

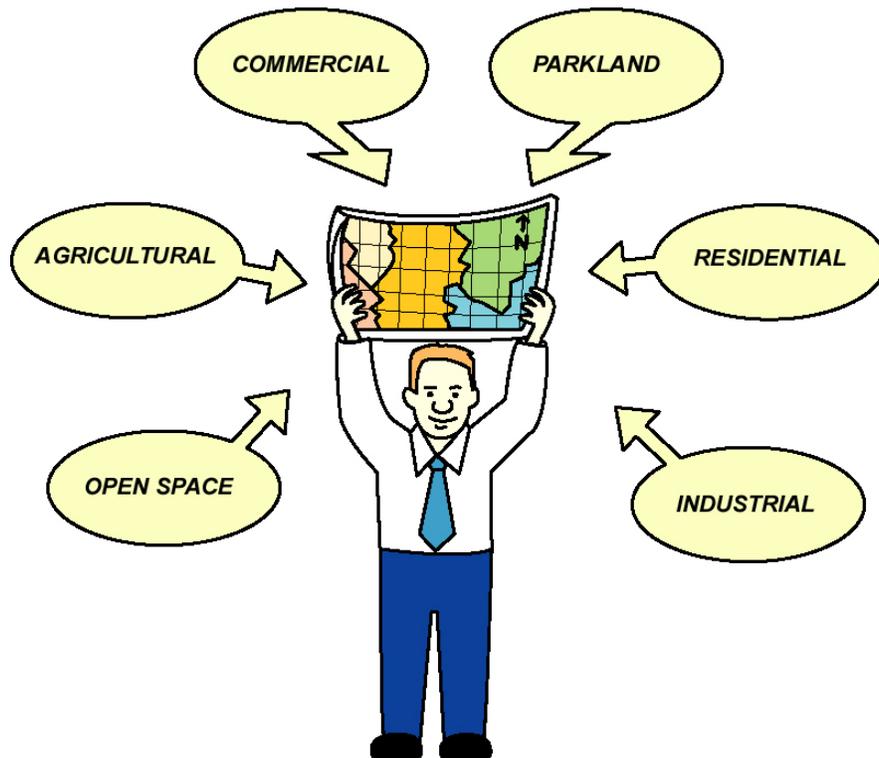


ICE Analysis Training Program

Module 4:
How to Develop Land Use Information



How to Develop Land Use Information





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Factors to Consider



- **Developing and mapping land use information is part of the analysis section of conducting an ICE Analysis.**
- **Because of its importance to the analysis process, the development of land use is being treated as a separate section in the training seminar.**

KEY POINTS TO REMEMBER

Be aware of how the development and mapping of land use information fits into the overall analysis of resources. Note that the analysis section of conducting an ICE Analysis is discussed in detail in Module 5.





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Land Use Types Generally Considered

- **Agricultural**
- **Residential**
- **Commercial**
- **Industrial**
- **Open Space**
- **Parkland**
- **Other**



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Land Use Considerations

Land Use Considerations

- **Past Land Use**
- **Present Land Use**
- **Future Land Use**





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Land Use Considerations

Why Develop Land Use Information?

- **Past Land Use**
 - Provides a baseline from which trends can be developed.
- **Present Land Use**
 - Provides an intermediate year from which trends can be determined.
 - Provides a current analysis year to conduct overlay analysis.
- **Future Land Use**
 - Provides a build-out analysis year to conduct overlay analysis.



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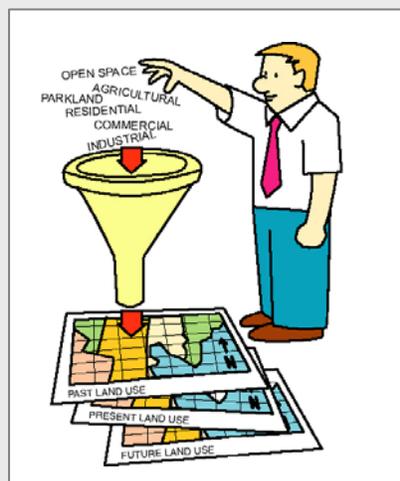
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Mapping Land Use

KEY POINTS TO REMEMBER

Be sure to map land use once all available data sources have been collected. Land use mapping is key for both preparing data for the analysis methodologies (that will be presented in module 5) to help reviewers in seeing areas of past, present, and future effects. Only land use information within the ICE Analysis geographical boundary should be mapped.





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Past Land Use

Valuable Past Land Use Data Sources

Key Data Source	Description	SHA Availability
Aerial Photography	Digital Orthophotography from DNR, USGS or county government, Spot satellite imagery and SHA Project Planning archived aerial photography	
State Roads Commission	Annual Highway Improvement Records	
EPA Region III/DOT	Past NEPA documents disclose the impacts of past projects	
SHA's Regional Intermodal Planning Division (RIPD)	Past Master Plans and Major Development Matrices	
Maryland Dept. of Planning Land Use Maps	MDP mapping provides Anderson Classification land use mapping for past years.	
ACOE Permit Files	Provides way of tracking development through Army Corps of Engineers permit files	
MDE Permit Files	Provides way of tracking development through Maryland Department of Environment permit files	
Metropolitan Planning Organizations	Used to identify land use trends through past Long Range Plans (LRP) and Transportation Improvement Plans (TIP)	



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Present Land Use

Valuable Present Land Use Data Sources

<i>Key Data Source</i>	<i>Description</i>	<i>SHA Availability</i>
Local Planners	Local/Private development proposed for the "near future" (Within 1 - 5 years)	
Regional Intermodal Planning Division (RIPD)	Major Development Projects	
SHA Access Permits	Additional screening for local development	
SHA Projects having received location approval	Provides insight to land use that will potentially change due to a future SHA project.	
ACOE Permit Files	Provides way of tracking development through Army Corps of Engineers permit files	
MDE Permit Files	Provides way of tracking development through Maryland Department of Environment permit files	
EPA Region III	NEPA documents for all federally funded projects, including non-highway	
Aerial Photography	Digital Orthophotography from DNR, USGS or county government, Spot and other current satellite imagery that is readily available	
Maryland Department of Planning land use/cover maps	Digital or paper county-wide land use/cover maps published by the Maryland Dept. of Planning	
Travel Forecasting	Used to determine what impacts existing travel patterns and volumes have on land use.	

NOTE: Near future (1 - 5 years) counts in present time period for land use.



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Present Land Use

KEY POINTS TO REMEMBER

The appropriate development size(s) (i.e., subdivisions of a certain number of units, etc.) to be analyzed must be determined on a project-by-project basis. It is not necessary to scour the entire ICE Analysis study area for proposed development such as individual residential lots less than one acre. Be sure to document the rationale for why a particular development size was chosen.





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Present Land Use

SHA Regional & Intermodal Planning Division (RIPD) Major Development Matrix

- **Urban Developments - 500 units residential, 5,000 square feet commercial and 1,000,000 square feet industrial.**
- **Rural developments - 250 units residential, 2500 square feet commercial and 500,000 square feet industrial.**



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Future Land Use

Valuable Future Land Use Data Sources

Key Data Source	Description	SHA Availability
Metropolitan Planning Organizations (MPO's)	Constrained Long Range Plan (CLRP)	
Regional Intermodal Planning Division (RIPD)	Major Development Matrix and local Master Plans	
Travel Forecasting	Used to determine what impacts existing travel patterns and volumes have on land use and also source of land use data since there are specific land use assumptions used to develop no-build, ADTs.	
Local Planners	Local/Private proposed development	
Local Master Plans	Provide insight to areas designated for growth and also general trends for population and employment growth	
SHA Access Permits	Additional screening for local development	
SHA Projects having received location approval	Provides insight to land use that will potentially change do to a future SHA project.	
Federal Register	Announces EIS, NOI's and public hearings and 404 permits	
EPA	Data regarding EJ and regional water quality	
Maryland Dept. of Planning	Land Use Forecast Maps	
Chesapeake Bay Foundation	Provide data on proposed major works /development projects	
Sierra Club	Provide data on proposed major projects/development works	



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Future Land Use

Development of future land use scenarios (done for each alternative including the no-build) for ICE Analysis is primarily based on two sources:

- **Travel Forecasts - Review and map future land use with assumptions based on travel forecasts.**
- **Local/Regional Planning Resources - Meet with local planners and utilize planning resources such as the Regional & Intermodal Planning Division (RIPD), Metropolitan Planning Organizations, the Constrained Long Range Plan (CLRP) and local master plans to develop future land use scenarios.**



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Key Future Land Use Data Sources

KEY POINTS TO REMEMBER

In situations where two or more different future land use scenarios are predicted for a project alternative:

- **Determine the scenario that will most likely reflect future land use. (Hint: consider age and source of plans as a major factor).**
- **Meet with the jurisdiction/agency to resolve discrepancies.**
- **Try to come to an agreement; if you can't, determine how to proceed on a project by project basis.**





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Future Land Use

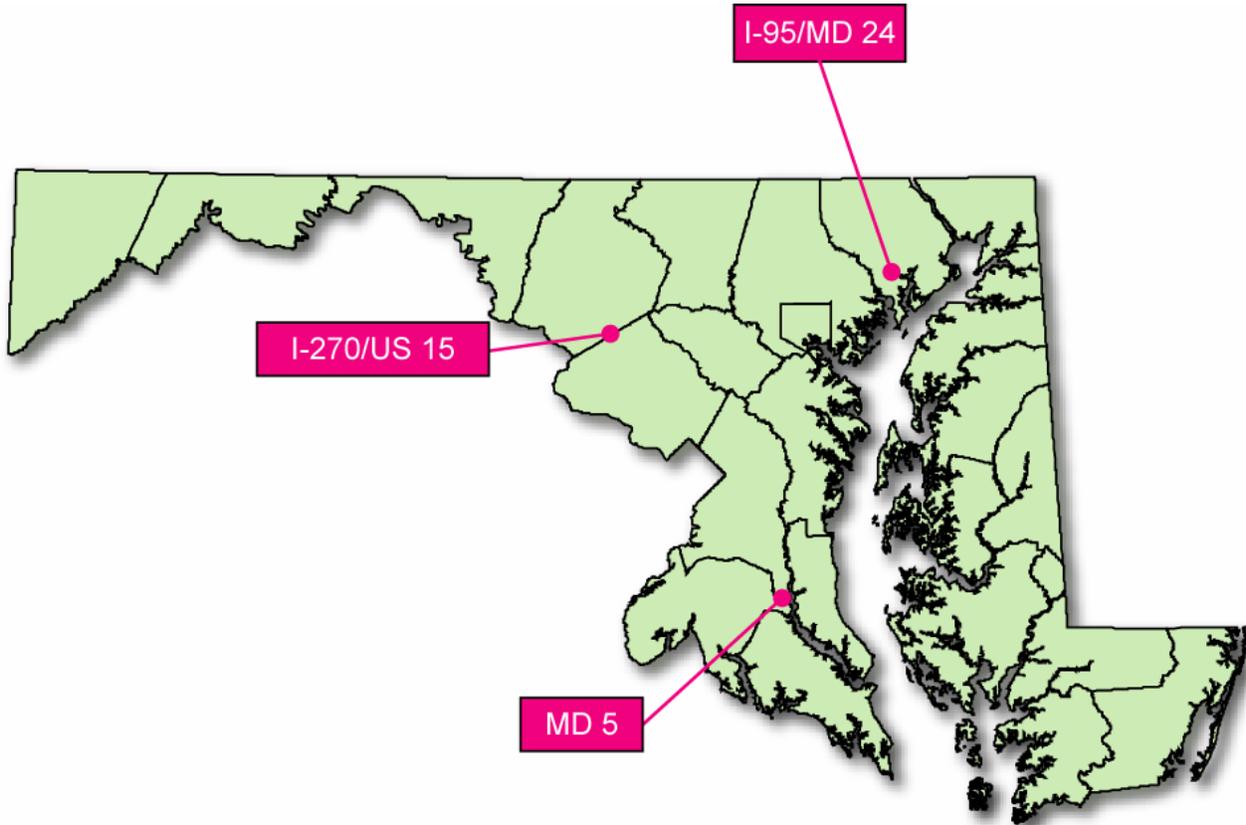
FUTURE LAND USE DATA SOURCES

- In special cases, “Expert Land Use Panels” can be convened to identify future land use scenarios, if a project is especially complex or if local jurisdictions, agencies or special interest groups disagree that a particular land use will or will not occur. The “Expert Land Use Panels” are not required when developing land use for an ICE Analysis, but are considered on a project by project basis.



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Case Studies

- **MD 5 - Hughesville Transportation Improvement Project**
- **I-270/US 15 Multi-Modal Corridor Study Draft EIS**
- **I-95/MD 24 Improvement Study Categorical Exclusion (CE)**

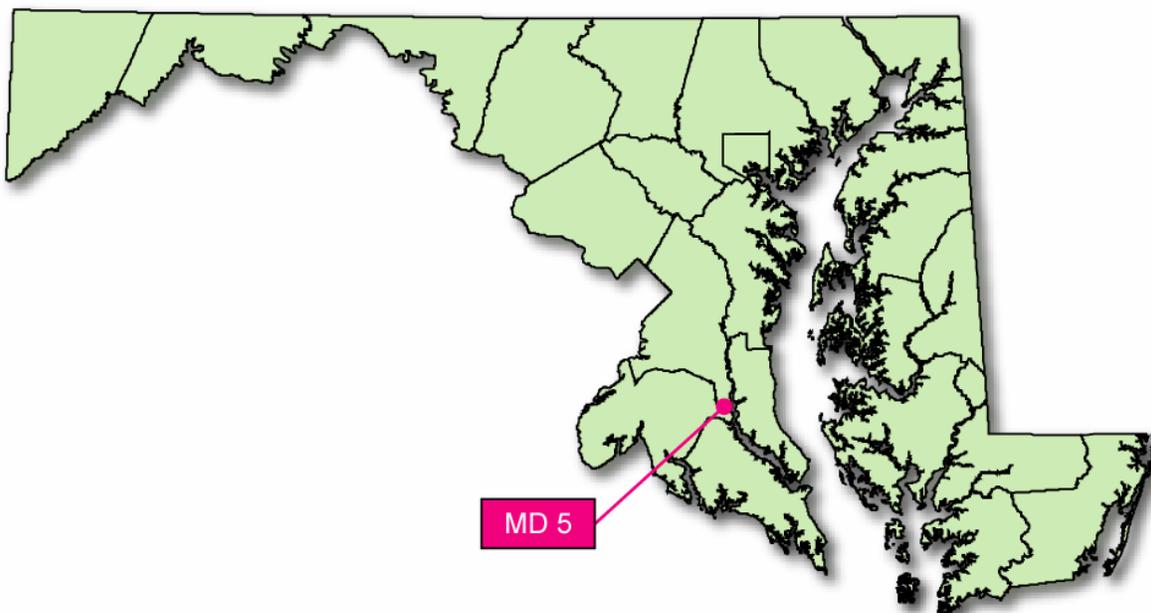


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MD 5 – Hughesville Transportation Improvement Project



PROJECT PURPOSE

The purpose of the MD 5 - Hughesville Transportation Improvement Project was to address and alleviate the following:

- Existing/future congestion at the MD 5/MD 231 intersection; and
- Future congestion along MD 5 in the Hughesville area;
- Existing/future safety at the MD 5/MD 231 intersection and along MD 5 in the Hughesville area.



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MD 5 – Hughesville Transportation Improvement Project

Time Frame	Considered		Data Source	Land Use Development From Data Sources
	Yes	No		
Past	☐		MDP land use maps, Charles Co. Master Plan, Charles Co. Planning Office	Base past land use scenario for certain resources
Present	☐		Alternative Retained for Detailed Study ROW, 1994 MDP Land use maps, 1993 DNR Aerial Photos, Charles Co. Master Plan, CTP	Impacts from Alternatives, base land use classifications, near future development
Future	☐		Proposed Major Developments (Charles County), Charles County Master Plan, CTP, Charles County Planning Office	Growth in specialized land use districts, proposed transportation plans, zoning implications, proposed major developments, population forecasts.

MD 5 Land Use Development

**MD 5
Land
Use Note**

Note that future development, as analyzed in the MD 5 EA, generally falls within a 1-5 year time frame. Under current SHA Guidelines, this development would be interpreted as being within the “present” time frame.



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MD 5 – Hughesville Transportation Improvement Project

NAME	ID #	ACRES	LOTS	SFD	APPROVED
Major Subdivisions with Final Plat Approval					
Benedict Plantation	88-183	359.25	89	89	3/20/89
Old Blanford Estates II	91-011	46.6	14	14	12/6/93
Peach Tree Hollow	XPN970005	53.25	43	43	10/6/97
Woodlawn Manor	91-235	73.3	17	17	9/14/92
Swanson Creek Landing III	92-038	34.91	7	7	1/3/94
Carriage Crossing (Deer Run)	92-152	363	106	106	11/2/92
Trentino Estates	92-160	60	18	18	11/16/92
Murphy, Section II	94-070	40.5	15	15	12/4/95
Preliminaries Subject to New Subdivision Regulations					
Harvest Ridge	XPN960012	42.78	13	13	11/3/97
Valid Preliminary Subdivision Plans					
Eastern Hills	XPN950081	137.18	27	27	9/23/96

Source: CCPO-PGM. August 1998.

All proposed developments are single family detached residential subdivisions

**Proposed Major Developments
within the ICE Analysis Boundary**

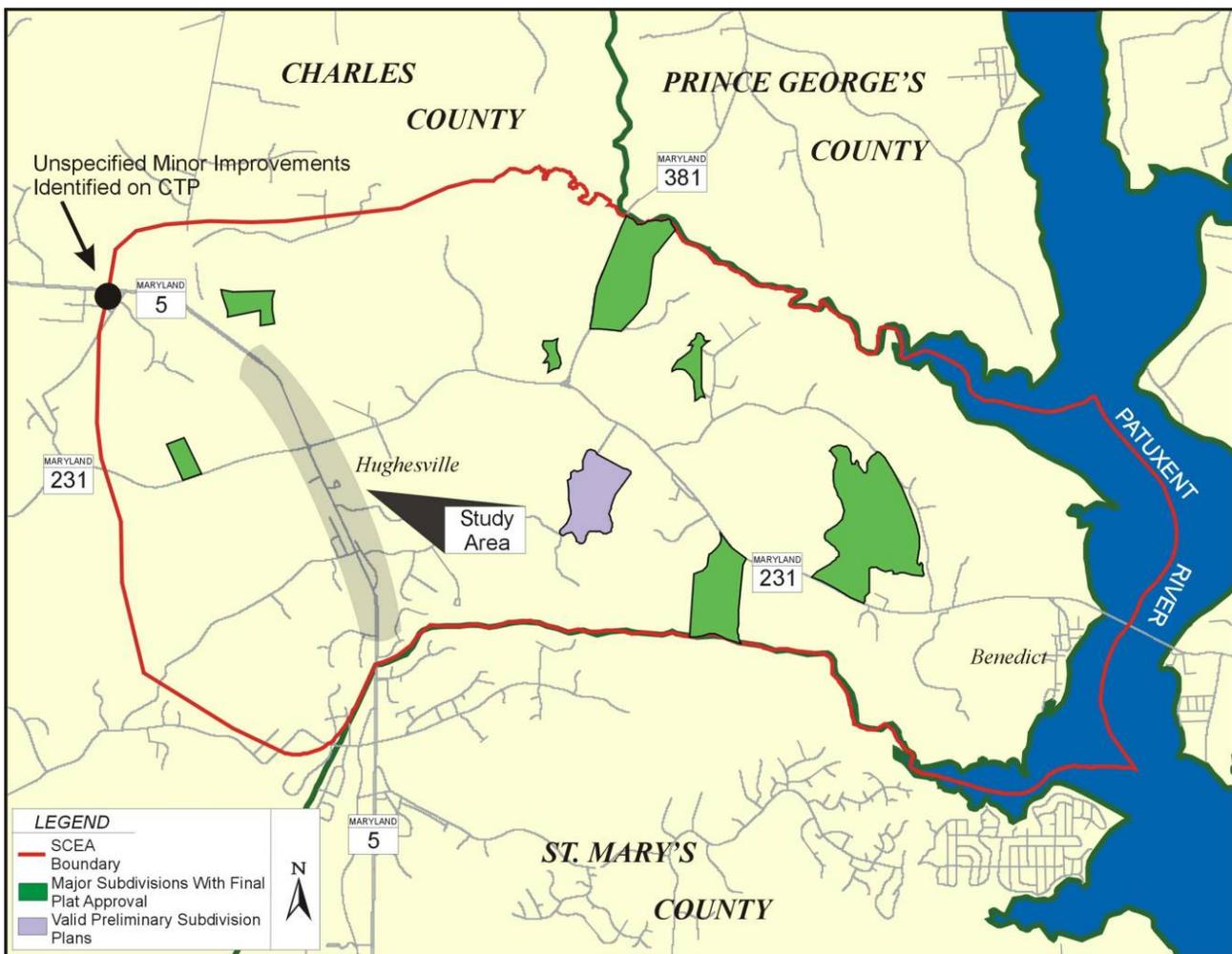


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MD 5 – Hughesville Transportation Improvement Project



Proposed Development and CTP areas
within the ICE Analysis Boundary



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MD 5 – Hughesville Transportation Improvement Project

ICE Analysis Guidelines recommend that land use from all three time frames be developed and mapped. Below are two main decisions in the ICE Analysis process for MD 5 that are not consistent with SHA's ICE Analysis Guidelines.

- **Only some of the information for the present time frame existed as readily available. Based on current SHA Guidelines the MD 5 ICE Analysis should document map development for all three time frames including rationale for not mapping existing readily available land use.**
- **Some of the analysis methodologies used in determining indirect and cumulative effects did not necessitate mapping past, present or future land use. (It is good practice not to select analysis methodologies prior to completing acquisition of all land use materials. The availability of land use mapping should guide the rationale for which analysis methodologies to use).**

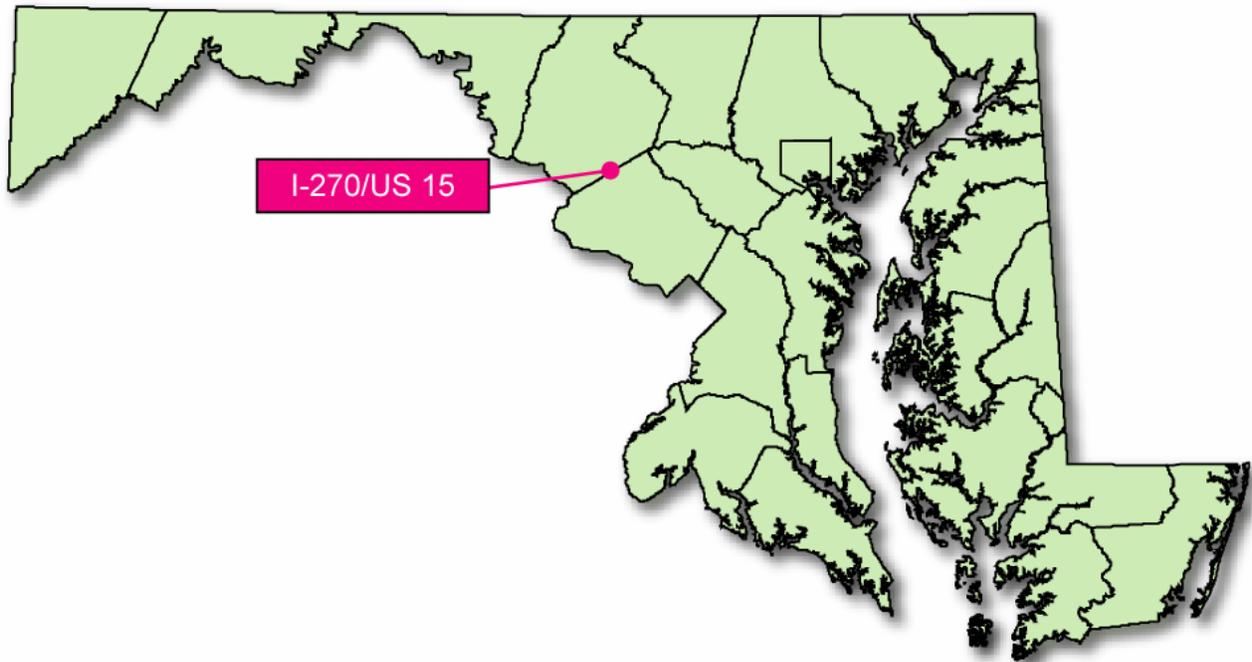


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I-270/US 15 Multi-Modal Corridor Study Draft EIS





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I-270/US 15 Multi-Modal Corridor Study Draft EIS



PROJECT PURPOSE

The purpose of the I-270/US 15 Multi-Modal Corridor Study is to investigate options to address congestion and improve safety conditions along the I-270/US 15 Corridor.



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I-270/US 15 Multi-Modal Corridor Study Draft EIS

ESTABLISHMENT OF AN EXPERT LAND USE PANEL (ELUP)

- Indirect and cumulative effects most often occur as a result of changes in land use. In order to identify potential future land use in the region SHA established a panel of land use experts to address this issue.
- The Expert Land Use Panel (the Panel) was composed of knowledgeable local and national experts who used their expertise as well as a comprehensive set of background materials to evaluate the changes that could result from alternate highway and transit improvements proposed along the I-270/US 15 Corridor in Upper Montgomery and Frederick counties.
- The Panel was asked to allocate future employment and population growth (for the year 2025) to 19 Forecast Zones for four specific transportation alternates that have been developed as part of the Corridor Study.



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I-270/US 15 Multi-Modal Corridor Study Draft EIS

LAND USE EXPERT PANEL FORECASTS OF POPULATION AND EMPLOYMENT

- The panel's analysis consisted of forecasting future population and employment in the study area and allocating this future population and employment to 19 forecast zones. The differences in population and employment resulting from the build alternates may indicate changes in land use that could result in indirect and cumulative effects to resources



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I-270/US 15 Multi-Modal Corridor Study Draft EIS

LAND USE EXPERT PANEL ALTERNATES CONSIDERED

- **Base Case Master Plan:** This alternate (BCMP) is based on the transportation improvements described in the Montgomery and Frederick County Master Plans. It includes some additional road construction and transit that is not included in the No-Build.
- **Alternate 1 (No-Build):** This alternate envisions no new construction beyond minor improvements already programmed. An example of a minor improvement is the extension of Shockley Drive to Spectrum Drive in the I-270 Technology Park. The extension would provide a more direct connection between two office parks located on either side of I-270 and would relieve traffic congestion in the vicinity of the MD 85/I-270 interchange.
- **Alternate 2 (LRT and Highway):** This alternate calls for highway improvements in both counties and the construction of LRT from the southern end of the Corridor north to MD 121 in Montgomery County.
- **Alternate 3 (Bus, HOV, and Highway):** Under this alternate, additional bus service on the HOV lanes is proposed for both counties. The highway improvements will be the same as those in Alternate 2.

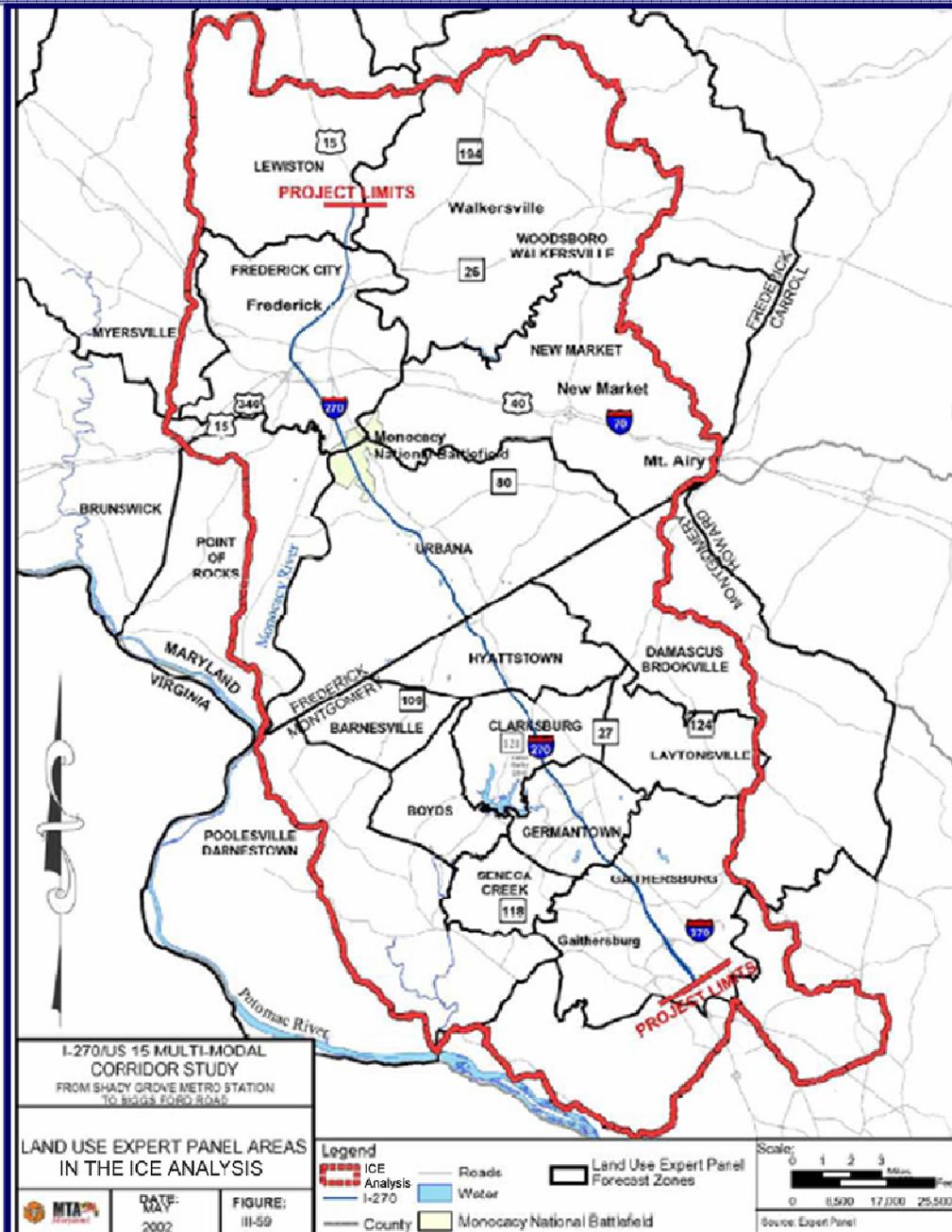


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I-270/US 15 Multi-Modal Corridor Study Draft EIS





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I-270/US 15 Multi-Modal Corridor Study Draft EIS

LAND USE EXPERT PANEL CONCLUSIONS

- **According to the SHA Guidelines, “If an “expert land use panel” results in future land use scenarios substantially different from those shown on local land use plans, document those effects.”**
- **Overall, the Land Use Expert Panel did not find substantial difference for development between the alternates studied. For the most part, anticipated development matches that planned for by the counties.**
- **The project team took the population and employment forecasts developed by the panel and used them to identify potential changes in future land use.**
- **The differences in population and employment resulting from the build alternates may indicate changes in land use that could result in indirect and cumulative effects to resources.**

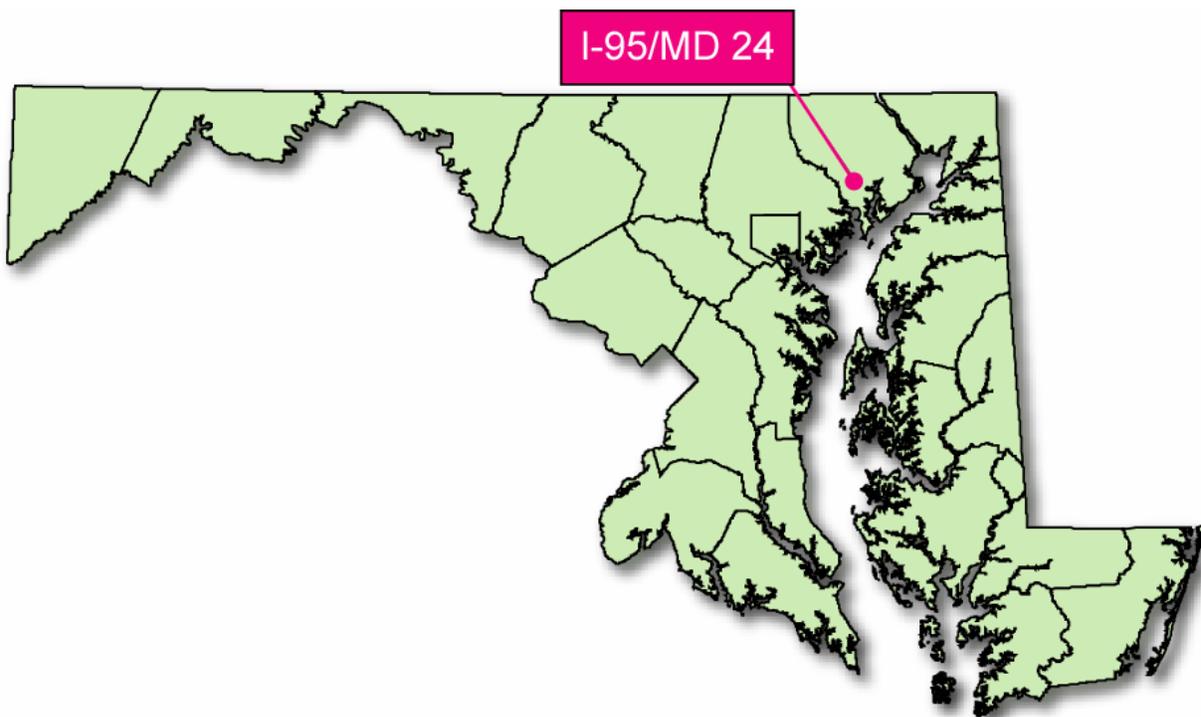


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I-95/MD 24 Improvement Study Categorical Exclusion (CE)



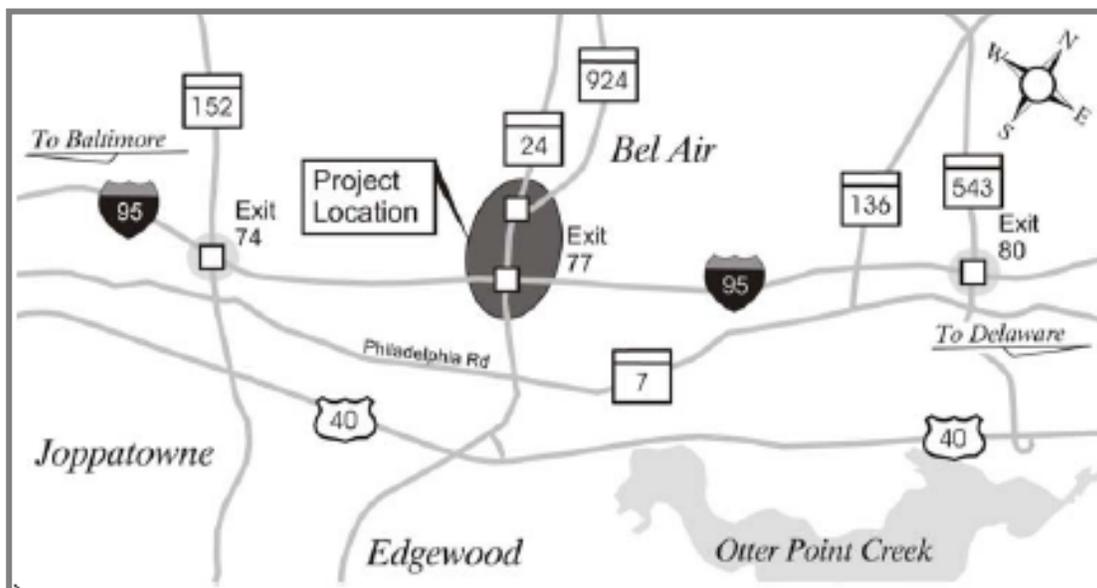


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I-95/MD 24 Improvement Study Categorical Exclusion (CE)



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.



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

DATA AVAILABILITY

Past Land Use

- The primary data source available for assessing land use in the 1977 time period is an aerial photograph, of the ICE Analysis study area, from the *1975 Harford County Soil Survey*.

Present Land Use

- The primary data source available for assessing land use for the present time period is a 2003 aerial photograph provided by SHA

Future Land Use

- The future land use scenario was established by overlaying parcels of land recommended for development with the present land use scenario.



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

FINDINGS

Past Land Use

- The ICE Analysis study area in the past time frame contained mostly forested, farmland, open space and residential land use.

Present Land Use

- Currently, land use within the ICE Analysis Boundary consists of Commercial, Industrial, Residential, Public Land, Open Space, Forest and Transportation.

Future Land Use

- Several development projects are proposed within the ICE Analysis Boundary (Industrial land use).



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

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)

**Future Development
within the ICE Analysis Boundary**

