

MEMORANDUM

TO: Sarah Michailof
Maryland State Highway Administration

FROM: Rick Kiegel, P.E.
McCormick, Taylor & Associates, Inc.

DATE: October 31, 2003

RE: Project No: HA231B11
MD 24, from North of MD 924 to South of MD 7, including the I-95
Interchange
Harford County, Maryland

A Secondary and Cumulative Effects Analysis (SCEA) was performed in compliance with the National Environmental Policy Act of 1968 (NEPA) and Council of Environmental Quality (CEQ) regulations which require that the secondary and cumulative effects of a project be examined (40 CFR 1508.25[c]). The SCEA was completed in conformance with SHA's **Secondary and Cumulative Effects Analysis (SCEA) for Categorical Exclusion Guidelines** (Revised January 2002). The SCEA was divided into the following sections: Purpose and Need, scoping, analysis, and conclusions.

Purpose and Need

The purpose of the MD 24 Study is to evaluate opportunities for improved vehicular and transit access within the study area while improving safety, eliminating congestion and providing sufficient capacity to serve existing and planned development. Traffic congestion appears to be a contributory factor in the frequency of accidents within the MD 24 study area. Each roadway segment within the study area (I-95, MD 24, MD 924, MD 7) experiences higher than statewide averages for accidents on similar state maintained roadways.

The MD 24 corridor and surrounding areas have experienced a 34 percent increase in population during the last decade. This increase has contributed to the current existing roadway capacity and safety deficiencies. By 2020, the population is expected to increase by an additional 19 percent, resulting in further deterioration of conditions.

The proposed project will not provide new access to potential development areas. Therefore, the proposed improvements are not expected to encourage residential or commercial development within the study area or surrounding region.

Secondary and Cumulative Effects Analysis

1. Scoping

a. Resources

Resources considered in the SCEA are those that would be directly impacted by the project alternates and those that would be impacted from any secondary development resulting from proposed action. An environmental inventory identified four resources that are impacted by the project’s Build Alternates. The following resources would not be impacted and therefore are not included in the SCEA analysis: Rare, Threatened and Endangered Species (RTE Species), cultural resources, residential communities and business communities. **Table 1** presents the resources considered in the SCEA as well as the proposed Analysis Methodology.

Table 1
SCEA Resources

Resource	Proposed Analysis Methodology	Data Sources
Wetlands	<u>Overlay Analysis</u> Overlaying present wetlands mapping with future land use to estimate potential impacts will assess future impacts. Present and future impacts will also consider wetlands regulations currently being implemented that protect these resources.	<ul style="list-style-type: none"> • National Wetlands Inventory Maps (USFWS) (2000) • Harford County Master Plan and Land Use Element Plan (1996) • Harford County Land Use/Land Cover Data (DNR, 2003) • Aerial Photography (1994)
Waters of the United States (WUS)	<u>Overlay Analysis</u> Determine the change in the amount of impervious surface, based on land use changes from present to future. WUS laws and regulations will be considered when assessing impacts.	<ul style="list-style-type: none"> • Aerial Photography (1994) • Harford County Land Use/Land Cover Data (DNR, 2003)
Floodplains	<u>Overlay Analysis</u> Overlay future land use maps with present FEMA floodplain boundaries to determine anticipated future impacts. Floodplain regulations will be considered when assessing impacts.	<ul style="list-style-type: none"> • FEMA Maps (1996) • Aerial Photography (1994) • Harford County Land Use/Land Cover Data (DNR, 2003)
Wildlife and Terrestrial Habitat	<u>Overlay Analysis</u> For anticipated present and future impacts, overlay future land use mapping (forested areas) with proposed future development areas to determine potential future impacts. State and local forest regulations will be considered when assessing/estimating impacts.	<ul style="list-style-type: none"> • Harford County Master Plan and Land Use Element Plan (1996) • Harford County Land Use/Land Cover Data (DNR, 2003)

b. Boundary

Establishing the SCEA geographical boundary involved overlaying relevant sub-boundaries comprising the overall SCEA geographical boundary. Based on the overlay analysis, the SCEA boundary is primarily the synthesis of the outermost edges of the subwatersheds and the census-tract sub-boundaries. *Attachment A* identifies the SCEA boundary in relation to the study area boundary.

c. Time Frame

1. Past Time Frame

The year of 1977 was selected as the past time frame. This date marks the establishment of Harford County’s “Development Envelope,” a defined geographic area for staging and directing more intense growth. This area encompasses the I-95/US 40 and MD 24 corridors, including the MD 24 proposed study area. The establishment of the “Development Envelope” focuses development within a defined area and limits public water and sewer services to the boundary of the Envelope. Because the availability of public water and sewer services allows for higher density development, restriction of these services has a significant effect on growth and land uses. It should be noted that other historic events, such as the opening of I-95 in 1963, also influenced significant changes in population and land use. However, readily existing land use mapping is not available prior to 1969. Therefore, the establishment of the “Development Envelope” marks the single most significant historic event for the period for which pertinent data/mapping exists for the SCEA study area. *Attachment B* shows a timeline from 1835 to 2020 identifying population growth, land use and historic and projected SCEA transportation improvements within the county and the proposed SCEA boundary.

2. Future Time Frame

In accordance with SHA’s SCEA Guidelines, the project’s design year (2020) will be used for the future time frame. Significant growth has occurred throughout the later half of the twentieth century and is expected to continue through to 2020. According to the 1996 Master Plan, 2000-projected population for the entire County is about 226,565 and for 2020 would grow at 19 percent to be approximately 269,612.

2. Analysis

a. Land Use Scenarios

The primary data source available for assessing land use in the 1977 time period is an aerial photograph, of the SCEA study area, from the 1975 *Harford County Soil Survey*. Although the soil survey was issued in 1975, the aerial photograph associated with it was taken in 1971. The primary data source available for assessing land use for the present

time period is a 2003 aerial photograph provided by State Highway Administration. In assessing past to present land use changes, the two photographs were compared. The SCEA study area in the past time frame contained mostly forested, farmland, open space and residential land uses. The majority of the SCEA study area was mostly forested and farmland with pockets of open space. Residential areas were mostly concentrated south of I-95 along MD 24.

The SCEA study area currently contains a variety of different land uses. They include:

- Commercial
- Industrial
- Residential
- Public Land
- Open Space
- Forest
- Transportation

A comparison of the past and present land uses revealed that significant development has occurred within the SCEA boundary. Significant commercial, industrial and residential development throughout the past thirty years has replaced large amounts of forest, farmland and open space. This can be attributed to the establishment of Harford County’s “Development Envelope” as well as the opening of I-95.

According to the *Harford County 1996 Master Plan* and *Land Use Element Plan*, commercial, industrial and residential development planned for the SCEA study area is consistent with present land use. The plan supports and encourages development in commercial/industrial centers that will strengthen their function and sense of place.

The future land use scenario was established by overlaying parcels of land recommended for development with the present land use scenario. *Attachment C* shows the present land use scenario and highlights areas that are sited for future development. According to the 1999 Preliminary Plan Approval for the Box Hill South Corporate Center, a corporate center slated for light/industrial uses is proposed on the lands of the Box Hill Estates, located just east of the study area along MD 924. Other areas expecting future development include: lots slated for development in the Constant Friendship Business Park, Lakeside Business Park and the Edgewood Road Property. Within the vicinity of the SCEA boundary, the Abingdon Woods property is slated for commercial/industrial development (*Table 2*). The proposed development in the study area will occur regardless of the improvements proposed for this project.

Table 2
Future Development within the SCEA Boundary

Property Name	Total Acreage	Available Acreage	Zoning
Edgewood Road Property	11.2	11.0	GI (General Industrial)
Constant Friendship Business Park	196	54	CI (Commercial Industrial)
Box Hill South Corporate Center	143	100	CI (Commercial Industrial)
Lakeside Business Park	131	25.69	LI (Light Industrial)
Abingdon Woods*	295.41	295	CI (Commercial Industrial)

Source: Harford County Office of Economic Development

* Proposed development within the vicinity of the SCEA boundary

The future land use in the SCEA geographical boundary for the year 2020 will remain similar to the existing scenario. Development of these parcels may alter the appearance of small isolated land areas, but are unlikely to change the overall land use from its current condition.

b. SCEA Resources

Past to present SCEA resource impacts (refer to *Table 1* for the identified resources) were determined through an overlay analysis, which identified changes in SCEA resources from the past to present land use scenarios. The environmental resources within the SCEA boundary have all experienced cumulative effects due to rapid residential, commercial and industrial development that has taken place within the past thirty years. Rapid development has contributed to the loss of agricultural, open space and forested land within the SCEA boundary, thus impacting all of the SCEA resources. Despite the cumulative effects on environmental resources, the style of growth that has occurred is consistent with the “Development Envelope” policy first established by the *1977 Harford County Master Plan*.

Future SCEA resource impacts were established by overlaying the SCEA resources with future development in the SCEA geographical boundary. Overlay analysis indicated that future development would be contained within already developed areas making impacts to SCEA resources minimal. Wildlife and Terrestrial Habitat would be most affected by expanding existing development areas which could potentially impact forested areas throughout the SCEA study area (*Attachment C*). Two streams exist within the SCEA boundary: Winters Run (located west of MD 24), crossing I-95 and Haha Branch (located east of MD 24), also crossing I-95. Potential impacts to WUS are not likely for Haha Branch because this stream is surrounded by thick forest, which acts as protection to the stream. However, Winters Run could potentially result in impacts from future development within the Lakeside Business Park. The Lakeside business park is located in the southwest portion of the SCEA study area. This Business Park contains vacant lots that have the potential for commercial development. The Winters Run floodplain and wetland impacts could also occur as a result of future development within the same area.

3. *Conclusions*

An overlay analysis was performed using the SCEA resources along with future development, and it is anticipated that future development will occur within already developed areas. The environmental and conservation programs/laws listed in *Table 3* will further minimize impacts from future development.

Table 3
Environmental and Conservation Program/Laws

Resource	Environmental and Conservation Programs/Laws
<i>Wetlands</i>	<ul style="list-style-type: none"> • Nontidal Wetlands Protection Act • Sediment Erosion Control Law (COMAR) 26.17.01
<i>Waters of the US</i>	<ul style="list-style-type: none"> • Clean Water Act, Section 404 • Clean Water Act, Section 401 (Water Quality Certification) • Maryland Waterway Construction Statute (COMAR) 26.17.04 • Maryland Planning Act, 1992
<i>Floodplains</i>	<ul style="list-style-type: none"> • Executive Order 11988 “Floodplain Management”
<i>Wildlife and Terrestrial Habitat</i>	<ul style="list-style-type: none"> • The MD Reforestation Law (Natural Resources Article 5-103)

Other minimization efforts stem from the primary functions of the *Land Use Element Plan*, established in 1988, which is designed to manage development in a manner which ensures compatibility with identified natural features, while minimizing the potential for long-term adverse impacts on the County’s environment.

Secondary Effects

No secondary effects to environmental resources are expected to occur in the SCEA geographical boundary for the future time frame. The majority of future development is located within previously developed areas.

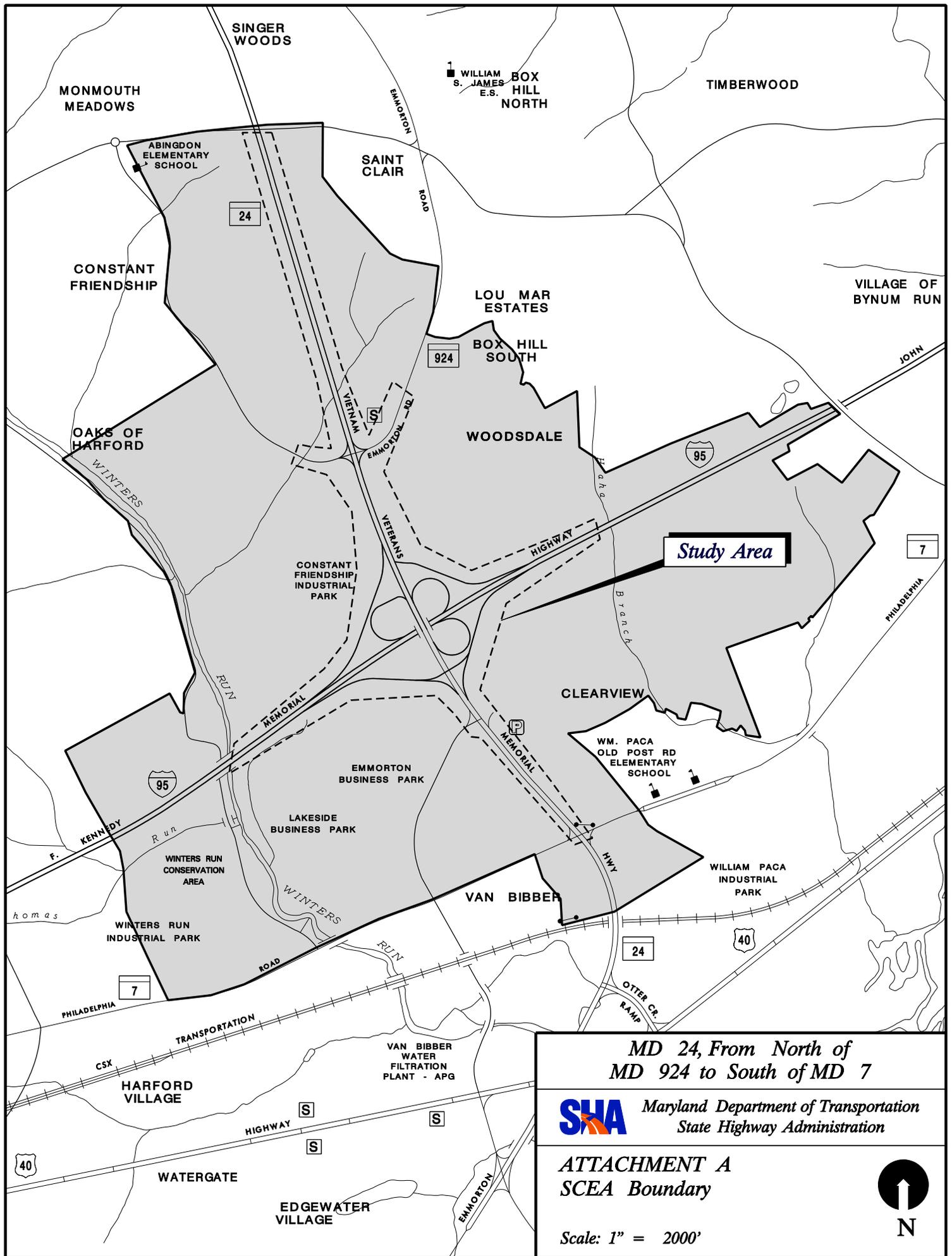
Cumulative Effects

No cumulative effects to environmental resources are expected to occur in the SCEA geographical boundary for the future time frame. Environmental and conservation programs/laws previously listed in *Table 3* will minimize impacts from future development.

No secondary and cumulative effects are expected to occur in the SCEA geographical boundary for the future time frame. Much of the area within the SCEA boundary has experienced “built-out” conditions. This project will not provide access to any new development areas and will not add to or create any cumulative impacts. The proposed development in the study area, primarily the Box Hill Corporate Center, will occur regardless of the improvements proposed for this project. The proposed project will not have a significant impact on any natural, cultural, recreational, historic or other resource; and is not anticipated to have any secondary or cumulative impacts.

Attachments

cc: Joe Kresslein, Maryland State Highway Administration
Jennifer Battle, Maryland State Highway Administration



MD 24, From North of
MD 924 to South of MD 7



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ATTACHMENT A
SCEA Boundary



Scale: 1" = 2000'

TRANSPORTATION, POPULATION AND LAND USE TIMELINE

 - Population

 - Land Use Events

 - Transportation Improvements

1835 - East Coast main line railroad opens.

1917 - Aberdeen Proving Grounds (APG) / Edgewood Arsenal Open.

1923 - APG builds Hospital and Airport.

1931 - Arsenal Specialists School is transferred to APG from New Jersey.

1933 - APG builds additional barracks, roads and test facilities.

1935 - Pulaski Highway Built / Opened (US40).

1935 - APG establishes the Research Division.

1939 - APG establishes Ballistic Research Lab.

1940 - County Population is 35,060.

1941 - APG annexes 7,000 acres.

1945 - APG annexes 1,800 acres and has peak staff of 32,664 employees.

1950 - County Population is 51,782.

1960 - County Population is 76,722.

1962/3 - I-95 Built / Opened.

1969 - Harford County's 1st Master Plan is published. Designates land for development and dictates land uses.

1970 - County Population is 115,378.

1971 - APG and Edgewood Arsenal merge.

1972 - I-95 Widened from 4 to 6 lanes.

1972 - County Charter Government is initiated in Maryland, requiring Counties to have Master Plans and govern themselves at the local level.

1977 - 2nd Master Plan is published, and establishes the Development Envelope where land available for development is scaled back from the 1969 Plan to be encompasses within a growth boundary.

1980 - County Population is 145,930.

1986 - MD 24 was realigned from the MD 924 location to the current location to relieve traffic congestion and expedite travel time between I-95 and Bel Air.

1986 - MTA establishes #410 and #411 bus service between Harford County and Baltimore City.

1988 - The Harford County Land Use Element Plan is published, and further reinforces the Development Envelope with further land development designations within and outside of the growth boundary. Adequate Public Facility guidelines and clustered development plans are established for areas within the Development Envelope and rural preservation guidelines are established for areas outside the Development Envelope.

1989 - Tollgate Road at Baltimore Pike Water and Sewer System Building Moratorium initiated (lifted in 1991).

1989 - APG initiates Environmental Awareness Programs after Federal lawsuit.

1990 - County Population is 182,132.

1991 - I-95 Widened from 6 to 8 lanes and ownership transfers from SHA to MdTA.

1992 - Maryland General Assembly Planning Act. Established criteria that counties must develop Visions for growth management plans to abide by. The Harford County Visions are to: 1) Concentrate land development to suitable areas, 2) Protect sensitive areas, 3) Direct growth in rural areas to existing population centers, 4) Promote stewardship of the Chesapeake Bay and natural environment, 5) Conserve resources, 6) To ensure achievement of Visions 1 through 5, economic growth is encouraged and regulatory mechanisms are streamlined and 7) To ensure funding is available to achieve these Visions.

1994 - SHA and MdTA start a cooperative planning study with MTA and Harford County for the transportation improvements in the project study area.

1994/95 - The County was further broken up into 11 smaller and more local community planning areas.

1995 - Park and Ride is built at MD 24 and I-95, 80 spaces provided (later altered by MD 24 widening to be 64 spaces).

1995 - The town of Edgewood is designated as an Enterprise Zone to promote economic development.

1996 - The latest Master Plan is published, and defines the relationship with the land use element plan. It dictates speed of growth to keep up with infrastructure (schools, roads, sewers, etc) growth abilities. Growth outside the Development Envelope is focused in rural village areas.

1997 - Initiation of Maryland's Smart Growth Legislation, of which designated the Development Envelope as a Priority Funding Area.

1997 - MD 24 widened around I-95 interchange to ease traffic congestion and promote safety.

2000 - County Population is 226,565.

2000 - The project is included in the Maryland Department of Transportation's FY 2000-2005 Consolidated Transportation Program in the Development and Evaluation Program for Project Planning.

2002 - MDOT Fiscal Year for the MD 24, from North of MD 924 to South of MD 7 Project.

2010 - Projected County Population is 249,300.

2020 - Projected County Population is 269,612.

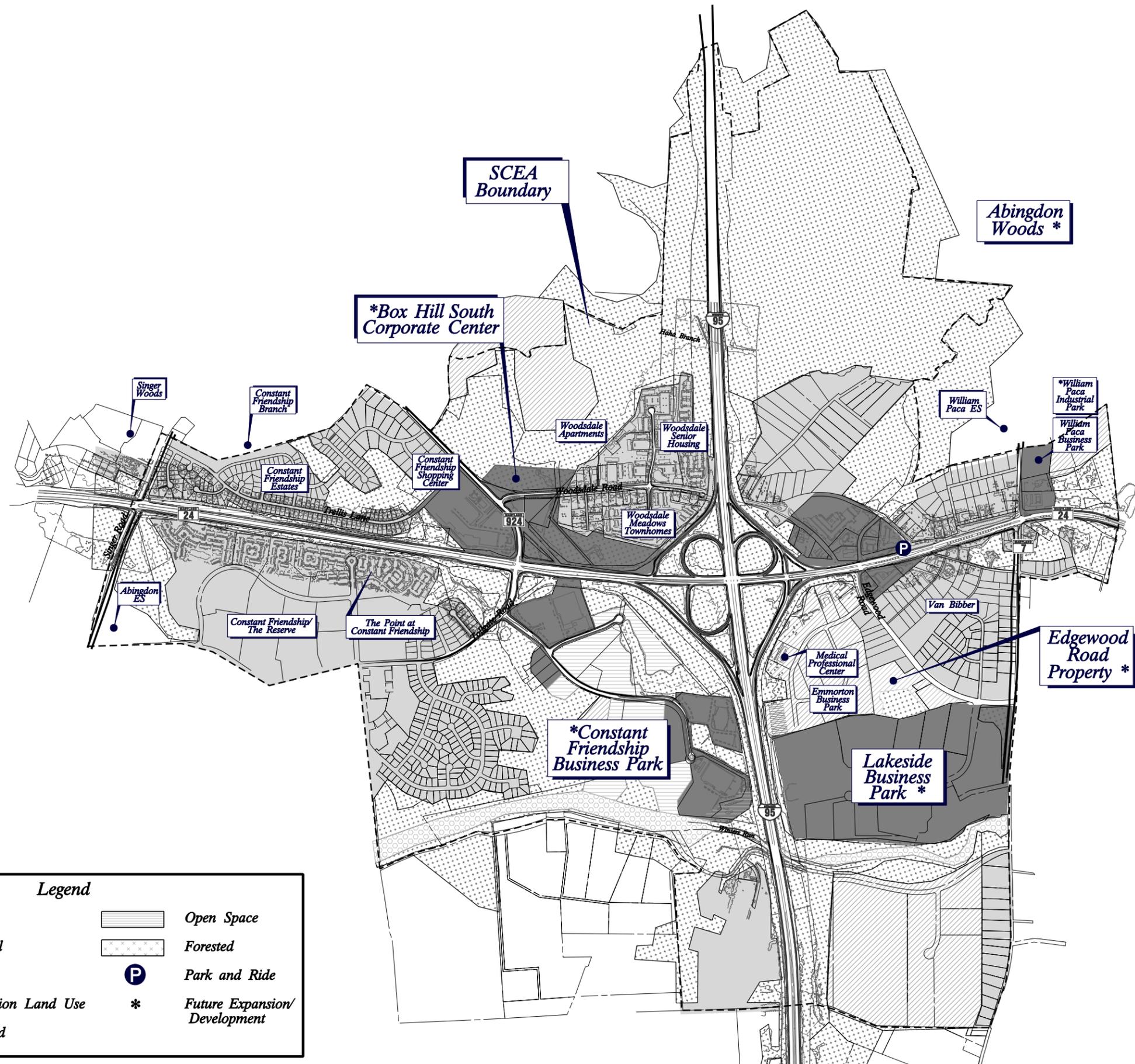
2020 - Design Year for MD 24 study (from North of MD 924 to South of MD 7).

MD 24, From North of MD 924 to South of MD 7



Maryland Department of Transportation
State Highway Administration

ATTACHMENT B
Transportation, Population and Land Use Timeline



Legend			
	Residential		Open Space
	Commercial		Forested
	Industrial		Park and Ride
	Transportation Land Use		Future Expansion/Development
	Public Land		

MD 24, From North of
MD 924 to South of MD 7

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ATTACHMENT C
Existing and Future
Land Use