ICE Analysis Training Program

Module 3:
How to Determine Time Frames

State Highway Administration
Maryland Department of Transportation

How to Determine Time Frames

How to Determine Time Frames - Overview

- **Past Time Frames?**
- **Future Time Frames?**

Past Time Frames

FACTORS TO CONSIDER

- **Major events in the historic context of the ICE Analysis geographical boundary**
- **Dates when major roads were built within the ICE Analysis geographical boundary**
- **Land use changes**
- **Population Growth**
- **Availability of data**
- **Agency input**

Past Time Frames

MAJOR EVENTS IN THE HISTORIC CONTEXT OF THE AREA

- **Include both private and public actions that had a major effect on population growth, land use, and consequently on environmental resources.**

- **These changes may, of themselves, result in not ICE "Analyzable" effects to the environment, or may stimulate development, which in turn, results in not ICE Analyzable environmental effects.**

Examples:

- **Opening of a military base or employment center & noteworthy direct impacts**
  - * **increases population of the area**
  - * **stimulates residential development**
  - * **service industries result as "spin off"**

- **Large Residential Subdivision & noteworthy direct impacts**
  - * **service industries result as "spin off"**

- **Landfill & noteworthy degradation of water quality**

- **Census tract data can verify population and employment increases / decreases associated with a major event.**

Past Time Frames

KEY POINTS TO REMEMBER

It is important to consider only major events that had a noteworthy effect on population, land use, and consequently, on environmental resources.

Individual home construction and / or small subdivisions are not considered major events, but may be the result of such events.

Census tract data can verify population and employment increases/decreases associated with a major event.

Past Time Frames

Dates When Major Roads Were Built in the ICE Analysis Geographical Boundary

- **Major events include roads, bridges, and other transportation projects that resulted in changes of employment, population, and consequently, on environmental resources.**

Past Time Frames

KEY POINTS TO REMEMBER

Care must be taken to identify the major event that resulted in changes. (i.e. Was it development of the Interstate highway, or expansion of a military base, or construction of a new airport.)

Population trends data (US Census) can often be used to substantiate a major historical event. Land use planning professionals can also shed some light on this.

Past Time Frames

LAND USE CHANGES

- Often the direct effects of a major event, such as a road, bridge, employment center, etc. may occur regardless of zoning and / or land use planning proposals

- Land use changes may also include government initiatives that have an effect on land use, population and employment

  Examples include:
  – lifting of building moratoriums
  – establishment of comprehensive zoning

Past Time Frames

DATA AVAILABILITY

- **An important factor, but not the only factor, in determining past time frames. All of the factors should be considered collectively in determining the past time frame for an ICE Analysis.**

- **Much of the readily available data we have today (both mapped and numerical data) became available in the 1970's due in part of enhanced environmental awareness following NEPA. Be careful not to focus on this fact as the only factor in making this decision.**

Past Time Frames

Rationale and Description for arriving at Decision on Past Time Frames

KEY POINTS TO REMEMBER
Be careful not to establish all ICE Analysis past time frames based upon data availability and the passage of NEPA in the 1970's. Consider all factors in conjunction with data availability

Past Time Frames

AGENCY INPUT

- **Agency comments on time frames provided during the scoping process are key and need to be considered**
- **Be sure to document these comments in the environmental document appendices and summarize in the ICE Analysis narrative**

Factors to Consider When Determining Past Timeframes:

Considerations	Yes	No
Major events in the historic context of the area	☑	
Dates when major roads were built within the ICE Analysis boundary	☑	
Changes in land use	☑	
Population changes	☑	
Employment changes	☑	
Data availibility	☑	
Agency input	☑	

Past Time Frames

DATA SOURCES

GIS Data through coordination with County Planning Agencies.

State Road Commission Archives - used to determine when major transportation projects were opened.

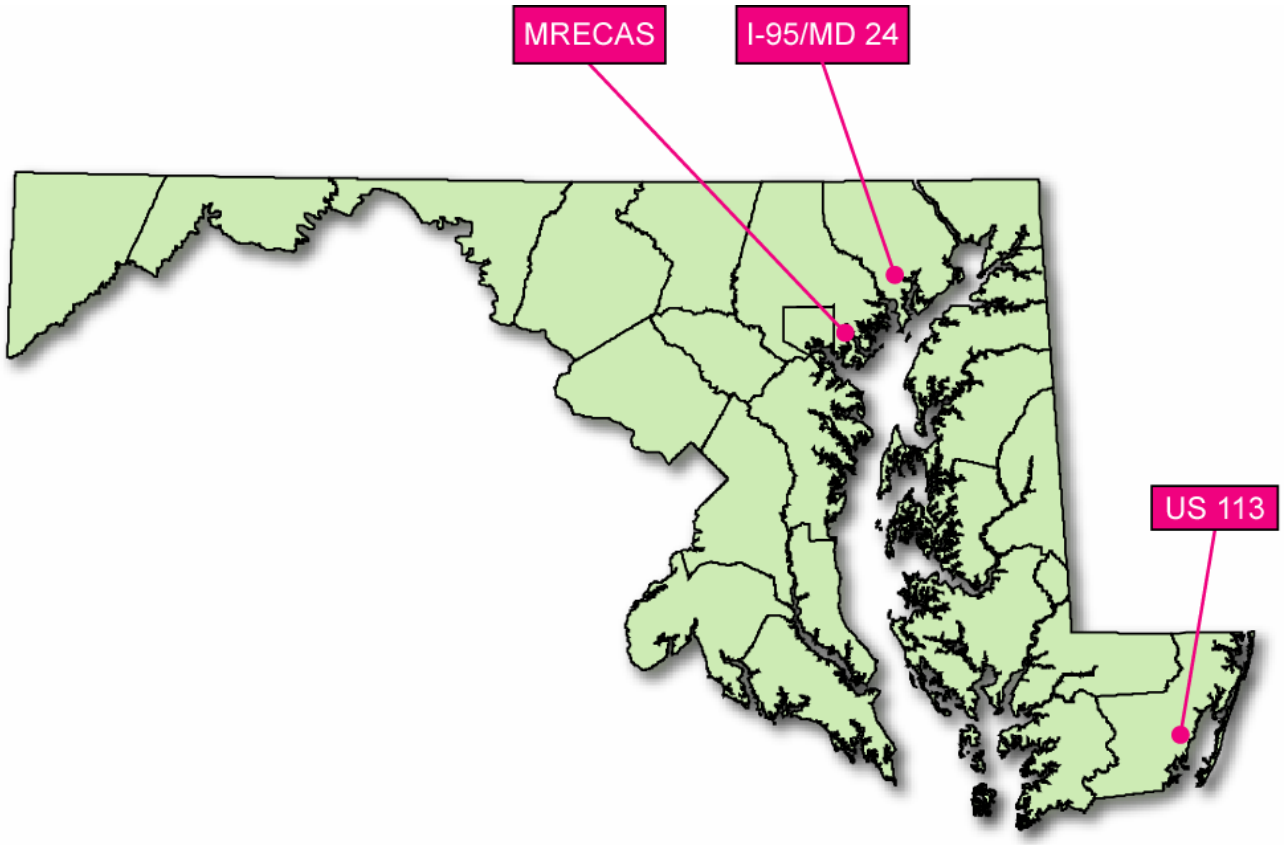
Consultation with county planners - used to determine when major events occurred (openings of employment centers, military bases, etc.)

US Census data - used to determine when population and/or employment changes (increases or decreases) occurred.

Historic aerial photography from counties and USDA - used to determine major land use changes.

Future Time Frames

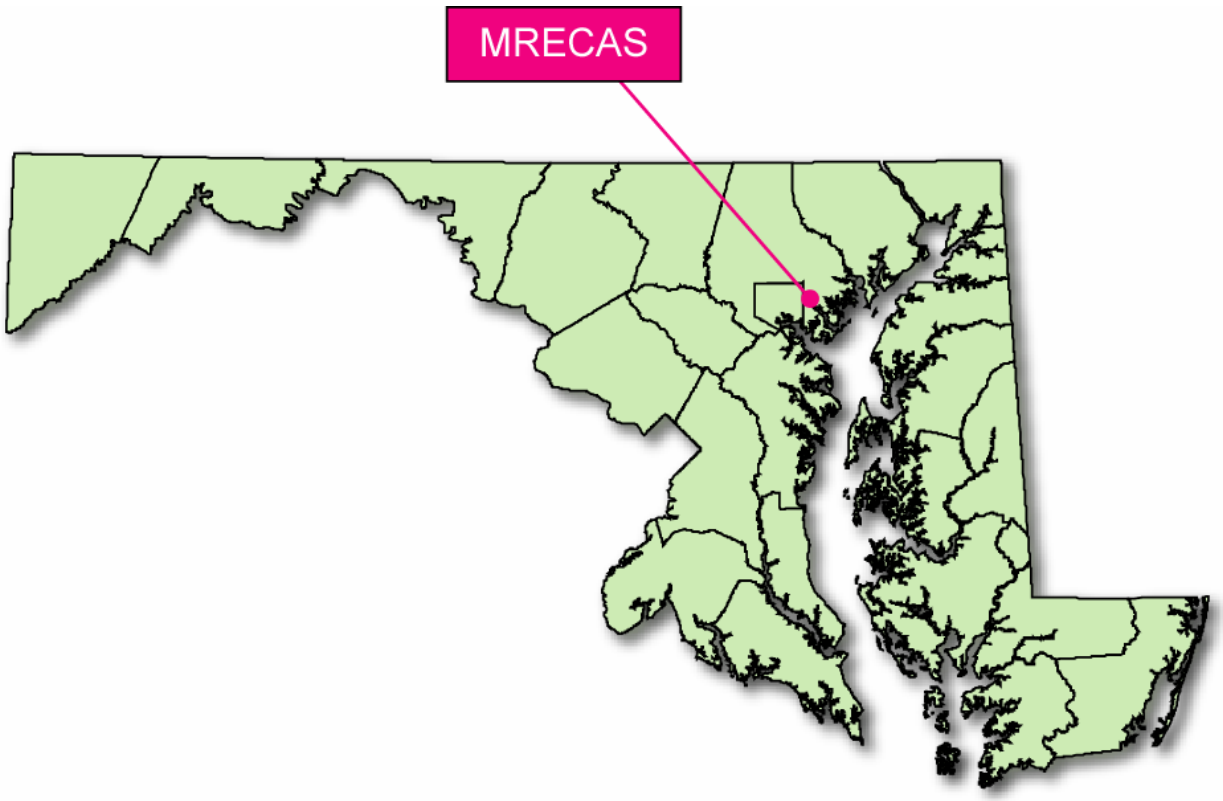
- **The project's design year should be used for the future time frame, as design year traffic is normally based on the land use planning agency's future land use assumptions.**



Case Studies

- **MRECAS (MD 43 Extended)**
- **US 113 - Planning Study**
- **I-95/MD 24 Improvement Study Categorical Exclusion (CE)**

Middle River Employment Center Access Study (MRECAS)



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Middle River Employment Center Access Study (MRECAS)

TIMEFRAME NOTES

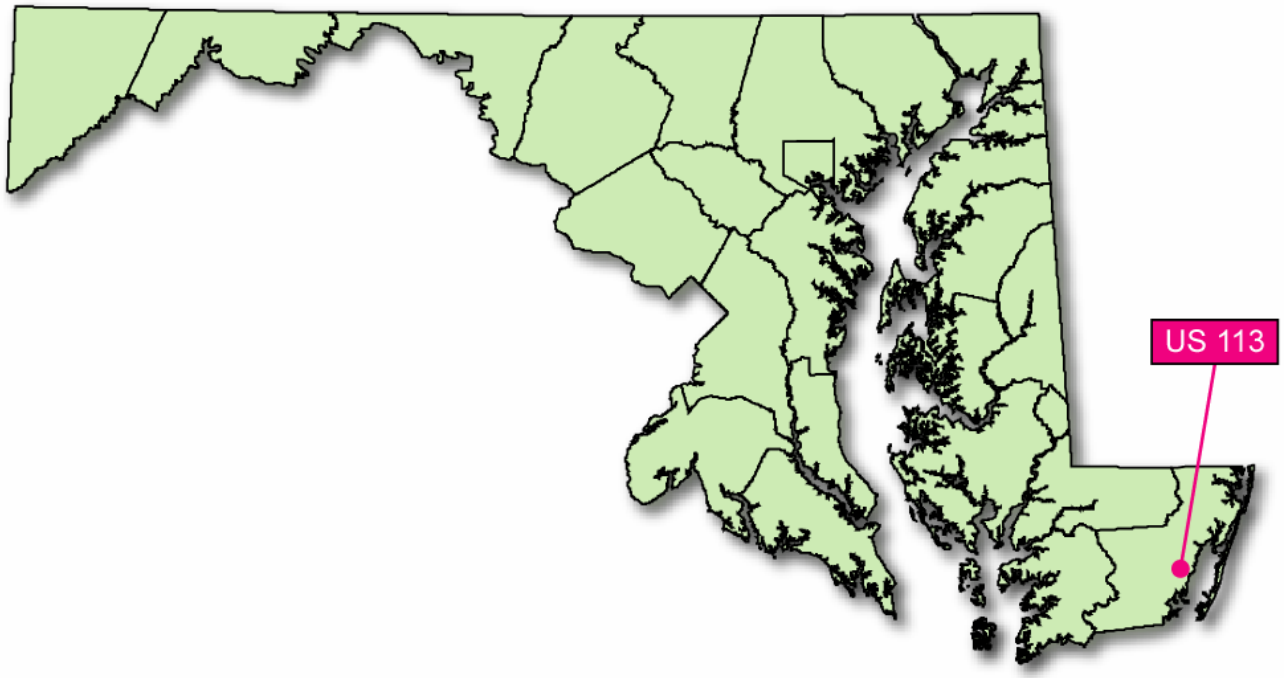
- **Indirect Effects Analysis - The time frame used for the indirect effects analysis was the present (1999) to the year (2020). 1999 was selected because it is the time that planned development within the MREC would start. 2020 was selected because it represents the project design year. In addition, projections beyond year 2020 are not readily available for some environmental resources.**

- **Cumulative Effects Analysis - 1963 was selected as the initial year because I-95 was opened in Baltimore County that year. The year 2020 was chosen because it is the design year for the project and also because projections beyond 2020 are not readily available for some environmental resources.**

KEY POINTS TO REMEMBER

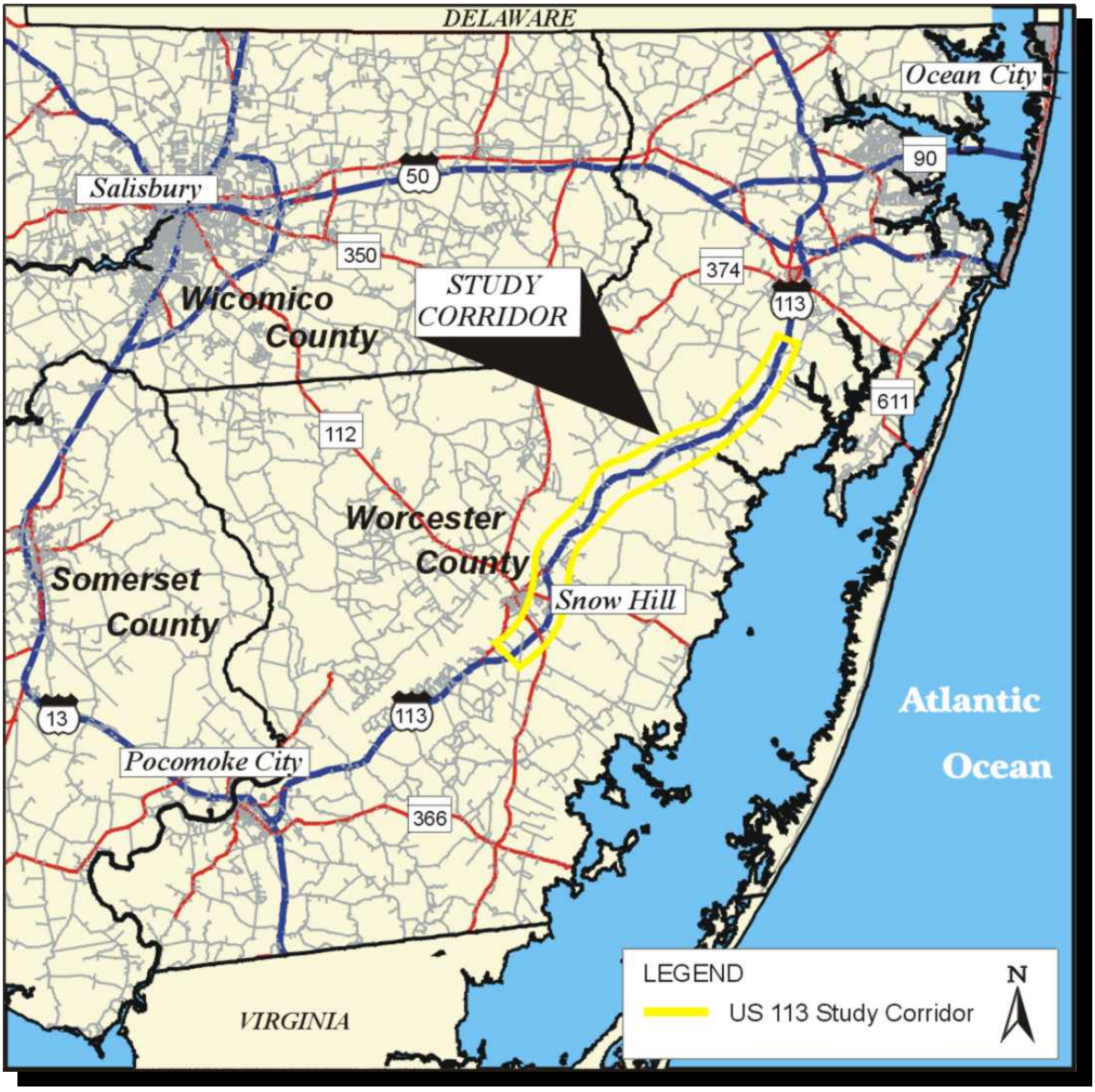
Do not use two or more different timeframes for indirect and cumulative effects. Under current SHA Guidelines, there should be only one ICE Analysis timeframe.

US 113 - Planning Study



US 113 - Planning Study

Location Map (Southern Section)



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US 113 - Planning Study

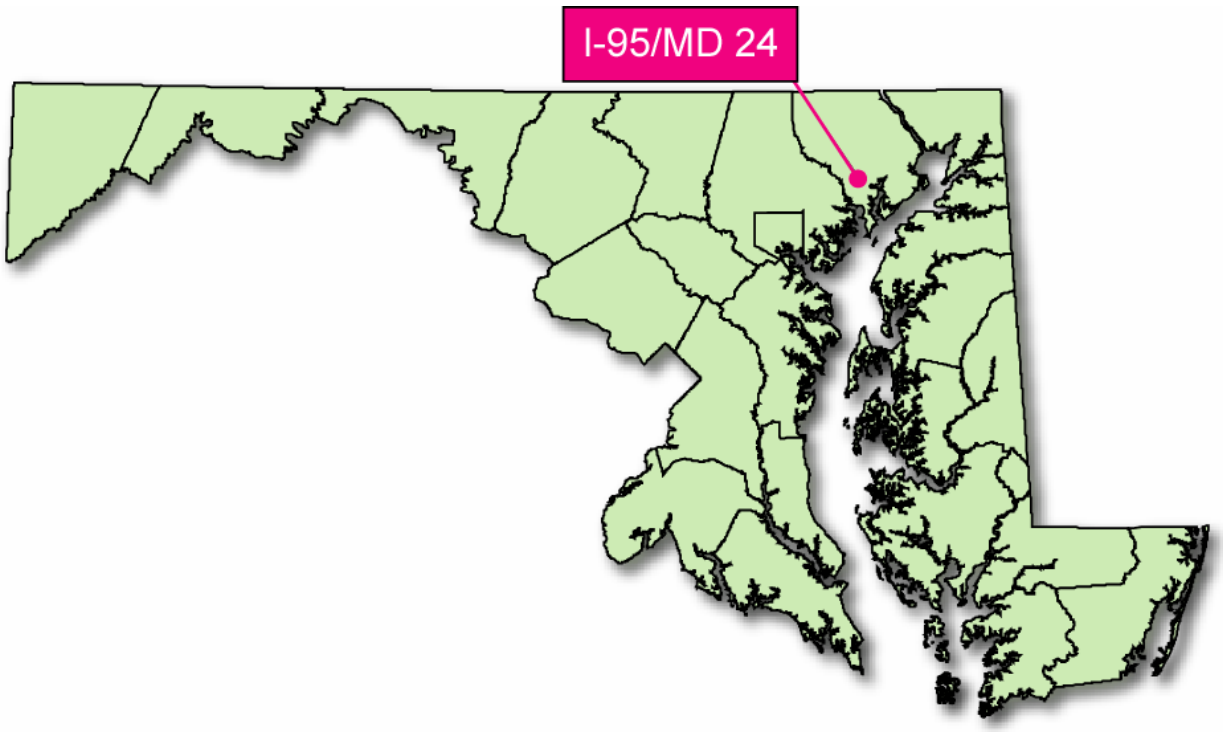
TIMEFRAME NOTES

- **The time frame covered by the cumulative effects analysis for US 113 was determined to be from the early 1970's through the design year, 2020.**

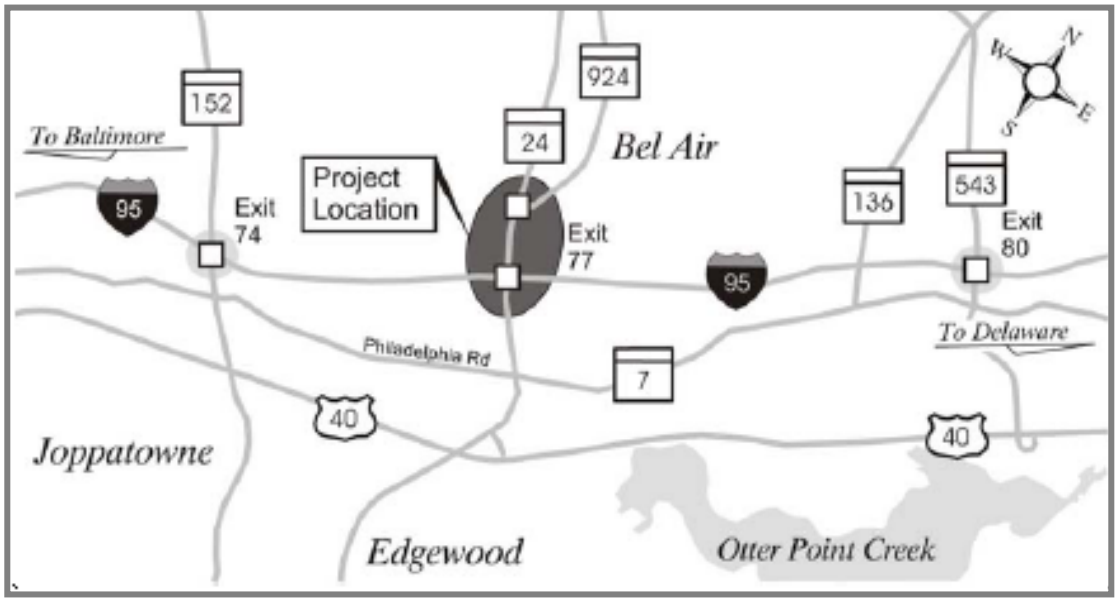
- **The time frame was based on growth trends, the initiation of environmental protection policies; the implementation of other area transportation improvement projects; available data; and, the project's design year.**

- **The 1970's were chosen because of: (1) a large population increase (26.4%); (2) the opening of the parallel bridge of the Chesapeake Bay Bridge in 1973; (3) increased environmental awareness, The National Environmental Policy Act (NEPA), passed in 1969; (4) development of an extensive database of Worcester County by the county and the Maryland Department of Planning in the 1970s and; (5) additional highway projects constructed in the 1970's, including the Snow Hill Bypass, MD 90, and the dualization of US 113 around Berlin.**

I-95/MD 24 Improvement Study
Categorical Exclusion (CE)



I-95/MD 24 Improvement Study Categorical Exclusion (CE)



PROJECT PURPOSE

- **The purpose of the I-95/MD 24 Improvement Project is to enhance safety conditions, reduce congestion and provide sufficient traffic capacity to serve existing and future development needs in the surrounding area.**

I-95/MD 24 Improvement Study Categorical Exclusion (CE)

DETERMINE THE PAST TIMEFRAME

- 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.
- 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 use.

I-95/MD 24 Improvement Study Categorical Exclusion (CE)

OTHER CONSIDERATIONS IN DETERMINING PAST TIME FRAME

- The opening of I-95 in 1963
- Changes in Population following I-95 opening

Readily existing land use mapping for this project was not available prior to 1969. Having readily available, existing data is a crucial aspect of your ICE Analysis. Do not rely on data with many gaps or make assumptions.

I-95/MD 24 Improvement Study Categorical Exclusion (CE)

DETERMINING FUTURE TIMEFRAME

- **In accordance with SHA's ICE Analysis Guidelines, the project's design year (2020) was 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 Harford County 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**

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 lastest Master Plan is published, and defines the relationship with the land sue 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).

ICE Analysis Timeframe

Group Exercise

- **Determine Time Frames**

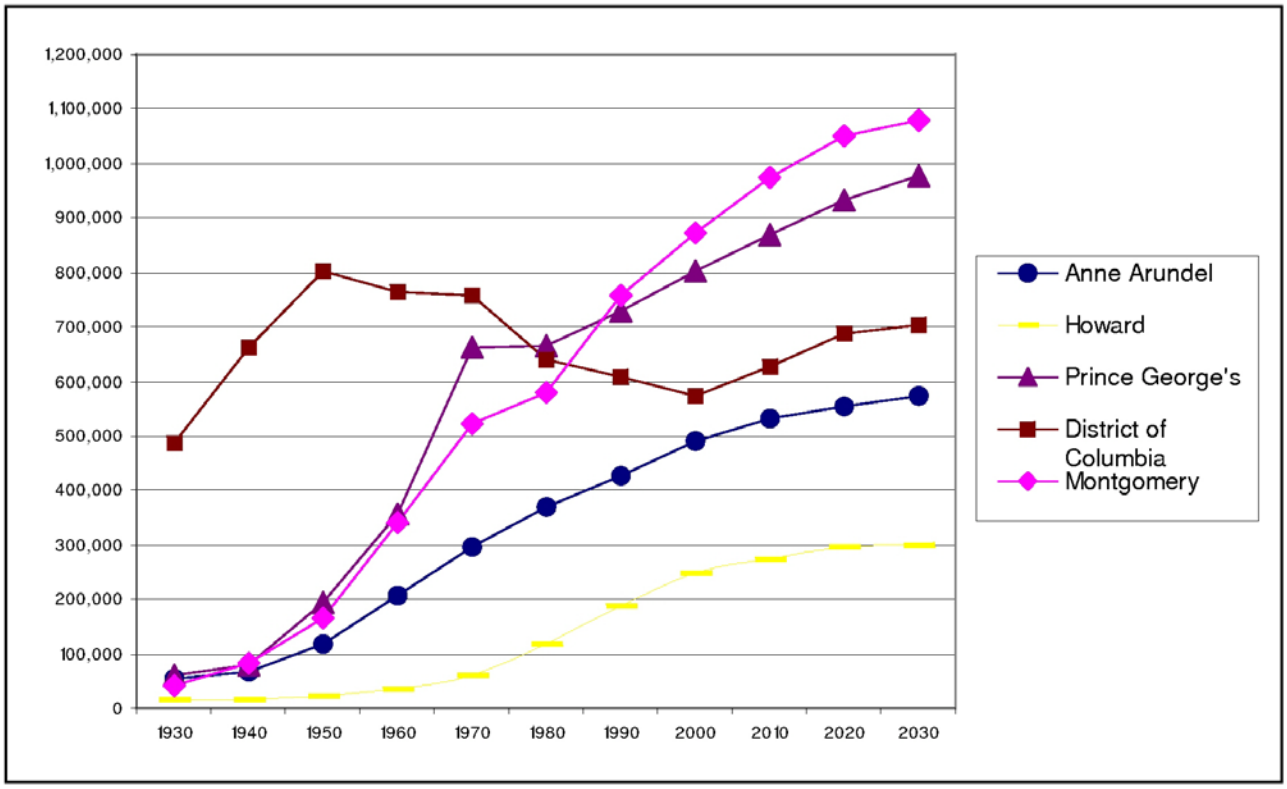
Determining ICC Past Time Frame

Significant Events in the ICC ICE Analysis Time Frame

- 1940's Highway Defense Act, prohibiting roadway construction except for military installations
- 1960's Substantial population growth since World War II
- 1964 On Wedges and Corridors: A General Plan for the Maryland-Washington Regional District (Hint: This Master Plan continues to shape planning practices in Montgomery County today)
- Opening of the Capital Beltway
- 1970 Passage of NEPA and data availability
- 1978 Completion of the Silver Spring Metro Station

- **Be sure to review changes in population over time to support your rationale for defining your past time frame:**

Population Change



- **Select the year that would be the most appropriate ICE Analysis Past Time Frame?**
- **(Pick up your polling devices)**