



# ICE Analysis Training Program

Module 1:

How to Determine Which Resources Should be Considered in an ICE Analysis



## How to identify what resources should be considered in the ICE Analysis





# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## Overview

- **Scoping and initial ICE Analysis activities**
- **Initial ICE Analysis resource identification**
- **Data Sources**



# ICE Analysis Training Program

## Module I:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## Scoping and Initial ICE Analysis Activities

- **Incorporate into project planning process during preliminary alternatives development. Present scoping activities at field meeting on preliminary alternatives.**
- **Identify environmental resources and ICE Analysis issues in the ICE study area. (Directly impacted resources are the starting point. More resources may be identified based on indirect effects or if new alternatives, with other/new impacts, are looked at.)**
- **Coordinate with resource agencies to:**
  - **obtain input on resource identification and analysis methodologies**
  - **inform them of missing information that could become an obstacle**
  - **address agency comments**



# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## Scoping and Initial ICE Analysis Activities

### Using the Scoping Process Effectively

(“A Common Sense Approach to Improving the NEPA Process” Fred R. Wagner, Environmental Claims Journal/Vol. 13, No. 1/Autumn 2000)

**“The importance of the scoping process cannot be stressed enough.”**

- **The agency should use this process to engage the public and other state and federal agencies in the identification of other actions, both public and private, that are within the general geographical area. This will be conducted in a similar time frame, and may impact the same resources affected by the proposed action.**
- **Only by conducting a thorough scoping analysis can the agency avoid the problem of having to analyze after the fact the potential synergistic effects of certain actions when they are not taken into account in initial modeling or analysis.**



# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## Initial ICE Analysis Resource Identification

- Identify resources directly impacted by each proposed project alternative
- Identify potential indirect effects from project alternatives in coordination with local planners and developers





# ICE Analysis Training Program

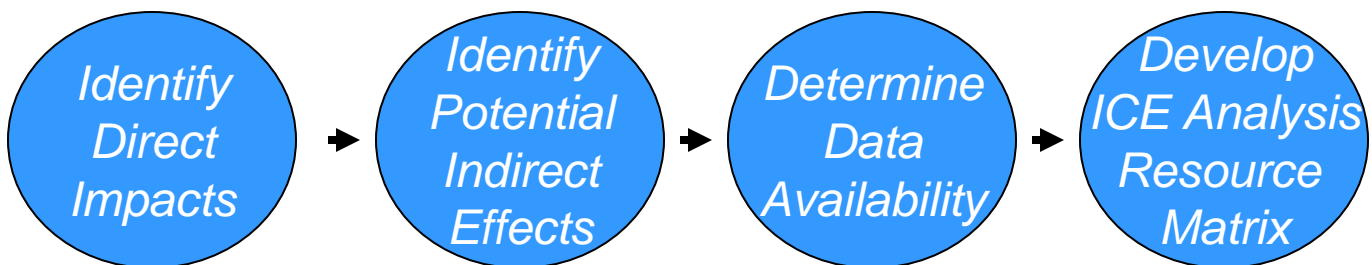
## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## Prepare ICE Analysis Resource Matrix for Presentation at the Interagency Field Review

- **Identify readily available data sources.**
- **Create resource matrix identifying:**
  - **each resource**
  - **data availability**
  - **data units**
  - **data sources**
  - **analysis methodology (Modules 4 & 5)**





# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## Key Data Sources

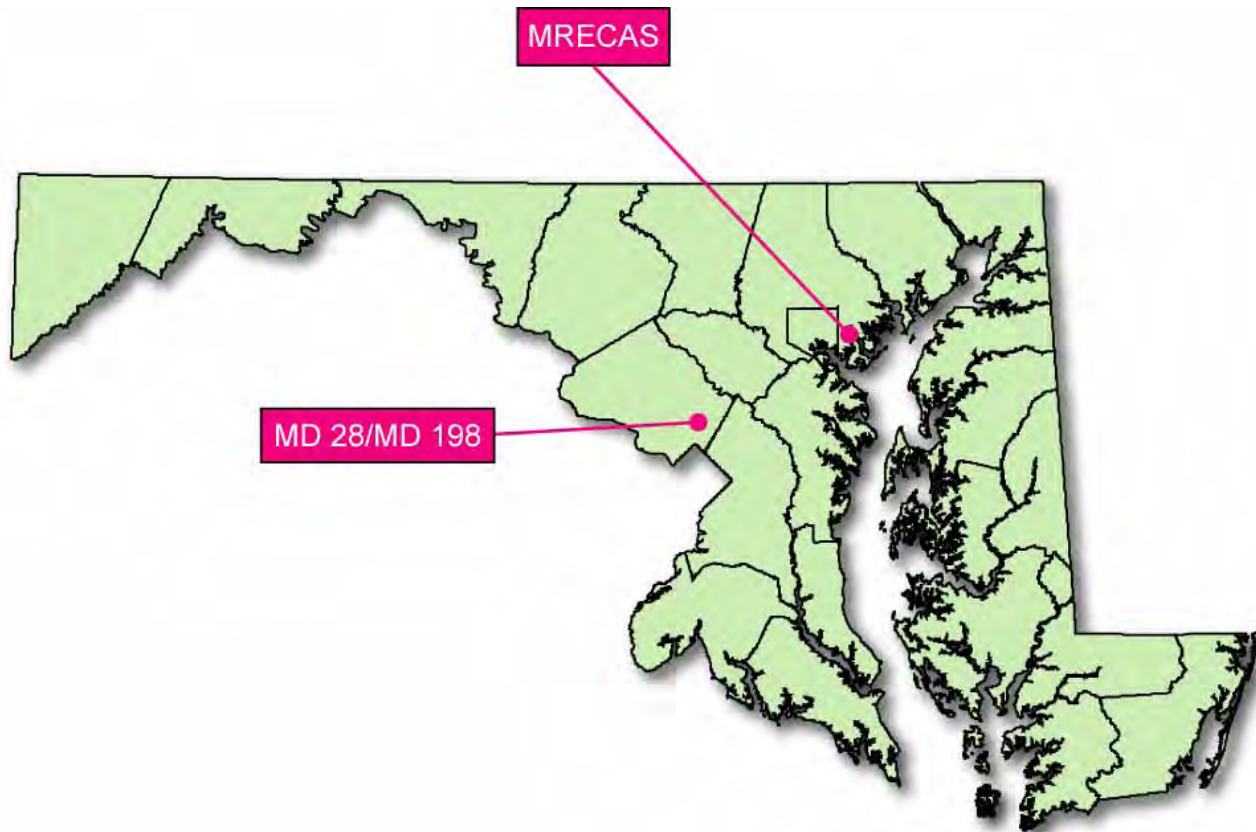
| Data  | Description   | Source/Website   |
|---|---|--|
| <b>General Data</b>   |   |  |
| Existing Environmental Documents  | Used to obtain background information on activities in the study area   | Coordinate with State Highway Administration Project Manager   |
| County Master/Sector Plans  | Used to identify planned activities /goals within the study area  | Coordinate with County Planning Department staff   |
| Army Corps of Engineers Permit Files                                      | Used to identify resources within the study area listed on ACOE permit files  | <a href="http://www.usace.army.mil">http://www.usace.army.mil</a>  |
| Constrained Long Range Plan and Consolidated Transportation Plan Projects | Used to identify transportation projects slated for the future  | <a href="http://www.mwcog.org/regionaltransportationplan/default.asp">http://www.mwcog.org/regionaltransportationplan/default.asp</a> ,<br><a href="http://www.emdot.com/News/ctpschedulemain">http://www.emdot.com/News/ctpschedulemain</a> |
| <b>GIS Specific Data</b>  |   |  |
| US Census Data/ Boundary Files  | Used for demographic analyses and determining the ICE Analysis geographical boundary.   | <a href="http://www.census.gov/">http://www.census.gov/</a>  |
| Aerial Photographs  | Used to verify resources and land use/land cover  | Coordinate with State Highway Administration Project Manager   |
| Maryland Department of Planning GIS Data                                  | Used to identify land use/land cover (1973 and 2000), Priority Funding Areas, census data, soils and generalized zoning.  | <a href="http://www.mdp.state.md.us/zip_downloads_accept.htm">http://www.mdp.state.md.us/zip_downloads_accept.htm</a>  |
| County wide GIS Data  | Used to identify various resources, such as parks, wetlands, floodplains, and communities.  | Coordinate with County Planning Department staff   |
| Maryland Historic Trust GIS Data  | Used to identify historic structures and districts within the study area.   | <a href="http://www.marylandhistoricaltrust.net/">http://www.marylandhistoricaltrust.net/</a>  |
| Maryland Department of Natural Resources GIS Data                         | Provides resources by county, including: DNR and NWI wetlands, floodplains, RTE project review areas, critical areas, wetlands of special state concern, watershed boundaries, Green Infrastructure, FIDS, and protected lands in a GIS shapefile format. | <a href="http://dnrweb.dnr.state.md.us/gis/data/data.asp">http://dnrweb.dnr.state.md.us/gis/data/data.asp</a>  |



# ICE Analysis Training Program

Module 1:

How to Determine Which Resources Should be Considered in an ICE Analysis



## Case Studies

- **MRECAS (MD 43 Extended)**
- **MD 28/MD 198 (DEIS)**





# ICE Analysis Training Program

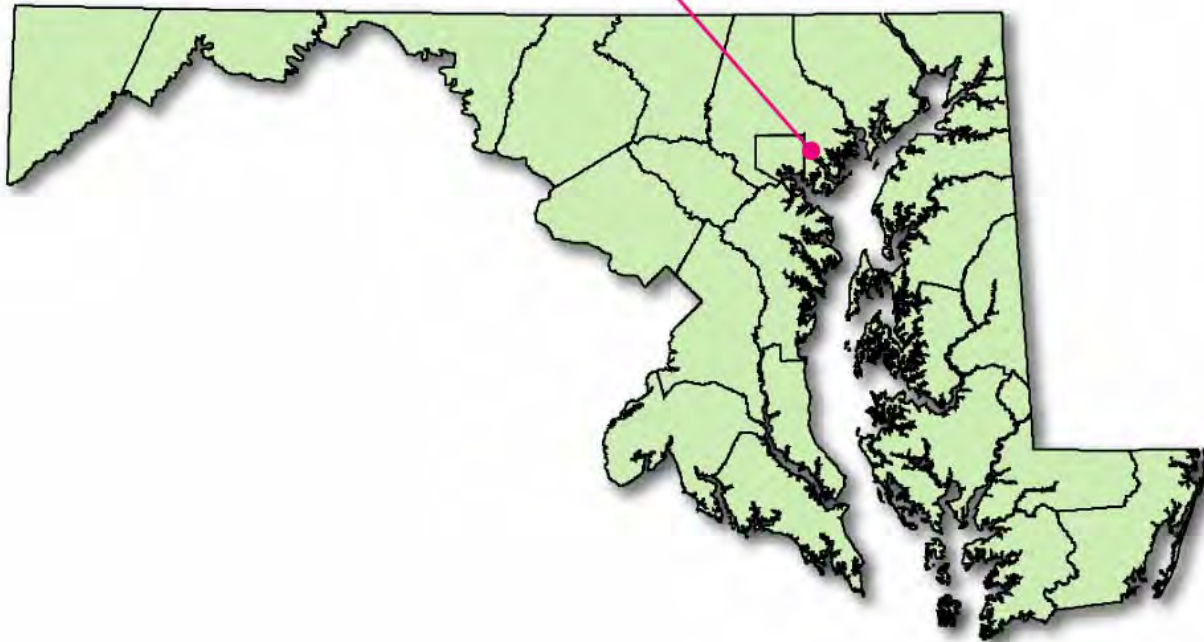
Module 1:

How to Determine Which Resources Should be Considered in an ICE Analysis



## Middle River Employment Center Access Study (MRECAS)

MRECAS





# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## Middle River Employment Center Access Study (MRECAS)

### PROJECT PURPOSE AND NEED

#### Purpose of the Project:

- To improve access from regional transportation network to enable planned economic development
- To increase utilization of established employment areas in the Middle River Employment Center

#### Need for the Project:

- Need for a sufficient level of access and mobility for the Employment Center
- Support of economic development
- Existing roads in the study area lack the capacity and continuity to provide adequate access to the entire MREC from the existing highway network



# ICE Analysis Training Program

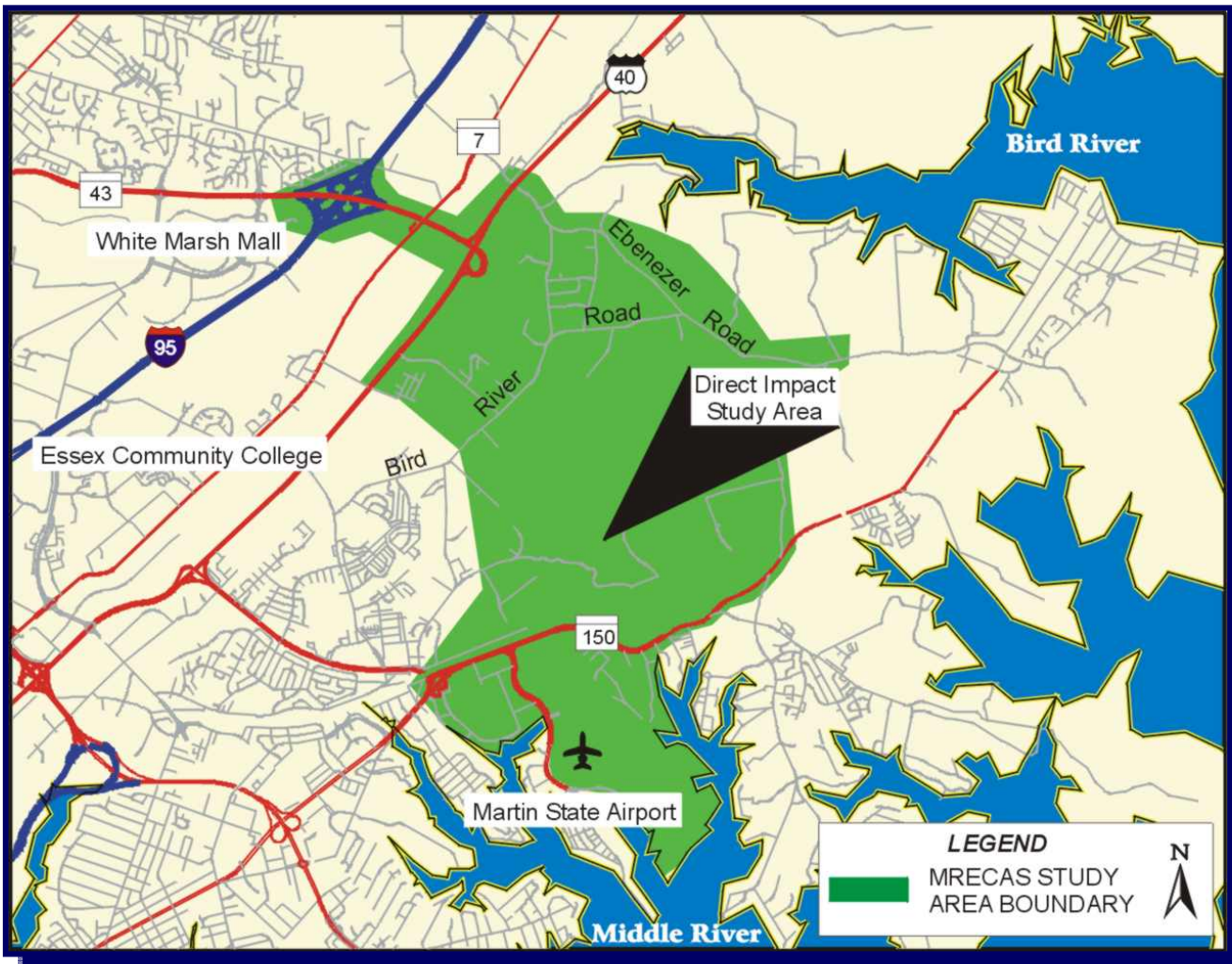
Module 1:

How to Determine Which Resources Should be Considered in an ICE Analysis



## Middle River Employment Center Access Study (MRECAS)

### Study Area Boundary





# ICE Analysis Training Program

## Module I:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## Middle River Employment Center Access Study (MRECAS)

### Resource Matrix

| Resource  | Boundary          | Time Frame | Approach  | Data Source  | Agency  |
|---|-------------------|------------|---|--|---|
| <del>Disruption to Community</del>                      | Sub-watersheds    | 1963-2020  | Trend analysis, overlay   | <del>*Aerial photography</del><br><del>*Historic mapping</del>   | Baltimore County Planning   |
| <del>Employment</del>                                   | Employment Center | 1960-2020  | Trend analysis, County projections  | <del>*Census</del><br><del>*Purpose and Need</del>   | <del>*US Department of Commerce</del><br><del>*Baltimore County Planning</del>  |
| <del>Population</del>                                   | Census Tracts     | 1960-2020  | Trend analysis  | <del>*Census</del><br><del>*County Projections</del>   | <del>*US Department of Commerce</del><br><del>*Baltimore County Planning</del>  |
| <del>Land Use (residential, industrial, farmland)</del> | Census Tracts     | 1963-2020  | <del>*Trend analysis, overlay</del><br><del>*Identify current and future capital projects</del>   | <del>*Aerial photography</del><br><del>*Baltimore County Master Plan</del><br><del>*MDOT Consolidated Trans. Program</del><br><del>*QP Land Use maps</del><br><del>*Pipeline Res. Development</del>                    | <del>*Baltimore County Planning</del><br><del>*Maryland Office of Planning</del><br><del>*Baltimore Metropolitan Council</del>                                  |
| <del>Historic Sites</del>                               | Census Tracts     | 1963-2020  | Trend analysis, overlay   | Historic mapping   | *Baltimore County Historical Society<br>*Maryland Historical Trust  |
| <del>Groundwater</del>                                  | Sub-watersheds    | 1963-2020  | Trend analysis  | *GIS files (MDE)<br>*Historical records  | *MDE<br>*DNR<br>*Baltimore County Planning  |
| <del>Surface Water Quality &amp; Quantity</del>         | Sub-watersheds    | 1963-2020  | <del>Trend Analysis Matrices</del><br><del>*Compare water quality data at specific monitoring sites, if available.</del><br><del>*Determine the change in the amount of impervious surfaces.</del><br><del>*Identify NPDES sites and overlay land use</del> | *Aerial photography<br>* Internet<br>* Maryland Stormwater Management (existing and proposed new regulations)  | *Baltimore County<br>*Maryland Department of the Environment (MDE)<br>*Save Our Streams<br>*Natural Resource Conservation Service                               |
| <del>Floodplains</del>                                  | Sub-watersheds    | 1963-2020  | <del>Trend Analysis Overlays</del><br><del>*Identify floodplain boundaries and overlay land use.</del>  | *FEMA maps<br>*Baltimore County GIS<br>*Aerial Photographs   | *SHA<br>*Baltimore County   |
| <del>Wetlands</del>                                     | Sub-watersheds    | 1963-2020  | Determine the change in acreage of wetlands based on work by MOP  | *National Wetland Inventory Maps, US Fish and Wildlife<br>*Baltimore County GIS<br>*Army Corps of Engineers Permit Files<br>*Maryland Department of Natural Resources<br>*"Wetlands of Maryland", US Fish and Wildlife | *Maryland Department of the Environment<br>*MOP<br>*Chesapeake Bay Foundation<br>*US Fish and Wildlife Service<br>*MD Department of Natural Resources<br>*DEPRM |
| <del>Wildlife, Terrestrial and Aquatic Habitat</del>    | Sub-watersheds    | 1963-2020  | <del>Trend Analysis, Overlays, Matrices</del><br><del>*Use MOP data to identify changes in forest acreage</del>   | * MOP GIS/Maps<br>* 1989 Maryland Reforestation Law<br>*Aerial Photography<br>*1990 Maryland State Forest Conservation Act<br>*Maryland Seed Tree Law  | *MOP<br>* USFWS<br>* Baltimore County<br>*MDE<br>*DEPRM   |
| <del>Noise</del>  |                   |            | <del>Qualitative discussion</del>   |  |   |
| <del>Air Quality</del>                                  |                   |            | <del>Consult BMC - Regional discussion</del>  |  |   |
| <del>Hazardous Materials</del>                          |                   |            | <del>Overlays</del><br><del>*Identify CERCLA List and overlay on land use</del>   | <del>*CERCLA List</del><br><del>*MDE lists</del>   | <del>*Environmental Protection Agency</del><br><del>*MDE</del>  |

Note: Strikethroughs indicate items that are inappropriately listed as ICE Analysis resources.



# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## Middle River Employment Center Access Study (MRECAS)

### Rationale for Removing Items From the ICE Analysis

| <i>Items Stricken</i>     | <i>Rationale</i>                             |
|---------------------------|--|
| * Disruption to Community | Not appropriate for a ICE Analysis           |
| Employment                | Not appropriate for a ICE Analysis           |
| Population                | Not appropriate for a ICE Analysis           |
| Land Use                  | Not appropriate for a ICE Analysis           |
| Noise                     | Not appropriate for a ICE Analysis           |
| Air Quality               | Addressed in Regional/TIP Conformity Process |
| Hazardous Material        | Not appropriate for a ICE Analysis           |

### Rationale for Retaining Resources in the ICE Analysis

| <i>Resources Included</i> | <i>Rationale</i>           |
|---------------------------|----------------------------|
| Historic Sites            | Direct Impacts             |
| Groundwater               | Well/Septic Considerations |
| Surface Water             | Direct Impacts             |
| Floodplains               | Direct Impacts             |
| Wetlands                  | Direct Impacts             |
| Wildlife Habitat          | Direct Impacts             |

**NOTE:** “Disruption to Community” as it is termed in the MRECAS environmental impact matrix, is not a resource and was not analyzed in the ICE Analysis. However, “communities” is considered a resource and can be analyzed as such in other ICE Analysis.



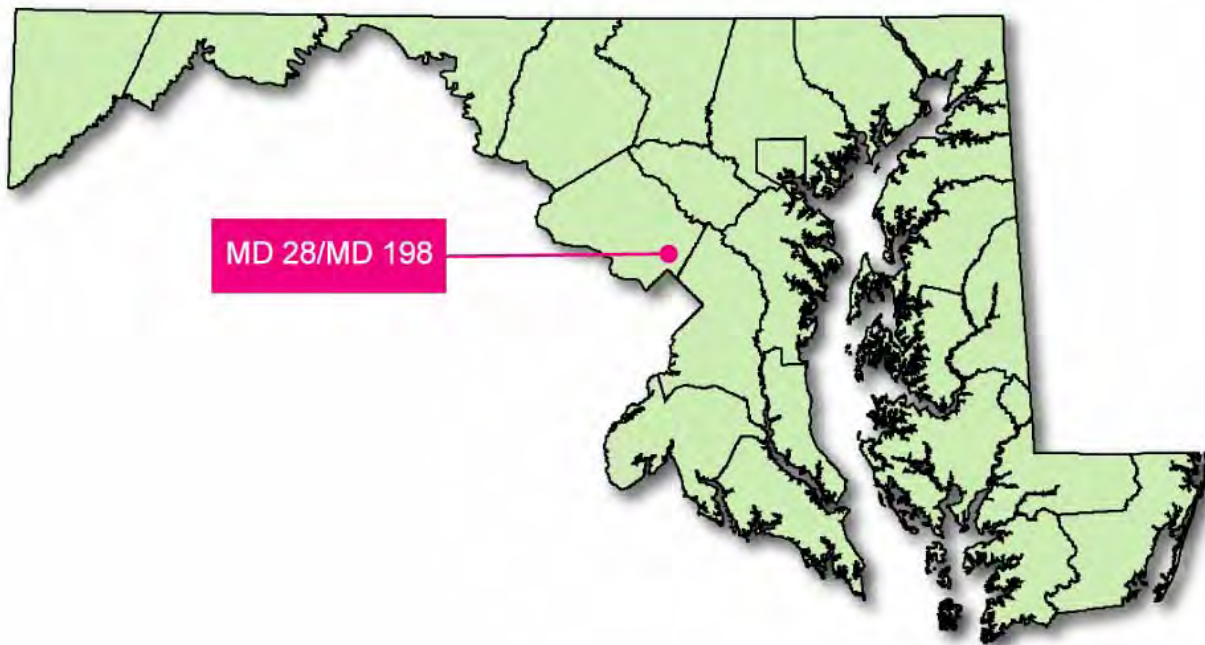
# ICE Analysis Training Program

Module 1:

How to Determine Which Resources Should be Considered in an ICE Analysis



## MD 28/198 Improvement Study Montgomery & Prince George's Counties





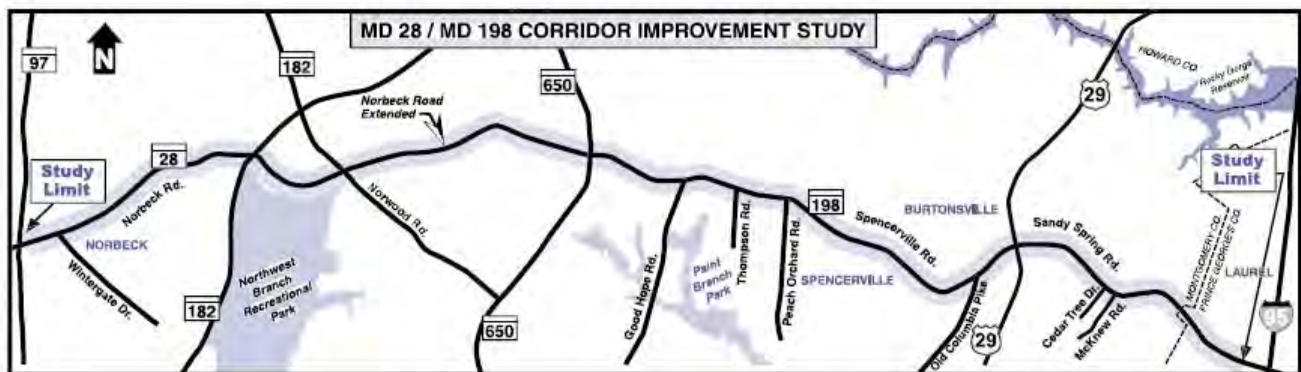
# ICE Analysis Training Program

## Module I:

How to Determine Which Resources Should be Considered in an ICE Analysis



## MD 28 / I98 Improvement Study Montgomery & Prince George's Counties



### PROJECT PURPOSE

- Relieve locally generated congestion while managing access
- Improve safety and traffic conditions for motorists, bicyclists and pedestrians along the MD 28/198 corridor across from intersecting roads; and
- Preserve the rural and suburban quality of life relative to localized traffic congestion while realizing the local planning visions for the communities along the corridor

### PROJECT NEED

- MD 28/198 are currently operating near capacity in some areas
- Portions of the corridor is experiencing higher than state average collision rates
- Sidewalks and Bicycle facilities do not exist in portions of the corridor



# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## MD 28/198 Improvement Study Montgomery & Prince George's Counties

### DETERMINING ICE Analysis RESOURCES

Resources directly or secondarily effected by the project was the basis for those resources examined in the ICE Analysis.

Therefore, a summary of direct effects was included in the ICE Analysis:

| Resource                               | Direct Effect               |
|--|-----------------------------|
| <b>Socio-Economic Resources</b>        |                             |
| Residential Displacements              | Maximum of 23 Residences    |
| Business Displacements                 | Maximum of 8 Businesses     |
| Park and Recreation Facilities         | Maximum of 2 Parks          |
| Right-of-Way                           | 123.9 Acres                 |
| <b>Cultural Resources</b>              |                             |
| Historic Sites                         | Maximum of 5 Sites          |
| Archeological Sites                    | 1 site impacted             |
| <b>Natural Environmental Resources</b> |                             |
| Surface Water                          | 5 Stream Crossings          |
| Groundwater                            | Several watersheds impacted |
| Wetlands/Aquatic Habitat               | Maximum of 1.37 Acres       |
| Floodplains                            | Maximum of 5.2 Acres        |
| Woodland                               | 10-18 acres of impact       |





# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## MD 28/198 Improvement Study Montgomery & Prince George's Counties

| Resource                               | Direct Effect                           |
|--|---|
| <b>Socio-Economic Resources</b>        |   |
| Residential Displacements              | Maximum of 23 Residences                |
| Business Displacements                 | Maximum of 8 Businesses                 |
| Park and Recreation Facilities         | Maximum of 2 Parks                      |
| Right of Way                           | 123.9 Acres                             |
| Agricultural/Farmland                  | No anticipated impacts (not a resource) |
| <b>Cultural Resources</b>              |   |
| Historic Sites                         | Maximum of 5 Sites                      |
| Archeological Sites                    | 1 site impacted                         |
| <b>Natural Environmental Resources</b> |   |
| Surface Water                          | 5 Stream Crossings                      |
| Groundwater                            | Several watersheds impacted             |
| Wetlands/Aquatic Habitat               | Maximum of 1.37 Acres                   |
| Floodplains                            | Maximum of 5.2 Acres                    |
| Woodland                               | 10-18 acres of impact                   |
| Rare, Threatened & Endangered Species  | No Species Present (not a resource)     |



# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## MD 28/198 Improvement Study Montgomery & Prince George's Counties

| Resource                                  | Available Data  | Data Sources   |
|---|---|--|
| <b>Socio-Economic Resources</b>           |   |  |
| Community Impacts                         | <ul style="list-style-type: none"> <li>• Aerial Photos</li> <li>• Historic Maps</li> <li>• Census Records</li> <li>• Land Use Mapping</li> </ul>                          | <ul style="list-style-type: none"> <li>• M-NCPPC</li> <li>• Maryland Dept. of Planning</li> <li>• Montgomery Dept. of Planning</li> <li>• Prince George's Dept. of Planning</li> <li>• U.S. Census Bureau</li> <li>• Traffic Data</li> </ul> |
| <b>Cultural Resources</b>                 |   |  |
| Historic Structures & Archeological Sites | <ul style="list-style-type: none"> <li>• Aerial Photos</li> <li>• Historic Maps</li> <li>• Historical Site Records</li> <li>• Land Use Mapping</li> </ul>                 | <ul style="list-style-type: none"> <li>• M-NCPPC</li> <li>• Maryland Historical Trust</li> <li>• National Register of Historic Places</li> </ul>   |
| <b>Natural Environmental Resources</b>    |   |  |
| Surface Water/Floodplains                 | <ul style="list-style-type: none"> <li>• Stream Quality Records</li> <li>• Aerial Photography</li> <li>• NPDES Permit Data</li> </ul>                                     | <ul style="list-style-type: none"> <li>• Environmental Agencies (i.e., DNR, USGS, EPA, MDE)</li> <li>• M-NCPPC</li> <li>• Maryland Biological Stream Survey</li> </ul>   |
| Groundwater                               | <ul style="list-style-type: none"> <li>• Historic Records</li> <li>• Well Data</li> </ul>   | <ul style="list-style-type: none"> <li>• Environmental Agencies (i.e., EPA, MDE, USACE)</li> <li>• MD Geological Survey</li> </ul>   |
| Wetlands/Aquatic Habitat                  | <ul style="list-style-type: none"> <li>• Large-scale wetland mapping</li> <li>• Wetland Permit Data</li> <li>• Land Use Data</li> <li>• Macroinvertebrate Data</li> </ul> | <ul style="list-style-type: none"> <li>• National Wetlands Inventory</li> <li>• Project Mapping</li> <li>• Maryland Biological Stream Survey</li> <li>• Environmental Agencies (i.e., DNR, USGS, EPA, MDE)</li> </ul>                        |
| Woodlands                                 | <ul style="list-style-type: none"> <li>• Current/Historic Aerials</li> <li>• Land Use Data</li> </ul>   | <ul style="list-style-type: none"> <li>• NRCS</li> <li>• M-NCPPC</li> <li>• Maryland Department of Planning</li> <li>• DNR</li> </ul>  |



# ICE Analysis Training Program

Module 1:

How to Determine Which Resources Should be Considered in an ICE Analysis



## Group Exercise

### Determining Resources



# ICE Analysis Training Program

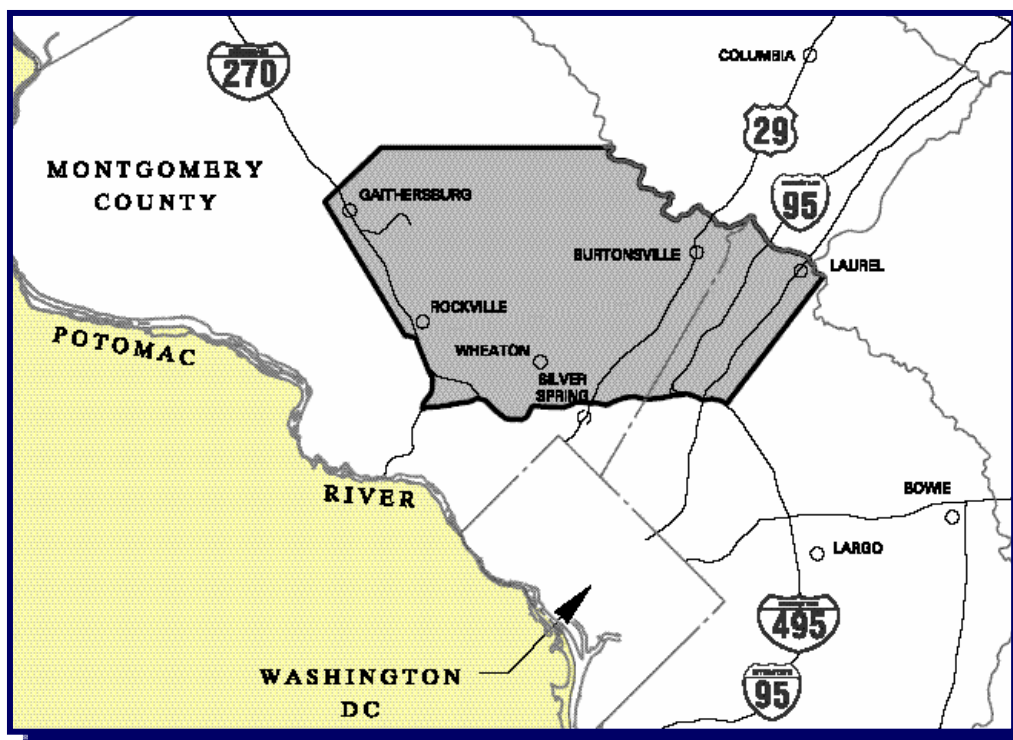
## Module I:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## ICC PROJECT PURPOSE AND NEED

- Increase community mobility and safety
- Facilitate the movement of goods and people
- Provide cost-effective transportation infrastructure to serve existing and future development reflecting local land use planning objectives
- Restore the natural, human, and cultural environments
- Advance homeland security





# ICE Analysis Training Program

Module 1:

How to Determine Which Resources Should be Considered in an ICE Analysis



## ALTERNATIVES RETAINED FOR DETAILED STUDY NO ACTION

- **Improvements in the National Capital Region TPB 2004 CLRP**
- **More TDM measures such as transit and vanpool incentives**
- **Improvements are assumed to be in place by 2030 regardless of the ICC alternatives being considered**
- **Other major actions that are independent from the ICC study are either being studied or are underway in the study area and would be included in the No-Action Alternative. Each of these studies has its own unique project Purpose and Need and is separate from the ICC study**



# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## ALTERNATIVES RETAINED FOR DETAILED STUDY CORRIDOR I

- **18 miles from I-370/I-270 near the Shady Grove Metrorail Station to I-95 and US 1 south of Laurel**
- **16 of the 18 miles are located in Montgomery County and approximately 2 miles are in Prince George's County**
- **Alignment options are being considered in the vicinity of Rock Creek and Northwest Branch**
- **Corridor I includes six interchanges and two optional interchanges.**
- **Corridor I interchanges would be provided at MD 355, Shady Grove METRO Access Road, MD 97 (Georgia Avenue), MD 182 [Layhill Road (optional)], MD 650 (New Hampshire Avenue), Old Columbia Pike/US 29/Briggs Chaney Road, and Virginia Manor Road (optional)**
- **An at-grade intersection with US 1 is an option being considered**
- **A truncated option that would terminate the ICC at I-95, with no connection to US 1 and thus no interchange with Virginia Manor Road or intersection with US 1, is also under consideration. The Truncated Option would reduce the length of Corridor I in Prince George's County by about one mile**



# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## ALTERNATIVES RETAINED FOR DETAILED STUDY CORRIDOR 2

- **20 miles from I-370/I-270 near the Shady Grove Metrorail Station to I-95/US 1 south of Laurel**
- **16 of the 20 miles are located in Montgomery County and approximately 4 miles are in Prince George's County**
- **Alignment options, are in the vicinity of Rock Creek, Norbeck (just east of MD 97), Spencerville, Burtonsville and Fairland (MD 198 near the Montgomery County/Prince George's County line)**
- **Corridor 2 includes seven interchanges along with two optional interchanges, and would displace the 2.5 miles on Norbeck Road Extended between MD 28 and MD 198**
- **Corridor 2 interchanges would be provided at MD 355, Shady Grove Metro Access Road, MD 97 (Georgia Avenue), MD 182 (Layhill Road-optional), MD 650 (New Hampshire Avenue), US 29, Contee Road, I-95 and Virginia Manor Road (optional)**
- **An at-grade intersection would be provided at US 1**
- **As with Corridor 1, an option to truncate the ICC at I-95 is also being considered. The Truncated Option would reduce the length of Corridor 2 in Prince George's County to about three miles**



# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## Agency Resource Concerns

### Who Were The Key Resource Agencies For This Project?

- MDE
- ACOE
- NPS
- USFWS
- DNR
- MHT
- MDP
- M-NCPPC
- Others

### Terrestrial Habitat / Wildlife

- Deer Fencing
- Small Amphibian Crossings
- Vernal Pool Measures
- Wildlife Connectivity
- FIDS

### Water Quality

- Stormwater Management
- Mitigation
- Stream Seep Protection
- Stone Blankets
- Impacts to tributary to North Branch, Good Hope, and the Little Paint Branch
- Bridge crossings over Paint Branch/Gum Springs and Northwest Branch
- Fish Relocation/Brown Trout Populations

### Parklands/Recreational Facilities

- Bike Trails
- 4(f) Impacts/Mitigation

### Wetlands

- Additional Wetland Impacts Than From Previous Study
- Impacts to high function wetlands

### Floodplains

- Roadway effects on Floodplain elevations





# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



## Public Resource Concerns

### Concerns Included:

- Noise and air pollution
- Project Costs
- Impact on safety
- Community Cohesion
- Tolls
- Bike paths
- Truck access/congestion
- Environmental Concerns
- Visual Quality
- Traffic Statistics
- Emissions
- Inducing Growth
- Long Term Benefits
- Taxes
- Transit Alternatives
- Property Values
- Low-Income/Minority Communities
- Underground Railroad areas

### Who Were Included as the Public?

- Citizens
- Elected Officials
- Home Owners Associations
- Civic Associations
- Business Associations
- PTA's
- Schools
- Other



# ICE Analysis Training Program

## Module 1:

### How to Determine Which Resources Should be Considered in an ICE Analysis



#### **Review Resources (Refer to Map Hand Out):**

- **Parks**
- **Wetland**
- **Floodplains**
- **Streams**
- **Forest**
- **Communities**
- **Historic Structures/Districts**



# ICE Analysis Training Program

Module 1:

How to Determine Which Resources Should be Considered in an ICE Analysis



- **Which resources should be included in your ICE Analysis?**

**Pick up your Polling Devices!**