automobile traffic is.

The major parking facilities or concentrations of parking facilities include the downtown, Parole Growth Management Area (GMA), Harry Truman Park and Ride lot, Naval Academy Athletic Association (NAAA) lot, Inner West Street, and Outer West Street. These facilities provide the majority of the parking opportunities for all of the user groups, except for residents who park in their respective neighborhoods. These six parking concentrations are the focus of the parking recommendations. The current operation and use in these six areas is summarized below with additional details in Table 3 and Figure 8.

#### ***Downtown***

This area has eight major parking facilities, which are available for public use. The downtown also has a significant amount of on-street parking. The available public parking totals over 3,800 parking spaces. The USNA campus parking is excluded from the parking equation because it is not available to the general public. Daytime workers, who generally arrive between 7:30-9:00 a.m. and depart between 4:30-6:00 p.m., use the majority of the parking garage spaces. For example, approximately two-thirds of the daytime capacity of the Hillman and Gotts Court garages is used by daytime workers (900+ spaces). Shift workers, short- and long-term visitors, and day tripper tourists account for the balance of the garage and parking lot use. On-street parking is primarily used by short-term visitors, shift workers, day tripper tourists, deliveries, and residents. The daytime workers use of much of the available parking in the downtown, creating problems for other users who arrive later in the day. As shown in Table 3, the majority of the parking facilities are located near Annapolis Transit (AT), shuttle, and/or Maryland Transit Administration (MTA) service.

#### ***Parole GMA***

The Parole GMA has a suburban development character, and off-street parking is generally plentiful for the commercial, public, and residential uses in the area. The redevelopment in the Parole area, within the GMA, is in the planning stages. The 1994 *Parole Urban Design Concept Plan* envisions a mixed-use center with a combination of

retail, office, and residential activity. It also calls for a multi-modal facility to potentially provide parking and tourist-related facilities, tour bus facilities, shuttle and/or bus service to Annapolis, and commuter bus service. A specific location for this facility has not been identified. Light rail or “people mover” service is also noted as a possibility. Subsequent planning work has followed the adoption of this plan, however, the mixed-use and multi-modal transit center remain as key planning elements.

### ***Harry Truman Park and Ride Lot***

This parking lot is owned by the State of Maryland. Its sole purpose is to provide parking for outbound commuters. The 466-space lot has bus shelters and bays for MTA buses. AT provides service within walking distance of this facility on Riva Road. The use of this lot by outbound commuters has grown rapidly, and it is currently used over its design capacity. Although this Plan does not make any recommendations regarding MTA service, several of the land use and parking management recommendations that are intended to support MTA routes, including this lot and other commuter parking facilities in the study area.

### ***NAAA Lot***

The NAAA is a non-profit organization, which manages the Navy Stadium and associated parking lot. The 3,800± space lot serves a variety of parking needs. Daytime workers, outbound commuters, and day tripper tourists represent the primary users of this facility. Approximately 1,200 spaces are used on a daily basis. Of these, about 800 are used by State employees, many of whom will use the Bladen Street garage upon its completion. These spaces are provided through a contract between the State of Maryland and NAAA, which runs to 2009. The remainder of the daytime users are people who park on a monthly (110) or daily (290) basis. There are approximately 12 special events (including the Boat Show, Crab Feast, Circus, Annapolis 10-miler, Bay Bridge Walk, Navy football, and USNA graduation), which utilize most or all of the available spaces.

Transit service is provided by AT buses (Gold Route), shuttle (Downtown and Navy Blue), and MTA. MTA does not have a formal arrangement with the NAAA, but several bus routes stop at the site to pick-up and drop-off outbound commuters. People using the lot as a park-and-ride either to downtown or destinations out of the area, pay a daily parking fee.

### ***Inner West Street***

This section of the City has experienced a significant amount of redevelopment over the past ten years. The Garrett parking garage currently provides 288 spaces, and on-street parking provides a modest amount of additional parking.

### ***Outer West Street***

This segment of West Street has parking for the businesses and residents in the area, but it does not have any existing or planned public parking facilities. However, Outer West Street is designated as a “Mixed Use Center”, and the City is completing a land use analysis and plan for this area, focusing on the Chinquapin Round Road area. As this area redevelops according to adopted City plans, public parking garages in lieu of

private surface parking would allow more efficient use of land and indirectly help transform the area into the urban, mixed-use center desired by the City. Transit service is currently provided by AT and MTA (Table 3).

### **III. B. Planned Actions**

To help alleviate the current parking deficiencies in the downtown, encourage development of Parole Center, and accommodate outbound commuting, a number of parking projects are either planned or are being constructed.

#### ***III. B. (1) Bladen Garage***

This garage is slated by the Maryland Department of Governmental Services (DGS) to provide 831 spaces, which will be occupied during the work-week by members of the General Assembly and their staff. These spaces may be available for weekend and evening use by short term patrons and tourists and for event parking.. It is proposed to be located on the corner of Calvert and Bladen Streets. Currently many of the State employees park in the NAAA lot, and upon completion of this facility would park in the garage.

#### ***III. B. (2) Park Place Garage***

This 1,396-space garage is part of the Park Place mixed-use development located on West Street and Taylor Avenue. The City will own 896 of the spaces, which will be available to City employees and the public.

#### ***III. B. (3) Harry S. Truman Lot Expansion***

The existing 466-space park-and-ride lot, located in Parole, is owned and operated by MDOT. It is being considered for a possible 100 to 200-space expansion to satisfy growing park-and-ride demand.

#### ***III. B. (4) NAAA Lot Improvements***

The NAAA is in the process of making a number changes to the configuration and operation of the parking facilities in coordination with the City Department of Transportation. The intent is to better manage the facilities, control traffic, and reduce impacts on the surrounding neighborhood. A new parking management firm has been hired to oversee the parking facility operation. This will include at least one person on site during daytime hours. The NAAA parking concept would not expand parking use, but would provide more discrete areas for different parking functions. The parking concept includes:

- *Lot A.* 1,908 grass parking spaces on the southwest side of the site for overflow event parking. Access via Taylor Avenue, Farragut Road, and Cedar Park Road.
- *Lot B.* 509 paved parking spaces between Lot A and the stadium for commuters. Access via Taylor Avenue and Farragut Road.
- *Lot C.* 107 paved parking spaces located around the north end of the stadium. Primary access via Farragut Road.
- *Lot D.* 856 paved parking spaces located on the northeast side of the stadium for State employees. Access via Taylor Avenue.

- *Lot E.* 240 paved parking spaces located immediately northeast of Lot D for midshipmen. Access via Farragut Road.
- *Lot F.* 133 paved spaces located near the State courthouse for courthouse visitors. Access via Taylor Avenue.
- *Lot G.* 21 additional paved spaces with access via Farragut Road.
- *Controlled access.* Gates controlled either by an attendant or a swipe card issued to users.
- *Landscaping.* Proposed landscaping on the site perimeter and within the parking lot.
- *Walking pathway.* This is being completed along the perimeter of the site.
- *Parking improvements.* Repaving (no additional impervious surface) landscaped islands, lighting, and bus shelters are proposed.
- *Bus and shuttle route through the site.* This is proposed to go around the stadium via Taylor Avenue for passenger pick-up and drop-off.

### **III. C. Recommendations**

The recommendations herein provide a holistic parking management strategy for the nine user groups in the study area. The objective is to provide appropriate parking access, convenience, and safety for all user groups by:

- Establishing an area-wide parking policy that is developed and implemented by a coordinating body;
- Increasing the efficiency of existing and planned parking facilities and encourage alternative travel modes to alleviate the need for additional parking facilities; and
- Providing visitor and special event parking that will serve both the community and visitors appropriately.

It is important to emphasize the degree to which these individual recommendations are dependent upon and support each other. None of the recommendations will be particularly effective, or politically popular, as separate proposals. In addition, the success of the parking strategy is linked to the shuttle service improvements that are planned or recommended in the preceding section. Although parking is generally plentiful throughout the study area, it certainly can be deficient in specific locations for certain user groups. The objective of the parking strategy and related recommendations is to provide sufficient parking to equitably meet the needs of all user groups. A summary table of the recommendations is on page 117.

#### ***III. C. (1) Establish an Area-Wide Parking Coordination Body***

##### **Purpose**

To provide a venue to continuously involve government agencies and stakeholders in managing downtown parking in a way that reduces traffic impacts and provides suitable parking for all user groups.

##### **Description**

It has been recognized for some time that parking issues in the study area, and downtown in particular, must be addressed in a holistic manner for any of them to be successfully resolved. Currently, a variety of actions are made on the part of the State, City, County, businesses, and developers, which affect parking in the study area.

To deal with this decentralized manner in which parking is provided and used, the Ward One Sector Study recommended the creation of what it called the “Downtown Annapolis Parking/Transportation Agency (DAPTA)” as a coordinating body for the various parking and transportation elements affecting the downtown. This agency was proposed to have the responsibility for construction and implementation of capital improvements within the City. Representatives from the Annapolis, Anne Arundel County, state of Maryland, Naval Academy Athletic Association, ARTMA, business community, and residential community were recommended for this coordinating body by the study.

Although this recommendation was not implemented, the rationale behind it continues to be valid today for the downtown and study area generally. Because of the area’s limited ability to appropriately accommodate automobiles, the parking needs and programs for agencies, businesses, and residents must be closely coordinated if congestion and parking issues are to be successfully addressed and managed.

A DAPTA or similar coordinating body for the study area could provide the following functions:

- Establish a parking policy regarding the total amount and distribution of parking that is desirable for the downtown, considering its historic character, street system capacity, and user group needs.
- Work with the NAAA to develop a master plan for the Navy Stadium lot, which addresses parking and transit needs in a balanced approach with surrounding neighborhood concerns.
- Determine the long-term role of the Truman lot for outbound commuter parking, visitor/special event parking, or sale and redevelopment.
- Identify the parking and transit role for the Parole Center.
- Develop more rigorous bicycle parking standards for new development and parking facilities.
- Establish parking garage and meter fees to ensure equitable provision and distribution of parking for different user groups.
- Establish parking fines for meters and residential restriction violations.
- Oversee parking enforcement activities.
- Review new development proposals to ensure that parking is provided consistent with the parking policy noted above.
- Monitor parking activity and implement adjustments as necessary to achieve consistency with the parking policy.

*Type: Program*

*Timing: Immediate action and short- and long-term*

*Agency: City of Annapolis, Anne Arundel County, Maryland DGS, ARTMA, USNA, and NAAA staff.*

*Estimated cost: Staff time to manage.*

### ***III. C. (2) Establish an Area-Wide Parking Policy***

#### **Purpose**

To create, and revise as necessary, parking policies for the downtown to guide parking management as described in Recommendation III. C. (1).

### **Description**

The first order of business for the parking coordination body should be to establish an area-wide parking policy. At a minimum, the primary guiding principles should include:

- A commitment to increasing the share of all trips taken by non-automotive means (transit, bicycles and walking), especially in downtown.
- Access to parking for all user groups.
- Equitable distribution of major parking facilities and functions throughout the study area.
- Proper mitigation of negative parking impacts on surrounding residents and property owners.

The development of the Bladen Garage will create a perfect opportunity to provide more equitable parking through an incentive-based strategy, which would attract daytime workers to the NAAA lot from downtown parking. A DAPTA could establish the policy regarding the desired number of daytime workers to use the NAAA lot in lieu of downtown parking, but the Bladen Garage would offer the potential to shift up to 800 daytime workers from the downtown. It will be important to involve public and private employers, and it would be critical for the city, county, and state employees using the Hillman, Gotts Court, Whitmore, and the Board of Education facilities.

*Type: Policy*

*Timing: Short- and long-term*

*Agency: City of Annapolis, Anne Arundel County, Maryland DGS, ARTMA, USNA, and NAAA staff.*

*Estimated cost: Staff time to manage.*

### ***III. C. (3) Integrate Pricing and Incentives for Transit and Downtown Parking***

#### **Purpose**

To employ pricing and incentive programs to encourage parking as prescribed by the parking policy (Recommendation III. C. (2) and to make program adjustments as necessary to achieve the desired results.

#### **Description**

An important parking issue for the downtown, which is confirmed by the public surveys, stakeholder interviews, and public forums, is the relative scarcity of parking for certain user groups. As indicated above, the majority of the downtown public parking is occupied by 9 a.m. by daytime workers. As a result, shift workers, short and long-term patrons, and daytripper tourists can have difficulty finding convenient parking in the downtown area.

The NAAA lot is available to give motorists an alternative parking location. While this lot accommodates a significant number of commuters and visitors daily, the current pricing structure for parking does little to encourage use of this outlying lot in favor of parking in the downtown. For example, by driving past the NAAA lot and parking in the downtown, a daytime worker typically pays an additional \$2.50 (\$8 per day maximum in a parking garage compared to \$4 NAAA parking plus two \$0.75 rides on the shuttle). On-street parking costs \$0.50 per hour or \$4 to \$5 dollars per day if one is willing to feed the meter

and/or move the car during the day. In addition, the survey results indicate that the employers for over 65% of the respondents cover the daily parking expense.

#### Pricing to Encourage Desired Parking Behaviors

An incentive-based approach is recommended as a first step to encourage desired parking behaviors from user groups. Pricing should be amended to support the desired travel and parking behaviors by:

- Consolidating and reducing the total parking and shuttle fees for persons using the NAAA lot and shuttle.
- Working with downtown employers (including government) to implement a parking “allowance” as an employee benefit that would cover parking cost for using the NAAA lot, but not the total cost of downtown parking. The employees could choose “free” NAAA lot parking or pay the difference to park downtown. Carpoolers could continue to park downtown without paying the additional charge, and transit riders, walkers and bicyclists could have the “allowance” added to their paychecks.
- Implementing a garage pricing structure with low rates, such as the current \$0.50/ hour, for the first 4 hours and a significantly higher rate beyond 4 hours (e.g., \$2.00/hour). Shift the rates to the lower rate after 6 p.m. so that shift workers and evening patrons would only pay the low rate. The total daytime rate for 8 hours should be set to be significantly higher than the NAAA lot and shuttle rate.

As noted above, the construction of the Bladen Garage will create space for 831 vehicles, which are parked primarily by daytime workers in the NAAA lot as well as some of the downtown garages. This migration to the Bladen Garage will leave the NAAA lot with a significant number of available spaces for daytime use. The pricing incentives along with the other parking recommendations should be used encourage other daytime workers to park in the NAAA lot rather than the three primary downtown garages (Gotts Court, Hillman, and Whitmore). An initial goal of moving a minimum of 150 vehicles from each of the three garages would continue efficient utilization of the NAAA lot and provide a significant number (500±) of “new” parking spaces for other users including shift workers, short- and long-term patrons, and daytripper tourists. The area-wide parking coordination body could periodically adjust the parking incentives to achieve the desired parking behavior.

#### Adjust Parking Meter Rates and Improve Parking Enforcement

Parking meter rates and parking fines must be adjusted to discourage parkers leaving the garages for less expensive on-street parking. Parking enforcement has been cited as a weak deterrent because parking fines are relatively modest (\$15 for meter and \$25 for residential area violations). Enforcement is also regarded as not being very aggressive, encouraging people to gamble on not getting a parking ticket.

#### Reserve Short Term and Shift Worker Parking

A possible method to provide sufficient parking for shift workers would be to reserve some of the downtown parking for this group. The parking lots or garages could have valet or attendant parking to use the available space more efficiently. When employees arrive, they would either walk or take the bus or shuttle to work. In the evening, on-call transportation (perhaps a form of the jitney service noted earlier) would be available to take shift workers back to their cars or they could walk. This approach is suggested for two facilities in the downtown.

The Gotts Court parking garage currently serves shift employees. Parking for shift workers should be increased as necessary to make this, the Hillman Garage, and the Whitmore Garage the primary facilities serving shift workers in the Inner West Street/northern downtown area. Security and lighting improvements could then be focused here to make this arrangement sufficiently safe for the users.

The Compromise Street (commonly known as the Board of Education) Lot is proposed to be used to provide attendant parking for shift workers. Operating as a valet type of service, the 52-space parking lot can be used at approximately 40% greater efficiency (70± total) help meet the needs of employees working in the southern portion of the downtown. The Hillman Garage serve the central portion of the downtown.

*Type: Program*

*Timing: Short- and long-term*

*Agency: City of Annapolis and Anne Arundel County staff.*

*Estimated cost: Staff to manage. The cost of a parking attendant for the Compromise Lot should be significantly off-set by the greater utilization of the lot.*

### ***III. C. (4) Increase Parking Efficiencies***

#### **Purpose**

To take maximum advantage of existing parking facilities as recommended by the parking action team by using parking information signs, attendant parking, closer coordination with parking service contractors.

#### **Description**

The "Parking and Transportation Problem Solving Action Team Report" noted that the relative lack of the short-term parking could be remedied by initiating three primary actions.

#### **Parking Information Signs**

The Action Team Report indicates that software is installed in the Hillman and Gotts Court garages to calculate open parking spaces, but this information is not available to the public. The Action Team recommended installation of signs on the major entrances into the City. This recommendation will be implemented, assuming the City goes forward with its "Navigate Annapolis" program. At least one sign on Rowe Boulevard will provide information about the major parking facilities, how to drive to them, and what the current parking availability is.

#### **Continue to Provide Valet or Attendant Parking**

Valet or attendant parking is a common method to better utilize existing parking facilities by increasing capacity by up to 40% according to the Action Team Report. This practice is allowed by the City and should be continued.

#### **Revise Parking Service Contracts**

The Action Team Report indicates that the current parking contractor arrangements do not provide any incentive to maximize parking lot efficiency. To give the contractor flexibility to enhance efficiency and profits, while continuing to meet desired service levels, the Action Team recommended new parking request for proposal provisions to include:

- Not specifying staffing resources.
- Specifying parking rates.
- Requiring the parking management firm to provide insurance.
- Requiring a State of Maryland licensed security service.
- Providing more extensive parking statistics to better understand which user groups are parking in the facilities and when.
- Revenue sharing arrangements to encourage greater parking efficiencies.
- Monitoring parking activity and usage.

*Type: Program*

*Timing: Short- and long-term*

*Agency: City of Annapolis and Anne Arundel County staff.*

*Estimated cost: Staff to manage*

### ***III. C. (5) Visitor Center and Parking***

#### **Purpose**

To identify a site or sites for visitors that would reduce the traffic and parking impacts in the downtown.

#### **Description**

The need for a visitor center and related parking is a facility desired for the study area. As mentioned above, the 1994 *Parole Urban Design Concept Plan* envisions visitor accommodations as a possible component of the intermodal transfer center proposed for this area. Tourist oriented services and tour bus facilities are mentioned in the plan. The creation of a visitor center and parking will require a focused evaluation of factors pertaining to a range of factors, including such considerations as:

- Potential tourist market for Annapolis and/or other historic or recreation destinations in the vicinity.
- Ease of access for motorists and tour buses to reach the visitor center.
- Potential traffic impacts.
- Availability of sufficient parking for cars and tour buses.
- Ability to serve the visitor center with local and/or regional transit.
- Potential impact on surrounding properties.

The Parole area could potentially accommodate a visitor center successfully. However, because Parole is not particularly close to the downtown historic district, it appears that the center would need to offer tourist services, such as historic exhibits, retail, and restaurants, to make the site sufficiently attractive for tourists to visit before or after visiting the downtown. During the PMT discussions, it was mentioned that perhaps this center should be designed to serve visitors headed for a variety of destinations in the general area in addition to downtown. Bus or shuttle transportation between the center and downtown or other locations must also be convenient. The transit circulator routes proposed by Annapolis Transit will clearly be an important improvement in this regard. The potential types of facilities and services would include:

- Parking for automobiles and tour buses;
- Visitors building with tourist information and perhaps historical exhibits;
- Staff to assist visitors and oversee tour bus operation on the site (e.g., disallow engine idling);
- Restrooms;

- Retail and food services; and
- Shuttle service (Annapolis Shuttle Express) to the downtown along with encouragement or requirement for tour buses to stay at the visitor's center.

An alternative site to serve downtown visitors could be the NAAA property and/or a portion of the State of Maryland property, which lies between the NAAA property and Rowe Boulevard. This site potentially offers the following potential attributes:

- Location along the primary entry to the downtown.
- Closer proximity to downtown.
- Good visibility.
- Use of the undeveloped northwestern portion of the State property could allow right in and right out access from Rowe Boulevard to minimize traffic impacts on surrounding neighborhoods.

*Type: Program*

*Timing: Short- and long-term*

*Agency: City of Annapolis and Anne Arundel County staff.*

*Estimated cost: Not determined.*

### ***III. C. (6) Enhance the NAAA Lot for Downtown Parking***

#### **Purpose**

To utilize the NAAA lot more effectively for downtown parking while avoiding adverse impacts to the surrounding neighborhoods and streets.

#### **Description**

With a total of approximately 3,800 spaces available, this existing lot has capacity to accommodate additional motorists with final destinations in downtown Annapolis. Once the Bladen Garage is completed, over 800 spaces currently committed to State employees will be available for other users. However, to avoid undue negative impacts to surrounding residents, it is recommended that amendments to the operation of the lot do not result in any significant increase in the overall level of use.

The NAAA lot is the most desirable site to fulfill many of the parking needs for the downtown and special events for a variety of reasons including:

- Location at the primary entryway into the downtown.
- An existing parking facility, which represents a significant investment that cannot be easily moved (unless the stadium is relocated).
- Alternative sites of comparable size with reasonable proximity to major transportation routes and/or the downtown are not available.
- Excellent access to transit provided by Annapolis Transit and MTA.

As mentioned above, the NAAA is making, or plans to make, a number of operational and aesthetic improvements on the site. These improvements will provide significant benefits for the operation of the site and its appearance. These actions represent appropriate short-term steps, however, a longer-term evaluation should be made regarding future potential of the site and its operation. The NAAA, City of Annapolis, Anne Arundel County, Maryland Transit Administration (MTA), Annapolis Transit, State of Maryland, and the surrounding neighborhood organization (or DAPTA as recommended earlier) should be actively involved to develop a master plan for

employee, visitor, and special event parking and shuttle service on the NAAA property. Alternatively, if a DAPTA, or similar body is created as suggested above, it should work closely with NAAA on this project. A participatory process involving these parties would develop a master plan for the property including site improvements, access plan, shuttle and transit amenities, potential traffic impacts and mitigation, and estimated improvement schedule.

The key issues to be addressed by the master plan should include:

- **Neighborhood compatibility.** Decisions regarding the future use and operation of the site should consider neighborhood compatibility and the cumulative impact of different parking uses (e.g., daytime, visitor, special event) on surrounding residents.
- **Overall parking policy.** The overall level of activity should be determined. This could include a description of the various parking activities, including the number of special events that use the entire site.
- **Access.** An access plan for various parking functions, special events, and transit/tour bus access should be developed. This should include consideration of direct access to and from Rowe Boulevard across the State property to the NAAA lot. Both right in/right out and left turn exit during special events should be considered. For the left turn exit, median treatment to prevent inappropriate turning movements during normal operation should be evaluated. The significance of this issue cannot be understated. Preliminary discussions with State Highway Administration (SHA) staff indicates that establishing any type of direct access to Rowe Boulevard will face a number of legal and traffic engineering hurdles.
- **Transit.** Parking for downtown shuttle and bus service as well as MTA commuter service should be considered. To minimize overall automobile parking and access issues, it is recommended that walking and bicycling to the commuter bus should be encouraged by providing safe and convenient walking and bicycling facilities in the surrounding neighborhoods as well as improved security, shelters, and secure long-term bicycle parking, such as bike lockers.
- **Security.** Parking lot security for users should be addressed.
- **Potential visitor center.** As noted above, a visitor center could be properly located on the site, especially on the northwestern portion of the State property near Farragut and Rowe. Coupled with direct access from Rowe Boulevard, visitor and tour bus access could be accomplished without using local surrounding streets. Any additional parking could also be located a significant distance from any residential uses.
- **Management of special events.** Specific plans should be either revisited or developed with participation of the neighbors and appropriate City, County, and State departments. This Plan could be expanded to include other parking facilities to help reduce the level of impact on the immediate area. For instance, it is possible that 1,200 cars could be accommodated on weekends at a intermodal hub in Parole and another 831 at the Bladen Street garage.
- **Monitoring.** Because of the complex variables related to parking management, the City (and DAPTA as recommended above) should be flexible in its approach, monitor the effectiveness of parking policies, and amend parking management elements over time to achieve the desired results.

*Type: Program*

*Timing: Short- and long-term*

*Agency: City of Annapolis, Anne Arundel County, Maryland DGS, ARTMA, USNA,  
and NAAA staff.*

*Estimated cost: Staff time.*

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Table 3 – Existing and Potential Parking

Facilities and Services							Comments
Facilities	User Groups Served	Existing Spaces	Proposed User Groups Served	Future Spaces	Transit Services		
Downtown	Hillman Garage	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	451	Keep same mix of users, but through pricing and promotion programs reduce the number of daytime workers by 150± (to NAAA lot).	451	AT (Gr, B, Y), NB	The general strategy for the downtown is to encourage daytime workers to use the NAAA lot, transit, walking, or bicycling to provide more visitor and shift worker parking and to reduce the pressure for nonresidents to park in nearby neighborhoods. The strategy takes advantage of the 831 additional parking spaces, which will be made available with the completion of the Bladen Street Garage. State workers (mostly daytime users) will switch from the NAAA lot to Bladen Street. Through pricing and other incentives noted in this section, daytime workers using Hillman, Whitmore, and Gotts Court garages will be encouraged to use the NAAA lot and enhanced shuttle service to meet their parking needs. This has the potential to make up to 850± additional spaces available for shift workers, short and long term patrons, and day tripper tourists in these three garages plus the Compromise Lot. This Plan proposes a goal of shifting approximately 150 daytime workers from each of the three garages to make 400-500 spaces available in the downtown for other users.
	Whitmore Garage	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	830	Keep same mix of users, but through pricing and promotion programs reduce the number of daytime workers by 150± (to NAAA lot).	830	AT (Gr., B, Y, G), SS, NB	
	Gotts Court Garage	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	532	Keep same mix of users, but through pricing and promotion programs reduce the number of daytime workers by 150± (to NAAA lot)	532	AT (Gr., B, Y, G), SS, NB	
	60 West Street Garage	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	172	No change, however the number of shift workers should decline due to more parking at Hillman, Gotts, and Compromise.	172	AT (Gr., B, Y, G), SS, NB	
	South Street Lot	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	50	No change, however the number of shift workers should decline due to more parking at Hillman, Gotts, and Compromise.	50	AT (Gr., B, Y, G), SS, NB	
	Yacht Basin Street Lot	Overnight visitors, day tripper tourists, daytime workers, shift workers	80		80	AT (Gr., B, Y)	
	Compromise Lot	Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors	52	<i>Change the lot operation to accommodate shift workers using an attendant to increase total parking by approximately 40%.</i>	70	AT (Gr., B, Y)	
	Larkin Street Lot	Daytime workers, shift workers, residents	57	No change, however the number of shift workers should decline due to more parking at Hillman, Gotts, and Compromise.	57	AT (Gr., B, Y, G)	
	Bladen Street Garage		0	Daytime workers	831	AT (G), SS	
	District 1 (Meters/ADA)	Short-term patrons, shift workers, deliveries	56	No change, however the number of shift workers should decline due to more parking at Hillman, Gotts, and Compromise.	56	NB, AT/SS (variable)	
	District 2 (Meters/ADA)	Short-term patrons, shift workers, deliveries	170	No change, however the number of shift workers should decline due to more parking at Hillman, Gotts, and Compromise.	170	AT/SS/NB (variable)	
District 1 (Residential)	Residents, overnight visitors	459	No change.	459	NB, AT/SS (variable)		

Table 3 – Existing and Potential Parking

Facilities and Services							Comments
Facilities	User Groups Served	Existing Spaces	Proposed User Groups Served	Future Spaces	Transit Services		
<b>Downtown</b>	District 2 (Residential)	Residents, overnight visitors	152	No change.	152	AT/SS/NB (variable)	
	Docks Area (Meters/ADA)	Short-term patrons, shift workers, deliveries	291	No change, however the number of shift workers should decline due to more parking at Hillman, Gotts, and Compromise.	291	NB, AT (variable)	
	Downtown Off Street	Residents, shift workers, overnight visitors	514	No change, however the number of shift workers should decline due to more parking at Hillman, Gotts, and Compromise.	514	AT/SS/NB (variable)	
	<b>Total Public Spaces</b>		<b>3,866</b>		<b>4,715</b>		
	USNA	Faculty/Staff/Midshipmen	3,482		3,482	NB	
Visitors		167		167	NB		
<b>Parole GMA</b>	Private parking for businesses		Not known	<i>Daytime workers, short/long-term patrons, shift workers, day tripper, overnight visitors</i>	5,000	AT (GR, B, G, R)	The primary question relates to the Parole Center and the degree to which it could support mixed-use (commercial/residential), local transit, commuter transit, inter-city bus, and a visitor center.
	<i>Annapolis Towne Center at Parole</i>		0	<i>Daytime workers, short/long-term patrons, shift workers</i>	5,400	AT (GR, B, G, R), MTA, GH	
	<b>New Public Spaces</b>				<b>10,400</b>		
<b>Truman P&amp;R</b>	State Commuter Parking Facility	Outbound commuters	466	Outbound commuters	600	MTA, AT (Gr, B)	Given the growth in outbound commuter use, this lot may continue to be needed even if the Parole area includes a transit center.
	<b>Total Public Spaces</b>		<b>466</b>		<b>600</b>		
<b>NAAA Lot</b>	USNAAA Stadium	Daytime workers (leases to State of Maryland)	800	Daytime workers (leases to State of Maryland) reduced to approximately 500.	500	MTA, AT (G, C-40), SS, NB	A continuation of the basic parking role played by this facility should continue and the general level of use should not significantly increase. Walking and bicycle access should be improved and encouraged. Direct access from Rowe Boulevard and a visitor center should be evaluated.
		Daytime workers (daily/monthly parkers)	290	Daytime workers other than State workers increased by a corresponding amount primarily by moving from Hillman and Gotts.	590	MTA, AT (G, C-40), SS, NB	
		Outbound commuters	110	No change, however, outbound commuters arriving on foot or by bicycle may raise the total number of outbound commuters riding MTA.	110	MTA, AT (G, C-40), SS, NB	
		Long-term patrons, day tripper tourists, special events	2,600	No change.	2,600	MTA, AT (G, C-40), SS, NB	
	<b>Total Public Spaces</b>		<b>3,800</b>		<b>3,800</b>		

Table 3 – Existing and Potential Parking

Facilities and Services							
	Facilities	User Groups Served	Existing Spaces	Proposed User Groups Served	Future Spaces	Transit Services	Comments
<b>Inner West Street</b>	West Garrett Garage	Short/long-term patrons, day tripper tourists, daytime workers, shift workers	288	No change.	288	AT (Gr, B, Y, G, R), MTA	The "Navigate Annapolis" signage will reduce reliance on NAAA parking by directing motorists to these alternative public parking facilities. Bicycle parking should be provided to encourage outbound commuters and other transit users to come to these locations.
	Knighton Parking Facility	Short/long-term patrons, day tripper tourists, daytime workers, shift workers	270	No change.	270	AT (Gr, B, Y, G), MTA	
	<i>Park Place</i>		<i>0</i>	<i>Short/long-term patrons, day tripper tourists, daytime workers, shift workers</i>	<i>1,396</i>	AT (Gr, B, Y, G, R), MTA	
	<b>Total Public Spaces</b>		<b>588</b>		<b>1,954</b>		
<b>Outer West Street</b>	Private parking for businesses	Daytime workers, short-term patrons, shift workers	Not known	No change.		AT (Gr, B, R), MTA	Future mixed-use development should be designed and developed to encourage residents and businesses to use transit (AT and MTA).
	Total Spaces						

**NOTES**

Proposed facilities are shown in *italic*.

**Transit service includes:**

**AT** - Annapolis Transit routes: Gr (Green), B (Brown), G (Gold), Y (Yellow), R (Red), and C-40.

**SS** - State Shuttle.

**NB** - Navy Blue Shuttle.

**MTA** - Maryland Transit Administration commuter bus.

**GH** - Greyhound

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### ***III. C. (7) Enhance Parking Security***

#### **Purpose**

To provide a variety of coordinated security improvements for the benefit and safety of users parking downtown, especially in the late evening.

#### **Description**

As recommended in the Action Team Report, a security firm(s), licensed by the State of Maryland, should be contracted to provide security for the downtown garages. This service should also be provided for the NAAA lot. If the DAPTA concept is implemented, it may be more cost-effective for all security needs to be fulfilled by one contract through this coordinating body.

One of the important security issues relates to shift workers returning to their cars in the late evening. A potential advantage of having relatively few parking facilities in the downtown for shift workers is the option of providing enhanced security for walking routes between businesses and parking. Enhanced lighting and foot patrols could provide the requisite security without needing to provide employee transportation to their cars.

*Type: Program*

*Timing: Short- and long-term*

*Agency: City of Annapolis, Anne Arundel County, and NAAA.*

*Estimated cost: Not determined.*

### ***III. C. (8) Monitor and Adjust the Parking Management Program***

#### **Purpose**

To continuously monitor parking usage and make adjustments to the other programs recommended in the section to achieve the desired results.

#### **Description**

This would ideally be under the guidance of a DAPTA-type coordinating body. The immediate action focus of the monitoring would be to understand the affect of the preceding seven recommendations. In particular, the affect of parking pricing on parking behavior (e.g., availability of short-term and shift worker parking) would be an important focus of attention. If the desired results, as articulated in the overall parking policy, are not being realized, adjustments to existing programs would then be implemented as short-term actions.

*Type: Program*

*Timing: Short- and long-term*

*Agency: City of Annapolis, Anne Arundel County, and ARTMA .*

*Estimated cost: Staff time.*

### ***III. C. (9) Bicycle Parking Facilities***

#### **Purpose**

To encourage bicycling by providing secure and convenient bicycle parking facilities.

#### **Description**

Bicycle parking is another important issue. The Anne Arundel County *Pedestrian and Bicycle Master Plan* calls for amending the County ordinances to require bike parking. The proposed City Code amendments (O-01-04) require bicycle parking (1 space/20 required automobile spaces, plus 1 space for every 30 additional automobile spaces) for nonresidential uses. The City and County should amend their zoning ordinances to require bicycle parking as a condition of development approval. The appendix of this Plan includes some sample ordinances, which provide good examples with which to start. Important bicycle parking elements include:

- Required numbers of parking spaces consistent with expected use.
- Requirements for on-site bicycle racks with new development and significant redevelopment.
- Convenient and visible parking facilities near building entrances.
- Secure bicycle parking in garages and lots (including park-and-ride) by utilizing bicycle lockers and/or racks located near the parking attendant.
- Rack design and installation standards that offer suitable access, support, and ability to use common bike locks.
- Proper installation to ensure access and usefulness of the racks.
- Long-term parking in secure and preferably weather-protected facilities, especially for Truman, NAAA, and other commuter lots.

*Type: Program*

*Timing: Short- and long-term*

*Agency: City of Annapolis and Anne Arundel County staff.*

*Estimated cost: Variable, but bicycle racks generally cost less than \$75 per space, making them a minor development expenditure.*

<b>III. Maximize Effectiveness of Parking Facilities</b>	<b>Type</b>			<b>Timing</b>			<b>Agency</b>				
	Policy	Program	Project	Immediate	Short-term	Long-term	City	County	State	ARTMA	USNA
<b>Recommendations</b>											
III. C. (1) Establishing an area parking coordination body											
III. C. (2) Establishing an area parking policy											
III. C. (3) Integrating pricing and incentives for transit and parking											
III. C. (4) Increasing parking efficiencies											
III. C. (5) Identifying a visitor center and parking location											
III. C. (6) Enhancing the NAAA lot for downtown parking											
III. C. (7) Enhancing parking security											
III. C. (8) Monitoring and adjusting the parking management program											
III. C. (9) Bicycle parking facilities											

### III. D. Analysis – Benefit to User Groups

The key to the parking management strategy is to balance parking needs among user groups. The primary shift for users will be the incentives provided to daytime workers in downtown to either park in the NAAA lot and take a convenient shuttle into downtown or to take an alternative mode to work. The 800-space Bladen Garage will provide significant potential to encourage daytime workers to use the NAAA lot by offering cost savings and convenient shuttle service. The proper “blend” of parking fees can be adjusted to promote the desired parking behavior. This is expected to provide at least several hundred additional parking spaces for short and long-term patrons and shift workers in the downtown, which in turn is expected to relieve pressure for nonresidents to park in neighborhoods.

### III. E. Consistency with the Vision Themes

#### III. E. (1) Specific Mobility Themes

- Maximize the connectivity and ease of access for user groups via all modes of travel (e.g., pedestrian, bicycle, auto, transit, and water taxi) between activity centers.**  
 The parking management component of this Plan is not applicable to this theme.
- Improve the operational efficiency of transportation circulation patterns within activity centers.**

Reduced automobile traffic during peak times in the morning caused by daytime workers arriving and leaving at the same time will reduce rush hour congestion in the downtown.

- **Realize maximum effectiveness of all existing and future public and private parking facilities for all user groups.**

The creation of new parking spaces for all users coupled with pricing policies to promote parking availability for all users, will allow equal access to the parking available in the study area. This is a key objective of this Plan.

### ***III. E. (2) General Mobility Themes***

- **Provide appropriate access and mobility for user groups at appropriate times.**

The currently planned parking facility projects (Bladen, Knighton, and Park Place) will essentially encourage more driving, however, the remaining elements of the proposed parking management strategy are intended to encourage multi-modal trips involving transit, walking, and bicycling.

- **Increase the overall safety, comfort, and convenience of transportation facilities for all user groups.**

The enhancements to parking security will be beneficial for all user groups and will be of special importance to shift workers.

- **Provide recommended actions with realistic opportunities for implementation.**

The key to successful implementation will be made possible largely through the coordinated intergovernmental approach suggested here. This Plan plus the detailed evaluation of the multi-modal center, visitor center, outbound commuter accommodation, and equitable parking availability for all users will support this theme.

### ***III. E. (3) Quality of Life Themes***

Parking issues, such as shift workers and short-term patrons searching for a space and residents having neighborhood parking used by others, will be able to come a long way toward resolution with the implementation of the preceding recommendations.

## **IV. IMPROVE MOBILITY, OVERALL SAFETY, COMFORT, AND CONVENIENCE FOR ALL USER GROUPS**

### **IV. A. Introduction**

The preceding three groups of planned actions and recommendations primarily focus on increasing the capacity or level of service for a variety of transportation modes. While these policies, programs, and projects are critical for the region's transportation system to function appropriately, the modification of travel behaviors is the final key element for a successful transportation strategy in the study area. The national and local trends show increasing congestion caused not only because of rising population but by more miles driven per individual. This rising tide of automobile use cannot continue to be sustained through road system improvements. Even if funding was available to build our way out of congestion, the associated impacts on the area's quality of life, personal health, and the environment would prove to be unacceptable and inconsistent with the Quality of Life Themes in this Plan.

Reducing the amount of automobile use in the study area will take more than simply providing other travel alternatives. It will require a concerted effort to work with area residents and businesses to shift travel behaviors from the automobile to walking, bicycling, and transit. This does not mean that automobile use would drastically decline or that people's mobility would be compromised. The residents would be asked evaluate all of their weekly travel needs for work, errands, appointments, and entertainment and see which ones could be accomplished using another mode. The transportation system user groups could determine the best ways to meet their respective travel needs as daytime or shift workers, outbound commuters, patrons, visitors, etc.

### **IV. B. Planned Actions**

#### ***IV. B. (1) Annapolis Mixed-Use Areas***

The Annapolis Comprehensive Plan calls for a combination of higher density residential and commercial development in several "mixed-use centers". This combination of land use activities in close proximity can create vibrant community centers, which, if planned properly, are pedestrian-oriented. This land use pattern encourages walking and transit while reducing the need to travel by automobile.

#### ***IV. B. (2) Anne Arundel County Activity Centers***

The Anne Arundel County Annapolis Neck Small Area Plan calls for focused "activity centers" in Parole and other areas located on major streets. These areas generally coincide with the "mixed-use centers" identified by the City. As in the City's plan, these centers are intended for a mixture of residential and commercial development.

#### ***IV. B. (3) Replace/Provide Transit Shelters***

Annapolis Transit (AT) initiated a project to replace and/or provide bus shelters along all of its routes. This project is proceeding, and it is planned to continue through 2008 when all of the existing shelters will be replaced featuring weather protection, seating, and lighting.

## IV. C. Recommendations

These recommendations are designed to support the planned and recommended actions noted above through programs that encourage residents to modify their travel behavior to be less auto-oriented. In addition, design recommendations are included to enhance the pedestrian experience and encourage more walking and transit use. A summary table of the recommendations is on page 126.

### ***IV. C. (1) Determine TravelSmart Applicability***

#### **Purpose**

To employ a proven program designed to change travel behavior to be less auto-oriented.

#### **Description**

TravelSmart® is a social marketing program designed to encourage “environmentally friendly” modes of transportation, including walking, bicycling, transit, and car/van pooling. The program originated in Australia, and it is now being applied in other cities throughout the world. It utilizes an individualized marketing approach, which is focused on individuals and households indicating an interest or willingness to consider transportation options to the automobile for some of their weekly trips. This technique has demonstrated its effectiveness accomplishing sustainable change in travel behavior.

TravelSmart is applied to:

- Inform, motivate, and empower individuals in a way that achieves sustained change in travel behavior.
- Look at the transportation system from the user's perspective, rather than a transportation systems/planning/logistics view.
- Focus on behavioral change rather than simply raising community awareness.

Portland, Oregon recently contracted with a consultant, Socialdata, to conduct a pilot program in two neighborhoods. The two neighborhoods selected have similar characteristics to many neighborhoods in the study area with:

- Predominantly low density residential use;
- Prevalent auto-oriented travel behavior;
- Bus service that only covers major routes during the day and early evening; and
- Streets often lacking sidewalks.

This pilot project involved four steps:

1. An initial survey to a sample of over 700 households to determine current travel habits and to identify the level of interest to consider using alternative modes to the automobile.
2. An individualized marketing campaign focusing on those who expressed an interest in getting information and assistance about traveling using alternative modes. Those who are not interested are not contacted. The individualized marketing includes home visits by a person offering information and assistance about options that are specifically relevant for each individual.
3. A mail-back survey of travel behavior following the marketing effort.

4. A second mail-back survey of travel behavior to determine if the changes in travel behavior are being sustained.

The key ingredient is focusing the marketing effort on individuals who are most receptive to change, rather than blanket marketing campaigns, which often do not have significant impacts. The programs conducted to date show that around 40% (41% in Portland) of the people contacted in the initial survey were interested in considering alternatives, 20-40% were not interested (33% in Portland), and 20-30% were already regularly using alternatives (26% in Portland) for at least some of their trips.

The Portland pilot project resulted in 9% less car travel and an 8% increase in walking, bicycling, and public transit. This represented a 12% reduction in vehicle miles traveled, over 600,000 miles annually. Because of this success, Portland will initiate a second program in another neighborhood this summer, as well as planning for additional projects in metropolitan area.

The City, County, State, ARTMA, and USNA should consider the potential of the program and identify how it might be used to the greatest advantage in the study area. The experience of Portland and other cities could be evaluated to determine the best way to proceed. ARTMA would potentially be the most logical lead agency in this effort.

*Type: Program*

*Timing: Short-term*

*Agency: ARTMA, City of Annapolis, and Anne Arundel County staff.*

*Estimated cost: Staff time for agency participants.*

#### ***IV. C. (2) Conduct a TravelSmart Pilot Study***

##### **Purpose**

To use the TravelSmart program in a focused portion of the study area to measure the performance of the program and ascertain the level of success and what could be improved upon for future applications.

##### **Description**

Assuming the preceding evaluation leads to a conclusion that a TravelSmart program should be conducted, the agencies should identify a pilot study area. This might be conducted concurrently with the introduction of additional transportation services, such as jitneys proposed during the focus interviews.

*Type: Program*

*Timing: Short-term*

*Agency: ARTMA, City of Annapolis, and Anne Arundel County staff.*

*Estimated cost: Approximately \$150,000.*

#### ***IV. C. (3) Conduct an Area-Wide TravelSmart Program***

##### **Purpose**

To conduct an area-wide TravelSmart program to promote less auto-oriented travel behavior throughout the study area.

##### **Description**

Assuming the TravelSmart pilot program proves to be successful, an area-wide program should be implemented. This follow-up effort should be initiated to take advantage of the momentum and public interest in the pilot study as well as any lessons learned about which particular marketing techniques or programs proved to be most effective.

*Type: Program*

*Timing: Short- and long-term*

*Agency: ARTMA, City of Annapolis, and Anne Arundel County staff.*

*Estimated cost: Depends upon the area and scope, but a larger scale area could have a cost in the vicinity of \$500,000.*

#### ***IV. C. (4) Institute a Transportation Demand Management Plan***

##### **Purpose**

To institute a transportation demand management program that would enhance the success of the TravelSmart program by providing transportation alternatives to automobile use or driving automobiles during peak congestion periods of the day.

##### **Description**

As noted in the user surveys, the vast majority of the work force in the study area arrives and departs on similar schedules. This creates tremendous pressure on the existing street system to accommodate the morning and afternoon peak travel periods. Because the feasibility of simply building more travel lanes and other capacity improvements is extremely limited, the City, County, State, U.S. Naval Academy, and local employers must look at ways to reduce the demands placed on the street system.

Transportation demand management (TDM) provides a means to remove vehicle trips from the roadway network during peak travel demand periods. TDM measures applied on a regional basis can be an effective tool in reducing vehicle miles traveled. TDM is policy and management rather than concrete and asphalt. TDM includes transit, peak spreading, and trip reduction programs. The Annapolis area has several TDM programs in place and has an opportunity to enhance and improve the existing programs. The TDM plan needs to continue to serve existing users and enlist new program participants.

The City and County should form a TDM Task Force comprised of public and private sector representatives to develop a TDM plan. The TDM plan needs to continue to serve existing users and enlist new program participants. The following are types of TDM measures to consider for the TDM plan:

1. ***Transit TDMs*** – typically managed by public agencies or private groups. Service fees usually charged and applied to offset operational expenses. Examples of Transit TDMs are: ride-sharing, guaranteed ride home program, car-sharing, high occupancy vehicle (HOV) priority, taxi service improvements, additional shuttle services, and improvements to mass transit services.

2. **Peak Spreading TDMs** – typically requires employer participation. Examples are staggered work shifts and flexible work hours.
3. **Trip Reduction TDMs** – Examples are telecommuting, bicycle and pedestrian improvements, and zoning/land use controls.

The TDM plan should coordinate the work of the five agencies (City, County, State, ARTMA, USNA) should work together to establish a program that would stagger work hours, which would help diminish the rush hour demands on the system. The majority of daytime workers in the downtown are city, county, state, and federal employees who arrive between 7:30 and 9:00 a.m. and depart between 3:30 and 5:00 p.m. Therefore, an initial staggered work hours program is recommended for the downtown. A coordinated effort among the government agencies to stage work hours would substantially reduce traffic spikes in the morning and afternoon.

Consistent with existing land use plans, the TDM plan should encourage development that effectively mixes land uses to reduce vehicle trip generation and to be consistent with the Maryland Smart Growth Strategies program. Mixed-use development tends to bring complementary uses closer together, making auto trips unnecessary. These plans should include improved pedestrian, transit, and bicycle facilities and circulation to support greater use of alternative modes.

The TDM plan should encourage the County and City to develop consistent conditions for land use approval that require all future employment related to land use developments and redevelopments to agree to reduce peak hour trip making, through individual or collective TDM efforts. For example, measures which are appropriate for site planning such as close-in parking for carpools, bicycle parking, shower facilities and convenient transit stops should be included as City and County plan policy and ordinance considerations in the design review process.

The TDM plan should be implemented in coordination with the TravelSmart program to help maximize effectiveness of each. It should also include a program to focus on modifying the travel behavior of visitors coming to Annapolis for weekend events, Navy football game days, and summer events is recommended and would be beneficial to the area. This system could divert visitors from congested areas, particularly in the downtown area, and direct them to outlying parking locations (including the proposed Bladen Garage during off-peak hours and weekends) and further development of the shuttle bus system.

Once this program is operational, the TDM Task Force should consider involving downtown businesses in further reducing peak hour congestion. This program could also be used as a model for the County to sponsor a staged work hour program in Parole.

*Type: Program*

*Timing: Short- and long-term*

*Agency: City of Annapolis and Anne Arundel County staff and ARTMA.*

*Estimated cost: Requirements of the TDM will need to be exacted as conditions of development. Costs could range from \$50,000 to \$100,000 per year. Private business will need to support employee trip reduction programs.*

#### ***IV. C. (5) Street Typology Guidelines for Street Design***

##### **Purpose**

To provide a design guideline for streets that allow a better balance between vehicle movement and the pedestrian environment.

##### **Description**

An important element for any program to encourage walking relates to the design of the street and built environment, which about the sidewalk. It is not sufficient to simply provide a sidewalk. The walking experience must be pleasurable in order to promote this mode of travel. For example, sidewalks located with auto traffic on one side and expansive parking on the other, will only attract pedestrians who have to be there and not people who want to be there.

Street typology guidelines are proposed as a way to set policy direction for City, County, and State decisions regarding street and sidewalk standards, design decisions for specific street improvements, and urban design treatments for new development. The Street Typology Guidelines in Appendix D offer a preliminary framework and design principles for the City, County, and State to consider. The guidelines describe the important design elements for the:

- **Roadway** including travel lanes, bike lanes, medians, and parking
- **Sidewalk** including the sidewalk, street trees, landscaping, and amenities
- **Building edge** including the building fronts and landscaping

The guidelines discuss the importance of the three elements and then show how they should be treated in commercial, mixed-use, and residential situations. The key to the guidelines is to provide a balance of facilities and improvements in the street, pedestrian, and building zones that support all modes of travel.

Their significance cuts across many elements of the Plan, including most especially, pedestrian safety and convenience, bicycling safety and convenience, the impact of transportation improvements on surrounding residential and commercial neighborhoods, the quality of experience provided by the street environment and the types of uses it will support, the speed and safety of auto traffic, the success and viability of mixed use communities. The design concepts embedded in the street typology provide critical support for several of the fundamental quality of life themes for this Plan in the way they will help create viable commercial streetscapes and thereby enhance the prospects for community acceptance of proposed transportation improvements. Although these design standards may be most useful in City “mixed-use centers” and County “activity centers”, they will also help create more livable, pedestrian-oriented streets throughout the study area.

It should be recognized that streets are often the most significant public spaces in an urban environment and that, especially in mixed-use centers, they are expected to provide a setting for diverse activities – successful street level retail, including window shopping and cafes, ample room for walking and wheel chairs, appropriate facilities for bicycles, deliveries, etc. As the public realm shrinks, the importance of streets as public spaces increases.

Without the design element being successfully addressed, transportation objectives will be compromised as will those related to multiple uses of the street environment.

Moreover, the public acceptance of transportation facilities can be strongly influenced by the quality of attention given to design and the opportunities provided for diverse stakeholders to participate in the design review process.

*Type: Policy development pertaining to any comprehensive plan and ordinance amendments to develop and adopt street typology guidelines and an on-going program to implement it over time.*

*Timing: Short- and long-term*

*Agency: City of Annapolis and Anne Arundel County staff in coordination with MDOT.*

*Estimated cost: Staff time.*

#### ***IV. C. (6) Urban Design***

##### **Purpose**

To encourage the application of sound urban design principles to enhance the pedestrian environment and encourage walking and transit use.

##### **Description**

Although urban design is beyond the scope of this document, it is important to recognize that truly successful execution of the street typology guidelines will depend upon sound urban design principles being applied in the design of the land uses adjacent to the street. Site design, building orientation, architectural character, and public spaces must be pedestrian-oriented in their scale and design.

Public streets are often the most significant public spaces in an urban environment and that, especially in mixed-use centers, they are expected to provide a setting for diverse activities – successful street level retail, including window shopping and cafes, ample room for walking and wheel chairs, appropriate facilities for bicycles, deliveries, etc. As the public realm shrinks, the importance of streets as public spaces increases.

Application of sound urban design principles is necessary to fully support the mobility and quality of life themes of this Plan. Public acceptance of transportation facilities can be strongly influenced by the quality of attention given to design and the opportunities provided for diverse stakeholders to participate in the design review process. Land use and urban design are beyond the purview are beyond the scope of this Plan, however, several planned actions and recommendations, such as Parole Center, a visitor center, and NAAA lot improvements have associated land use and urban design issues, which must be addressed. Public participation in the design and use of these types of facilities will be a critical component to their acceptance and success.

*Type: Policy development pertaining to any comprehensive plan and ordinance amendments to encourage/require pedestrian and transit-oriented design, and an on-going program to implement it over time.*

*Timing: Short- and long-term*

*Agency: City of Annapolis and Anne Arundel County staff.*

*Estimated cost: Staff time.*

<b>Improve mobility, overall safety, comfort, and convenience for all user groups</b>	<b>Type</b>			<b>Timing</b>			<b>Agency</b>				
	Policy	Program	Project	Immediate	Short-term	Long-term	City	County	State	ARTMA	USNA
<b>Recommendations</b>											
IV. C. (1) Determine TravelSmart applicability											
IV. C. (2) Conduct a pilot study											
IV. C. (3) Conduct an area-wide TravelSmart program											
IV. C. (4) Institute a TDM plan											
IV. C. (5) Street typology guidelines for street design											
IV. C. (6) Urban design											

#### **IV. D. Anticipated Benefit to User Groups**

The recommendations focus on reducing automobile traffic through modification of travel behaviors and by making walking, transit, and bicycling more attractive options. Because congestion is the most significant problem during the morning and evening peaks as well as some special events, the planned actions will provide more convenient and efficient transit service, which will be beneficial to varying degrees to almost all user groups. Deliveries will be unaffected and shift workers who leave work later in the evening will also not benefit from these improvements. The enhanced transit will provide a viable alternative to the automobile for some individuals, helping minimize congestion for those who continue to drive.

The establishment of mixed-use areas tends to reduce the total number of automobile trips because having a mix of uses in close proximity removes some of the need for car trips – especially errands. This benefits all users by providing more transportation choices and less congestion from fewer automobile trips. In addition, the primary beneficiaries will be short-term patrons who will be able to satisfy some of their needs by walking from their residence to the corner store or restaurant.

Making the walking easier and more enjoyable will benefit all user groups. Perhaps the greatest benefit will be for short and long-term patrons, day tripper tourists, and overnight visitors because an interconnected system of well-designed sidewalks with proper directional signs, will be of the greatest use to these groups which are probably the most likely to walk (at least after the car is parked).

#### **IV. E. Consistency with the Vision Themes**

##### ***IV. E. (1) Specific Mobility Themes***

- **Maximize the connectivity and ease of access for user groups via all modes of travel (e.g., pedestrian, bicycle, auto, transit, and water taxi) between activity centers.**

Modification of travel behavior by either reducing the total number of automobile trips or encouraging driving during off-peak hours will have a very beneficial impact on mobility especially by alleviating congestion during peak morning and evening travel periods.

- **Improve the operational efficiency of transportation circulation patterns within activity centers.**

The street typology and urban design recommendations above are intended to help in the successful implementation of the mixed-use/activity center designations in the City and County plans. The street typology guidelines in particular are geared toward enhanced mobility for pedestrians and transit users. The primary mobility enhancement is creating more compact mixed-use centers where distances between destinations are reduced to the point that walking is the quickest way to make some trips.

- **Realize maximum effectiveness of all existing and future public and private parking facilities for all user groups.**

The planned actions and recommendations in this section do not directly relate to parking issues.

#### ***IV. E. (2) General Mobility Themes***

- **Provide appropriate access and mobility for user groups at appropriate times.**

Transit already makes an important contribution to the transportation choices for residents. The proposed enhancements will continue to make transit more accessible and convenient. Mixed-use development primarily expands modes choices by making walking easier and more pleasurable. Mixed-use development primarily expands modes choices by making walking easier. Because development is more concentrated with more pedestrian activity, transit also becomes more accessible. Development of the mix-use areas in the City and County are located along major transit routes for both AT and MTA. Higher density residential development will allow improved transit access for all users. MTA service through the planned mixed-use areas would allow outbound commuters to get directly on the bus without needing to drive first to a park-and-ride lot.

- **Increase the overall safety, comfort, and convenience of transportation facilities for all user groups.**

The completion of the shelter program and the creation of better facilities to serve as transfer points will improve the level of safety for all transit users. The street typology guidelines in combination with sound urban design principles will enhance safety for all modes by creating properly designed facilities for pedestrians and bicyclists and by moderating traffic speeds through these centers. Mixed-use centers tend to create safer environments for walking and transit because there is more activity during much of the day.

- **Provide recommended actions with realistic opportunities for implementation.**

The past performance of AT and MTA in serving increasing numbers of riders provides a solid performance foundation for continued success. Adopted plans support mixed-use centers, good urban design, and encouraging travel modes besides the automobile. The proposed travel behavior programs and the street typology guidelines will further support City and County objectives in this area. Additional cost would be minimal because these recommendations call for different design approaches, which are not necessarily more expensive to execute.

The City has already had success with Inner West Street area and it should be able to build on that success in other portions of the study area. Much of the new development in the study area is expected to result from the redevelopment of property in these mixed use or activity centers.

#### ***IV. E. (3) Quality of Life Themes***

Virtually any healthy urban area has excellent transit. Increased transit use coupled with reduce automobile use will help reduce congestion and minimize air quality impacts. Improved transportation access for individuals who do not drive is an important aspect to their quality of life. Mixed-use development enhances the quality of life in many ways including the creation of vibrant neighborhoods and support for walking, bicycling, and transit.

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## OVERALL BENEFITS FOR USER GROUPS

The end result of the recommendations is to provide balanced benefits for each of the nine user groups. The anticipated affect of the entire recommendations package is summarized from the standpoint of each of the nine user groups. These summaries provide a generalized description about how the various trip experiences for the user groups are expected to improve after the planned and proposed actions are implemented. This is followed by references to key planned actions and recommendations. The planned actions and recommendations will generally be beneficial to some degree for all user groups. The references highlight only the actions and recommendations that are of particular importance to each user groups.

### DAYTIME WORKERS

#### Trip Benefits

##### *Drive and Drive/Walk Trips*

For those driving to work (with or without a short walk from parking to the work place) in the study area, the commutes will generally be moderately improved through a number of capacity enhancements and management actions, including:

- Capacity and intersection improvements focusing on the identified trouble spots associated with Forest Drive/Aris T. Allen, West Street, Riva Road, Jennifer, Rowe Boulevard, and interchanges with Rt. 50/301.
- A program to stagger daytime work hours for government employees, especially those working in the downtown and Parole, which will allow employees to arrive and depart during off-peak times, thereby reducing commute times.

Parking all day in the downtown will be more expensive relative to other alternatives, thereby encouraging some daytime workers to utilize outlying parking in the NAAA lot (or switch to transit, walking, or bicycling).

##### *Drive/Transit/Walk*

Daytime workers in downtown will be able to take advantage of an incentive program to utilize outlying daytime parking at the NAAA lot. If downtown employers cover employees parking cost, it will generally cover parking and transit/shuttle in the NAAA lot, leaving the employee to opt for the “free” outlying parking or continuing to park downtown and paying the difference. This should reduce the traffic in downtown during the morning and evening peaks and leave more parking available for other user groups.

The transit and shuttle service between the NAAA lot and downtown will be improved with security personnel in the lot, improved lighting, new shelters, and real time shuttle and bus information. The short headways during the peak morning and evening hours will make this a less expensive alternative to downtown parking with similar commute times to driving into downtown.

### ***Walk/Transit/Walk***

This travel option has become increasingly convenient and comfortable because Annapolis Transit has completed installation of bus shelters along its routes and the City and County have been implementing a coordinated program to address sidewalk deficiencies along major streets, with special attention being paid to bus stop access.

The redevelopment in the Parole area, including an intermodal center for Annapolis Transit, MTA, and regional bus companies, will greatly enhanced transit access in this portion of the study area. This center, with its internal street system and pedestrian connections to the adjoining neighborhoods, will provide a new way for Parole residents to simply walk to the multi-modal center to catch a bus to downtown and a variety of other destinations.

The mixed-use centers proposed in City and County plans will also placed more residents within an easy walk to a transit stop. Attention should be given to creating pleasant pedestrian areas that encourage people to leave the car behind. Residents who work locally will have a greatly simplified commute without a car.

### ***Walk/Bicycle***

The focused sidewalk improvement program noted above will made walking, particularly some of the area's busier streets safer and more enjoyable. In particular, mobility impaired individuals will find it easier to navigate.

The City/County bicycle route map will encourage more bicycling by aiding trip planning to work and other destinations, which suit their abilities and preferences. When arriving at the workplace, secure long-term bicycle parking will available as well facilities to change and/or freshen up before work.

## **Important Actions and Recommendations**

The important planned actions and recommendations are:

<b>Planned Actions and Recommendations</b>	<b>Page #</b>
I. C. (1) Coordinate traffic signals	78
I. C. (2) Comprehensive traffic studies	78
II. C. (2) Provide real time information signs	91
II. C. (3) Reduced transit headways	92
II. C. (4) Annapolis area transfer point	92
III. C. (6) Enhance the NAAA lot for downtown parking	107
IV. C. (3) Conduct an area-wide TravelSmart program	122
IV. C. (4) Institute a TDM plan	122

## **SHIFT WORKERS**

### **Trip Benefits**

#### ***Drive and Drive/Walk Trips***

For those driving to work (with or without a short walk from parking to the work place) in the study area, the commutes will typically be about the same because traffic congestion and delay are not significant concerns to this group, which travels during off-peak hours.

Parking all day in the downtown will be managed and priced to make more parking available for shift workers when they arrive later in the morning or afternoon. Many of the shift workers employed in the downtown will have two parking facilities, which are managed to accommodate them. The Green Street (Board of Education) Lot will be reserved for downtown employees with attendant parking. It is within a short walk of many of the establishments, which are open in the afternoon and evening hours. Gotts and Whitmore Garages will have a section devoted for the same purpose for the employees in the Inner West Street area.

Not only will parking available, but measures will be taken to enhance security through lighting and security personnel in and near the parking facilities during the evening. This will make parking easier to find for shift workers. Shift workers will no longer need to go into adjoining neighborhoods or use on-street metered parking.

#### ***Drive/Transit/Walk***

This travel option is not expected to be of much help shift workers because bus service will generally continue to end at around 7:00 p.m., leaving them with no convenient option to make the return trip home in the evening. Because of the cost to provide transit during the evening (and late evening) hours, expanded evening transit service is not proposed.

#### ***Walk/Transit/Walk***

As with the previous travel option, trips involving transit will not be viable for shift workers who leave work after 7:00 p.m. Providing expanded service hours, especially into the late evening, would be cost-prohibitive.

#### ***Walk/Bicycle***

The focused sidewalk improvement program noted above will make walking, particularly some of the areas busier streets, safer and more enjoyable. In particular, mobility impaired individuals will find it easier to navigate.

The City/County bicycle route map will encourage more bicycling by aiding trip planning to work and other destinations, which suit their abilities and preferences. When arriving at the workplace, secure long-term bicycle parking will available as well facilities to change and/or freshen up before work.

## Important Actions and Recommendations

The important planned actions and recommendations are:

Planned Actions and Recommendations	Page #
II. B. (1-4) AT transit service improvements	89
II. C. (3) Reduced transit headways	92
III. C. (2) Establish an area-wide parking policy	103
III. C. (3) Integrate pricing and incentives for transit and downtown parking	103
III. C. (4) Increase parking efficiencies	105
III. C. (7) Enhance parking security	115

## OUTBOUND COMMUTERS

### Trip Benefits

#### *Drive and Drive/Walk Trips*

For those driving out of the area to work, the commutes will be aided by a number of enhancements and management actions, such as capacity and intersection improvements focusing on the identified trouble spots associated with Forest Drive/Aris T. Allen, West Street, Riva Road, Jennifer, Rowe Boulevard, and interchanges with Rt. 50/301. Commuters leaving or returning to the study area during peak morning and evening travel times will benefit not only from the above-mentioned improvements, but from the staggered work hours program implemented by many of the area employers to reduce peak hour traffic volumes.

#### *Drive/Transit/Walk*

Outbound commuters driving to a transit stop or park-and-ride will see this portion of their trip change as noted above. Those driving to a park-and-ride will have three primary choices with the Parole intermodal center, Harry Truman Lot, and the NAAA Lot. The first two will be much more appealing because parking will be free, whereas the NAAA lot, as well as other garages along West Street, will have a daily charge.

#### *Walk/Transit/Walk*

This travel option will become increasingly convenient and comfortable because Annapolis Transit will have completed installation of bus shelters along its routes and the City and County will be implementing a coordinated program to address sidewalk deficiencies along major streets, with special attention being paid to bus stop access.

The development of mixed-use centers along major transportation corridors, such as West Street and Forest Drive, will give more people the option of residing close to transit, thereby making this travel option very convenient and time efficient.

The redevelopment in the Parole area, including an intermodal center for Annapolis Transit, MTA, and regional bus companies, will greatly enhanced transit access in this portion of the study area. This center, with its internal street system and pedestrian connections to the adjoining neighborhoods will provide a new way for Parole residents to simply walk to the multi-modal center to catch a bus to downtown and a variety of other destinations.

While the NAAA lot is not intended to attract significant number of drive/transit/walk trips, it will be designed to encourage walking or bicycling to the site to catch a MTA or AT bus. The sidewalk system on the site and surrounding neighborhood will be completed to encourage walking.

***Walk/Bicycle***

The focused sidewalk improvement program noted above will make walking, particularly some of the areas busier streets, safer and more enjoyable. Because of the distances involved, bicyclists are expected to constitute the majority of outbound commuters traveling by non-motorized means.

**Important Actions and Recommendations**

The important planned actions and recommendations are:

<b>Planned Actions and Recommendations</b>	<b>Page #</b>
I. C. (1) Coordinate traffic signals	78
I. C. (2) Comprehensive traffic studies	79
II. C. (3) Reduced transit headways	92
II. C. (4) Annapolis area transfer point	92
II. C. (5) Systematic sidewalk repair and improvement program	93
II. C. (6) Interim bicycle safety improvements program	93
II. C. (7) Bicycle route enhancements	95
IV. C. (3) Conduct an area-wide TravelSmart program	122
IV. C. (4) Institute a TDM plan	122

**SHORT-TERM PATRONS**

**Trip Benefits**

***Drive and Drive/Walk Trips***

For those driving to conduct shopping, business, entertainment, and similar short visits in the study area, the automobile trip will typically be about the same because traffic congestion and delay are not significant concerns to this group, which travels primarily during off-peak hours, unless errands are combined with the commute to or from work.

Parking in the downtown will be managed and priced to make more short-term parking available for these patrons in City garages and on the street when they arrive later in the morning through the evening. Parking will be priced at a variable rate to encourage short-term use (generally 4 hours or less) and to discourage all-day parking by daytime downtown employees. This will make it easier for short-term patrons to find suitable parking located near their destinations.

Parking will be provided on-site for businesses, agencies, and other destinations in the rest of the study area. This parking will continue to be available for short-term patrons when they arrive.

### ***Drive/Transit/Walk***

Because of the high premium placed upon time efficiency and convenience, this trip type is not anticipated to be one taken by short-term patrons. If a trip begins by using a car, it is very unlikely that a short-term patron would then park at a transit stop to continue by bus and complete the trip by walking. The other trip types are far more efficient for a short-term patron.

### ***Walk/Transit/Walk***

This travel option will become increasingly convenient and comfortable because Annapolis Transit will complete installation of bus shelters along its routes and the City and County will implement a coordinated program to address sidewalk deficiencies along major streets, with special attention being paid to bus stop access.

This improved pedestrian access to the bus stop and the development of the planned mixed-use centers, combined with improved comfort provided by the shelters will make this trip type a more viable and popular option, especially for short-term patrons heading for downtown, Parole, and destinations along major streets where transit service is the most prevalent. Walking in the downtown will continue to be relatively easy with the existing sidewalk system. The most noticeable improvement to the walking environment to and from transit will be along major streets outside of the downtown, within Parole and other activity/mixed-use centers. This will enabled short-term patrons to efficiently complete some of their trips using transit. The redevelopment in the Parole area including a intermodal center for Annapolis Transit will greatly enhance transit access in this portion of the study area. This center, with its internal street system and pedestrian connections to the adjoining neighborhoods provides a new way for Parole residents to simply walk to the multi-modal center to catch a bus to downtown and a variety of other destinations.

### ***Walk/Bicycle***

The focused sidewalk improvement program noted above will make walking, particularly some of the areas busier streets, safer and more enjoyable. In particular, mobility impaired individuals will find it easier to navigate.

The City/County bicycle route map will encourage more bicycling because short-term patrons will be aided in planning routes to reach destinations by bicycle in a manner,

which suits their abilities and preferences. Secure short-term bicycle parking will be available near building entrances.

## Important Actions and Recommendations

The important planned actions and recommendations are:

Planned Actions and Recommendations	Page #
II. B. (1-4) AT transit service improvements	89
II. C. (3) Reduced transit headways	92
II. C. (5) Systematic sidewalk repair and improvement program	93
III. C. (2) Establish an area-wide parking policy	103
III. C. (3) Integrate pricing and incentives for transit and downtown parking	103
III. C. (4) Increase parking efficiencies	105
III. C. (7) Enhance parking security	115

## LONG-TERM PATRONS

### Trip Benefits

#### *Drive and Drive/Walk Trips*

The driving experience for this group will not be significantly different from today, because traffic congestion and delay are not significant concerns to this group, which travels primarily during off-peak hours.

Parking in the downtown is expected to be easier to find, especially in parking garages, because of management and pricing to make more parking available for these patrons in City garages. Parking will be priced so that the first four hours are significantly lower rate than parking beyond four hours. This will make it easier for long-term patrons to find suitable parking located near their destinations. However, the slightly higher parking cost in the downtown will encourage some long-term patrons to use an alternative to an automobile for these trips.

Parking will be provided on-site for businesses, agencies, and other destinations in the rest of the study area. This parking will continue to be available for long-term patrons when they arrive.

#### *Drive/Transit/Walk*

Because time efficiency and convenience are important, this trip type is not anticipated to be a trip taken by long-term patrons. If a trip begins by using a car, it is very unlikely that a long-term patron would then park at a transit stop to continue by bus and complete the trip by walking. The other trip types are far more efficient for a long-term patron.

### ***Walk/Transit/Walk***

This travel option will become increasingly convenient and comfortable because Annapolis Transit has completed installation of bus shelters along its routes and the City and County have been implementing a coordinated program to address sidewalk deficiencies along major streets, with special attention being paid to bus stop access.

This improved pedestrian access to the bus stop coupled with improved comfort provided by the shelters will make this trip type a more viable and popular option especially for long-term patrons heading for downtown, Parole, and destinations along major streets where transit service is the most prevalent. Walking in the downtown will continue to be relatively easy with the existing sidewalk system. The most noticeable improvement to the walking environment to and from transit will be along major streets outside of the downtown and within Parole. This will enable long-term patrons to efficiently complete some of their trips using transit.

### ***Walk/Bicycle***

The focused sidewalk improvement program noted above has made walking, particularly some of the areas busier streets safer and more enjoyable. In particular, mobility impaired individuals are finding it easier to navigate.

The City/County bicycle route map will encourage more bicycling because short-term patrons will be aided in planning routes to reach destinations by bicycle in a manner, which suits their abilities and preferences. Secure short-term bicycle parking will be available near building entrances.

## **Important Actions and Recommendations**

The important planned actions and recommendations are:

<b>Planned Actions and Recommendations</b>	<b>Page #</b>
II. B. (1-4) AT transit service improvements	89
II. C. (3) Reduced transit headways	92
II. C. (5) Systematic sidewalk repair and improvement program	93
III. C. (2) Establish an area-wide parking policy	103
III. C. (3) Integrate pricing and incentives for transit and downtown parking	103
III. C. (4) Increase parking efficiencies	105
III. C. (7) Enhance parking security	115

## **DAY TRIPPER TOURISTS**

### **Trip Benefits**

#### ***Drive and Drive/Walk Trips***

Day tripper tourists arriving by car and parking all day in the downtown will find this method to be more expensive relative to other alternatives, thereby encouraging some day tripper tourists to utilize outlying parking in the NAAA lot.

#### ***Drive/Transit/Walk***

The transit and shuttle service between the NAAA lot and downtown will be improved with security personnel in the lot, improved lighting, a new shelter, and real time shuttle and bus information. The short headways during the peak morning and evening hours will make this a less expensive alternative to downtown parking with similar travel times to driving into downtown.

#### ***Walk/Transit/Walk***

This is not a trip type used by this group.

#### ***Walk/Bicycle***

Very few people will visit from outside of the study area strictly by walking. Visitation by bicyclists will become more common because of the continued improvement of the national and regional trail system. The City/County bicycle route map will encourage more bicycling because now visitors will be aided in planning a bicycle route to and from the area, which suits their abilities and preferences. Secure visitor bicycle parking will be available adjacent to important tourist sites, such as the State Capitol, downtown, and the Chesapeake Bay.

## Important Actions and Recommendations

The important planned actions and recommendations are:

Planned Actions and Recommendations	Page #
I. C. (8) Bicycle route map	83
II. B. (1-4) AT transit service improvements	89
II. C. (1) Directional signs for visitors and tourists	90
II. C. (3) Reduced transit headways	92
II. C. (5) Systematic sidewalk repair and improvement program	93
III. C. (2) Establish an area-wide parking policy	103
III. C. (3) Integrate pricing and incentives for transit and downtown parking	103
III. C. (4) Increase parking efficiencies	105
III. C. (6) Enhance NAAA lot for downtown parking	107
III. C. (7) Enhance parking security	115

## OVERNIGHT VISITORS

### Trip Benefits

#### *Drive and Drive/Walk Trips*

For those driving to the study area for a visit of one or more days typically head to the hotel or bed and breakfast where they will be staying.

#### *Drive/Transit/Walk and Walk/Transit/Walk*

This is not really a trip type used by overnight visitors because if their trip begins by automobile and their hotel or bed and breakfast provide parking, there is little incentive to leave one's car at an outlying lot.

#### *Walk/Bicycle*

Very few people will visit from outside of the study area strictly by walking. Visitation by bicyclists will become more common because of the continued improvement of the national and regional trail system. The City/County bicycle route map will encourage more bicycling because visitors will be aided in planning a bicycle route to and from the area, which suits their abilities and preferences. Secure visitor bicycle parking will be available adjacent to important tourist sites, such as the State Capitol, downtown, and the Chesapeake Bay.

## Important Actions and Recommendations

The important planned actions and recommendations are:

Planned Actions and Recommendations	Page #
I. C. (8) Bicycle route map	83
II. B. (1-4) AT transit service improvements	89
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III. C. (2) Establish an area-wide parking policy	103
III. C. (3) Integrate pricing and incentives for transit and downtown parking	103
III. C. (4) Increase parking efficiencies	105
III. C. (7) Enhance parking security	115

## RESIDENTS

### Benefits

The residential user group category is unique because the purpose of defining this user group is to ensure that impacts caused by use of the transportation system by others is considered. Other transportation system users affect residents primarily by parking in residential neighborhoods and with cut-through traffic. The Plan recommendations, along with currently planned actions, are designed to minimize these impacts by:

- Alleviating a number of traffic bottlenecks to reduce the likelihood of cut-through traffic on local streets.
- Guiding motorists to appropriate and available parking to reduce parking by nonresidents in neighborhoods.
- Promoting transit, walking, and bicycling to reduce vehicular traffic and its related impacts.
- Implementing a more aggressive parking enforcement programs to discourage inappropriate parking in neighborhoods.

As a result, neighborhoods will generally be quieter with slightly reduced traffic, and residents will be more likely to have parking available in their neighborhoods.

## Important Actions and Recommendations

The important planned actions and recommendations are:

Planned Actions and Recommendations	Page #
II. C. (5) Systematic sidewalk repair and improvement program	93
III. C. (2) Establish an area-wide parking policy	103
III. C. (3) Integrate pricing and incentives for transit and downtown parking	103
III. C. (4) Increase parking efficiencies	105
IV. C. (6) Urban design	125

## DELIVERIES

### Trip Benefits

#### *Drive Trips*

The majority of deliveries are made exclusively by vehicles, and this is expected to continue. Deliveries will at least not more difficult in the past because the focus on automobile alternatives will reduce or at least lessen the impact of congestion in the study area.

#### *Walk/Bicycle*

Because almost all deliveries occur by vehicle, the sidewalk and bicycling improvements will not have much affect on these modes for this user group.

## Important Actions and Recommendations

The important planned actions and recommendations are:

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I. C. (1) Coordinate traffic signals	78
I. C. (2) Comprehensive traffic studies	79