Millsboro-South Area

Working Group

Meeting No. 8

April 27, 2005

Working Group Members

Ronald Atherton
Business Owner

Jim Bennett
Bennett Orchard

Joan Boyce
Millsboro / Dagsboro Chamber of Commerce

Joe Brake
First State Community Action Agency

Eric Buehl
Center for the Inland Bays

Lynn Bullock
Millsboro Volunteer Fire Company

Donald Collins
Sussex County Farm Bureau

S. Bradley Connor
Mayor, Dagsboro

Robert Daisey
President, Frankford Council

Mark Davis
Delaware Department of Agriculture

Preston Dyer
Developer

Peter Frederick
Mayor, Fenwick Island

Richard Kautz
Sussex County Planning & Zoning Commission

Faye Lingo
Town Manager, Millsboro

Roger Marino
Mountaire Farms, Inc.

Pam McComas
Bethany/Fenwick Chamber of Commerce

John Mitchell
Indian River School District

Margaret Mitchell
Millsboro Historical Society

Tran Norwood
Nanticoke Indian Association

Clifton Parker
Farmer

Bill Pfaff
Delaware Small Business Development Center

Mike Simmons
Delaware Department of Transportation

Robert Stuart
Sussex County Emergency Medical Services

Gary Taylor
Town Manager, Selbyville

John Thoroughgood
Millsboro Town Council Planning Commission

Ann Marie Townshend
Office of State Planning Coordination

Marissa VonVille
La Esperanza, Inc.

Michael Warrington
Delaware State Police, Troop 4

George White
Townsends, Inc.

Agenda

- **5:30 Call Meeting to Order** — **Bob Kramer**
- **5:35 Opening Remarks** — **Monroe Hite, III**
- **5:40 Status Reports**
  - **Traffic Analysis** — **Jeff Riegner**
  - **Cost Estimates** — **Joe Wutka**
  - **Economic Impact Analysis** — **Jeff Riegner**
- **6:20 Review of Alternatives and Impacts** — **Project Team**
  - **On-alignment Alternatives**
  - **Eastern Bypass Alternatives** (including new Alternatives B4-B6)
  - **Western Bypass Alternatives** (including changes to Alternatives I6-I7)
- **7:30 Group Discussion** — **Project Team**
- **8:30 Summary of Group Discussion** — **Bob Kramer**
- **8:55 Next Steps / Closing Remarks** — **Monroe Hite, III**
- **9:00 Adjourn** — **Bob Kramer**

Project Notebook

- Tab 1: PowerPoint Slides
- Tab 2: Plan Changes
  - Addition of eastern bypass Alternatives B4, B5, and B6
  - Modification of western bypass Alternatives I6 and I7
- Tab 3: Updated Matrix
- Tab 4: Revised Public Workshop Schedule

Recent Meetings

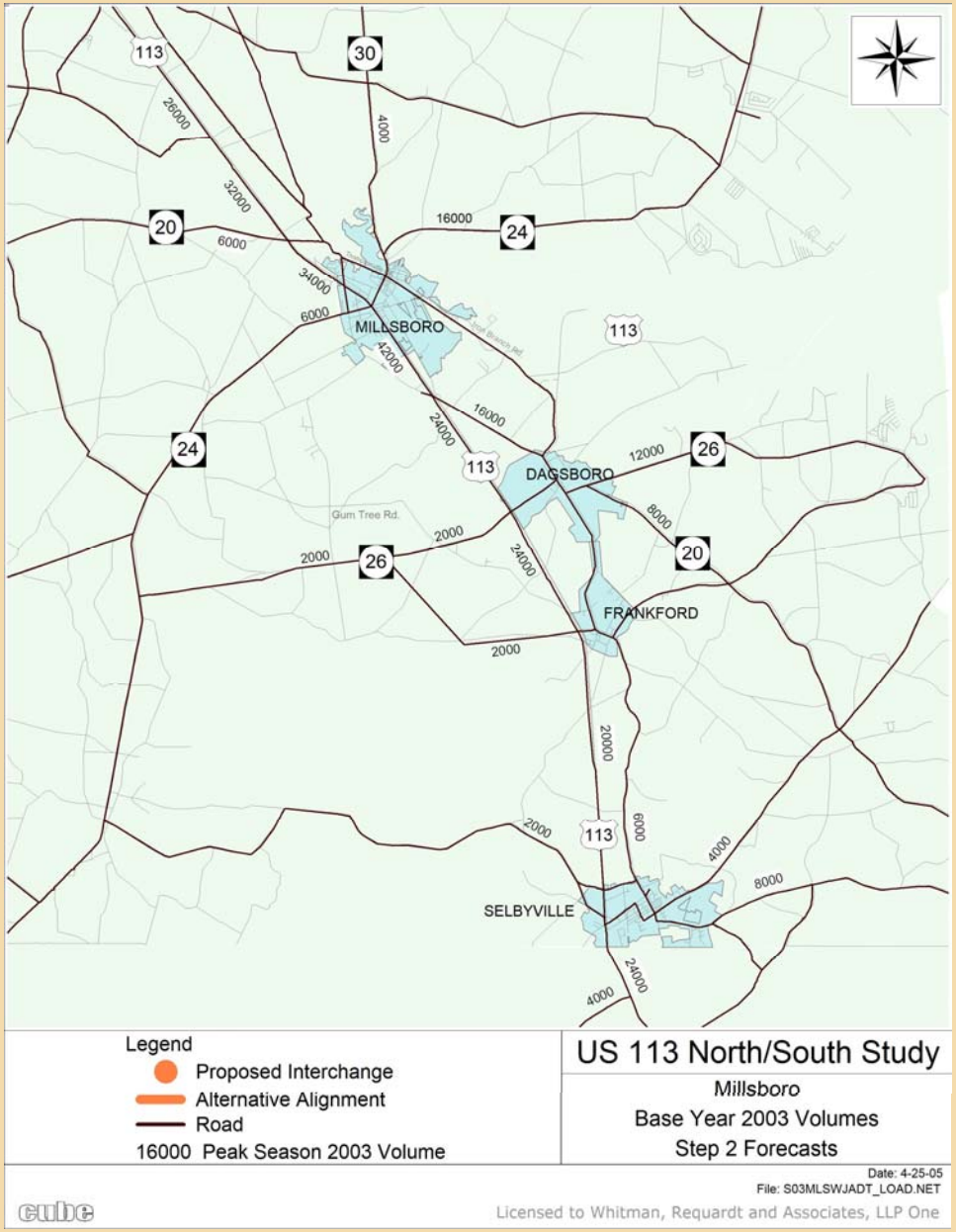
- Jan. 12, 2005: Dagsboro Church of God coordination meeting
- Jan. 13, 2005: Environmental resource agency “JPR” meeting
- Feb. 18, 2005: Seacoast Speedway coordination meeting
- Feb. 22, 2005: Ellendale area working group meeting no. 4
- Mar. 2, 2005: Millsboro-South area working group meeting no. 6
- Mar. 21, 2005: Milford area working group meeting no. 6
- Mar. 29, 2005: Plantation Lakes coordination meeting
- Mar. 30, 2005: Millsboro-South area working group meeting no. 7
- Mar. 31, 2005: Georgetown area working group meeting no. 6
- Apr. 20, 2005: Environmental resource agency meeting
- Apr. 21, 2005: Georgetown area working group meeting no. 7
- Apr. 25, 2005: Milford area working group meeting no. 7
- Apr. 26, 2005: Ellendale area working group meeting no. 5

Upcoming Meetings

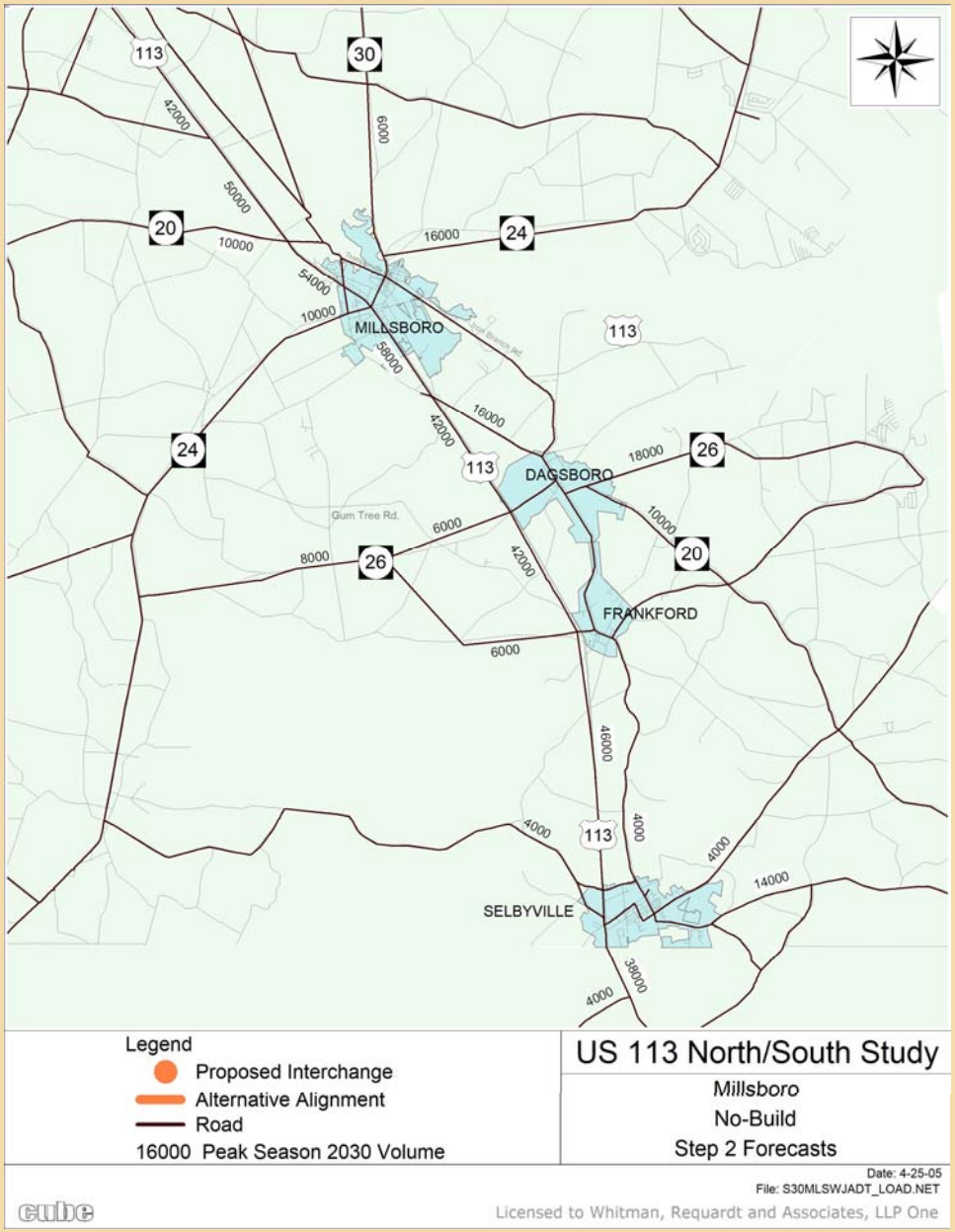
- **May 16, 2005:** **Milford Area Working Group Meeting No. 8**
  - 5:30 – 8:30 PM at Carlisle Fire Company, Banquet Hall
    615 N.W. Front Street, Milford
- **May 18, 2005:** **Georgetown Area Working Group Meeting No. 8**
  - 5:30 – 8:30 PM at CHEER Community Center
    20520 Sand Hill Road, Georgetown
- **May and June:** **Public Workshops**
  - See attached schedule

Traffic Analysis

- **The traffic projections presented tonight are preliminary. This means that they can be used to:**
  - **Make comparisons among off-alignment alternatives, determining which best meet anticipated traffic needs**
  - **Determine approximate benefits along existing US 113**
- **They are NOT yet sufficient to:**
  - **Compare off-alignment to on-alignment alternatives**
  - **Determine specific interchange configurations**
  - **Determine specific intersection designs**
  - **Identify specific traffic composition (e.g. local/through, north/south, east/west, etc.)**
- **More detailed forecasts will be developed as the project progresses to allow us to perform more detailed analyses.**

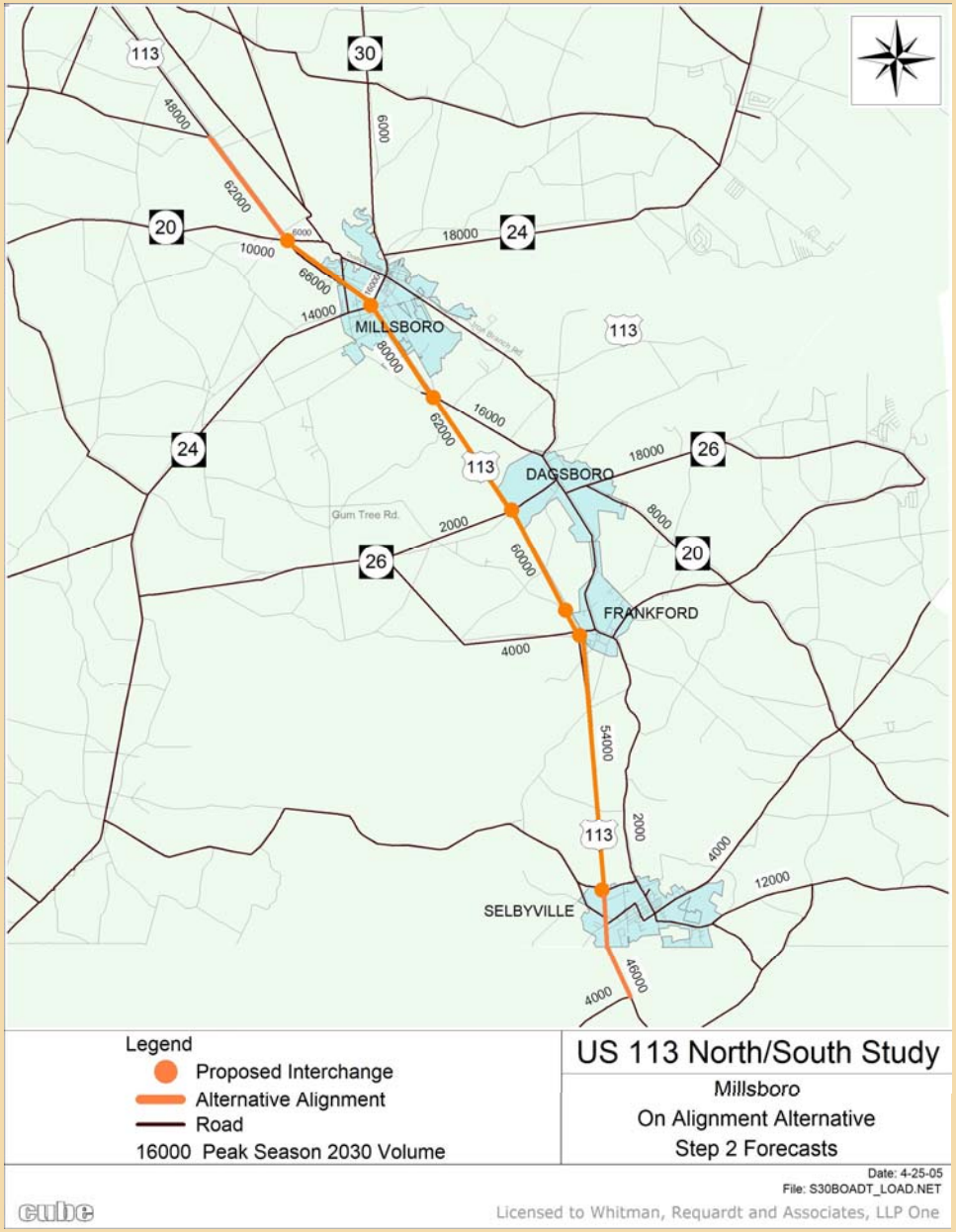


Traffic Analysis: Base Year Conditions



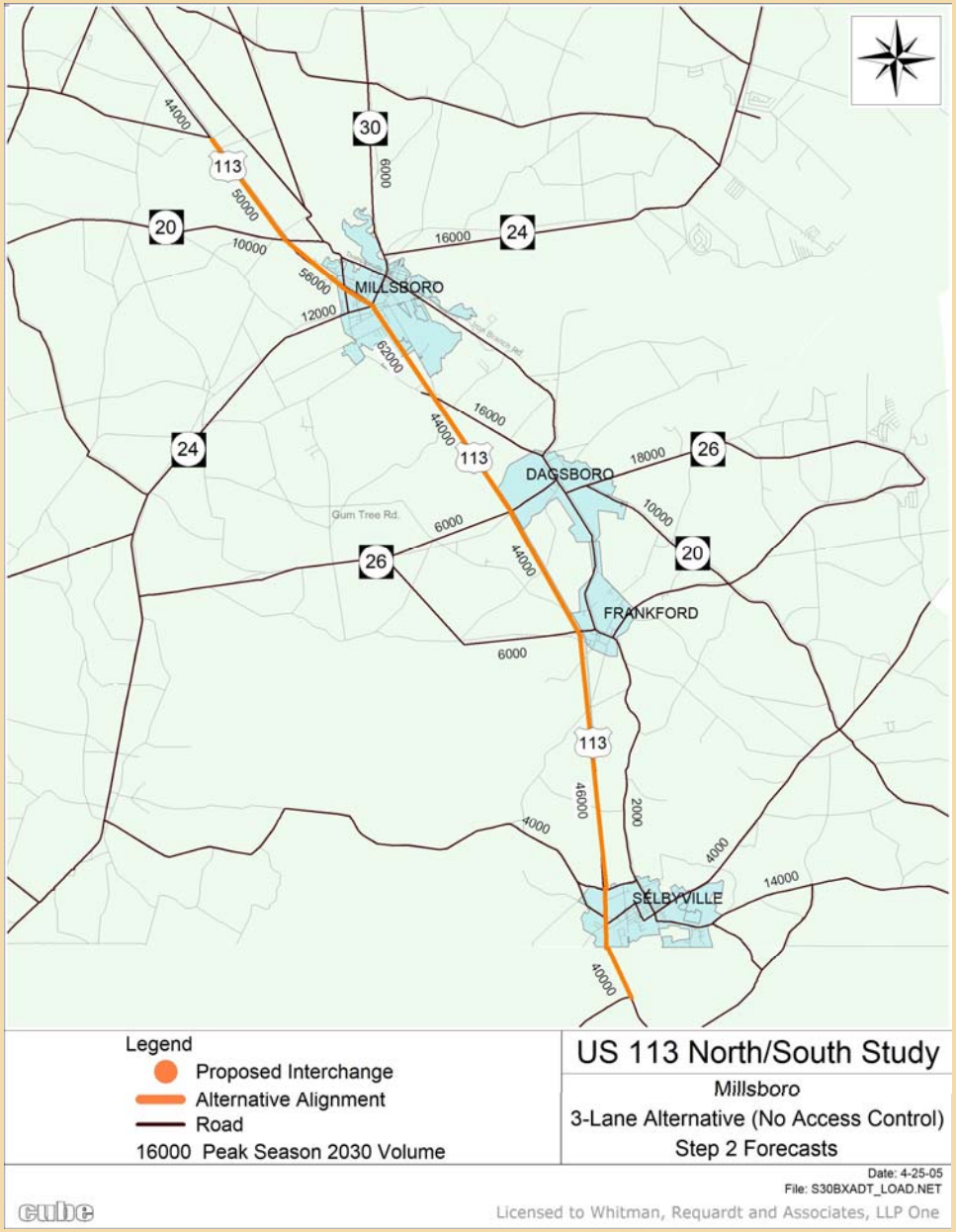
Traffic Analysis: No-Build Alternative

Step 2 forecasts are preliminary; further refinements are underway.



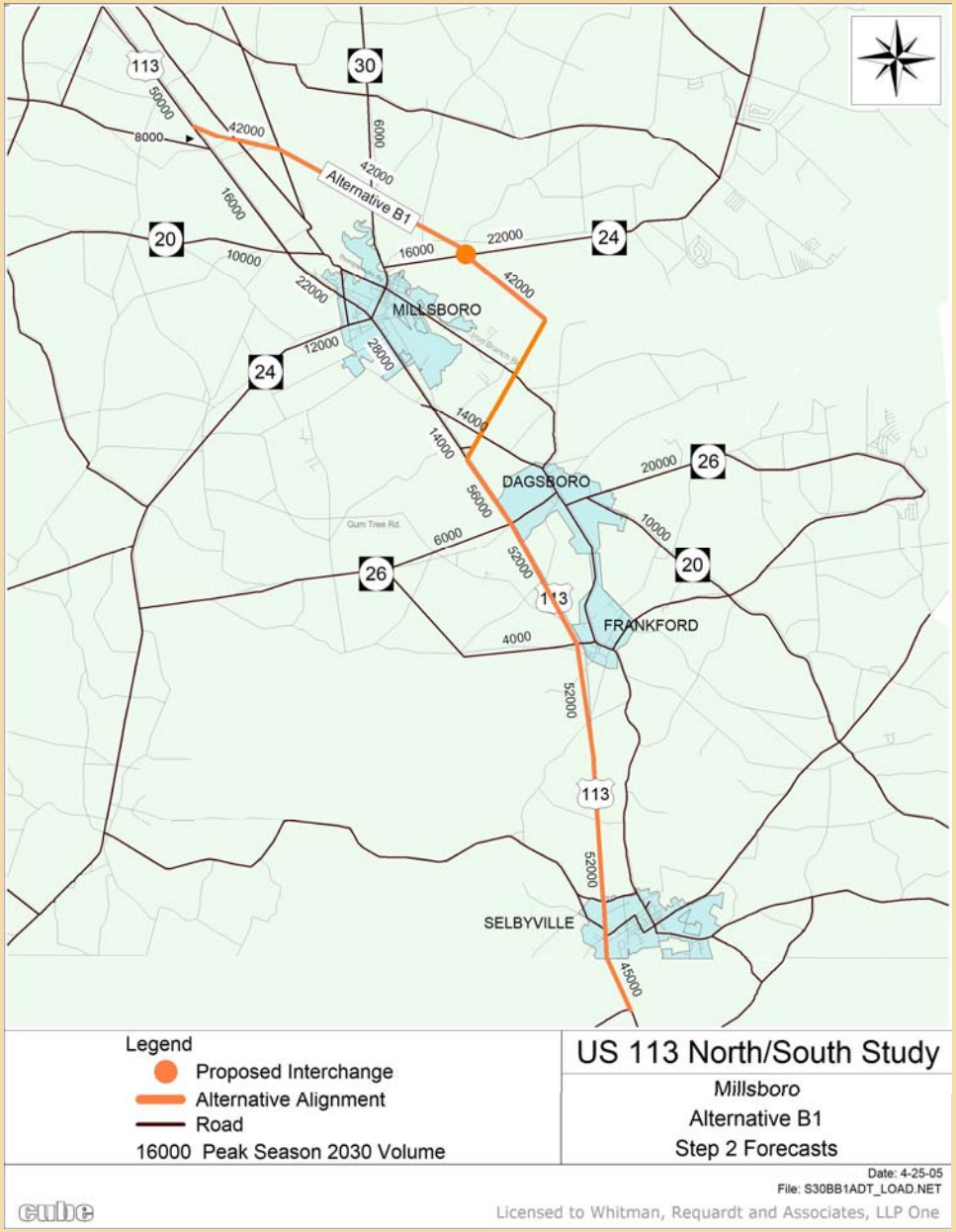
Traffic Analysis: Alternative A

Step 2 forecasts are preliminary; further refinements are underway.



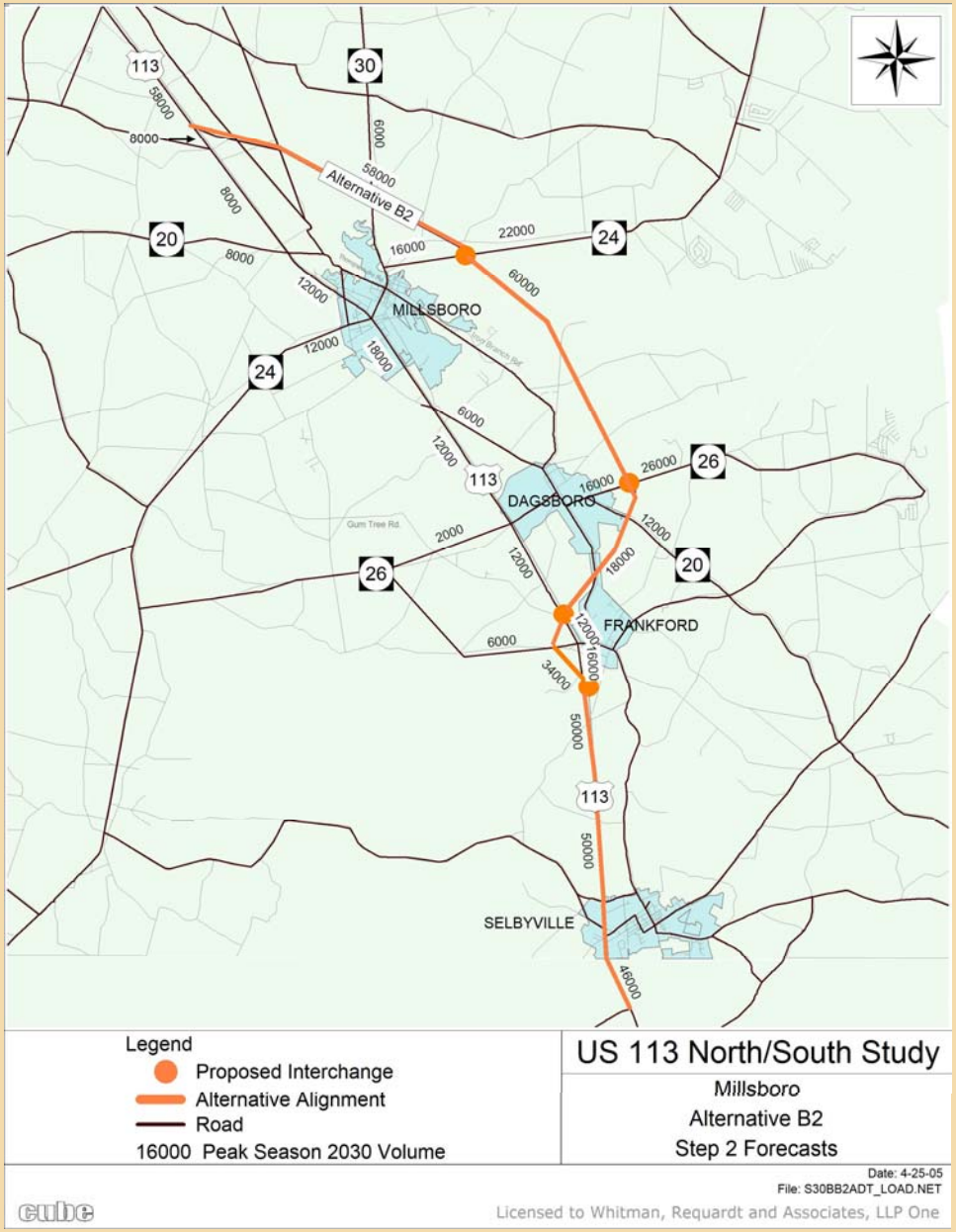
Traffic Analysis: Alternative A Option 3

Step 2 forecasts are preliminary; further refinements are underway.



Traffic Analysis: Alternative B1

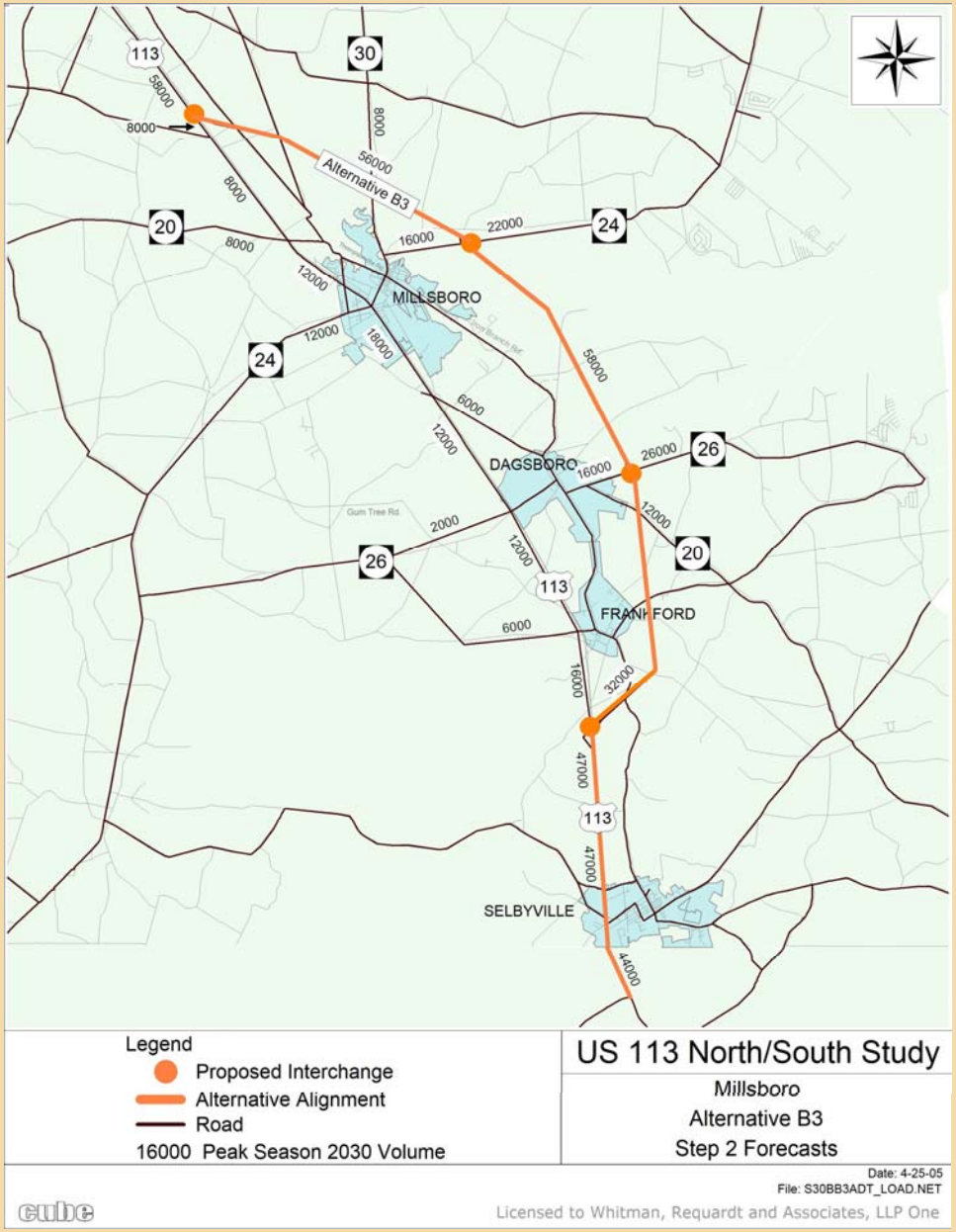
Step 2 forecasts are preliminary; further refinements are underway.



Traffic Analysis: Alternative B2

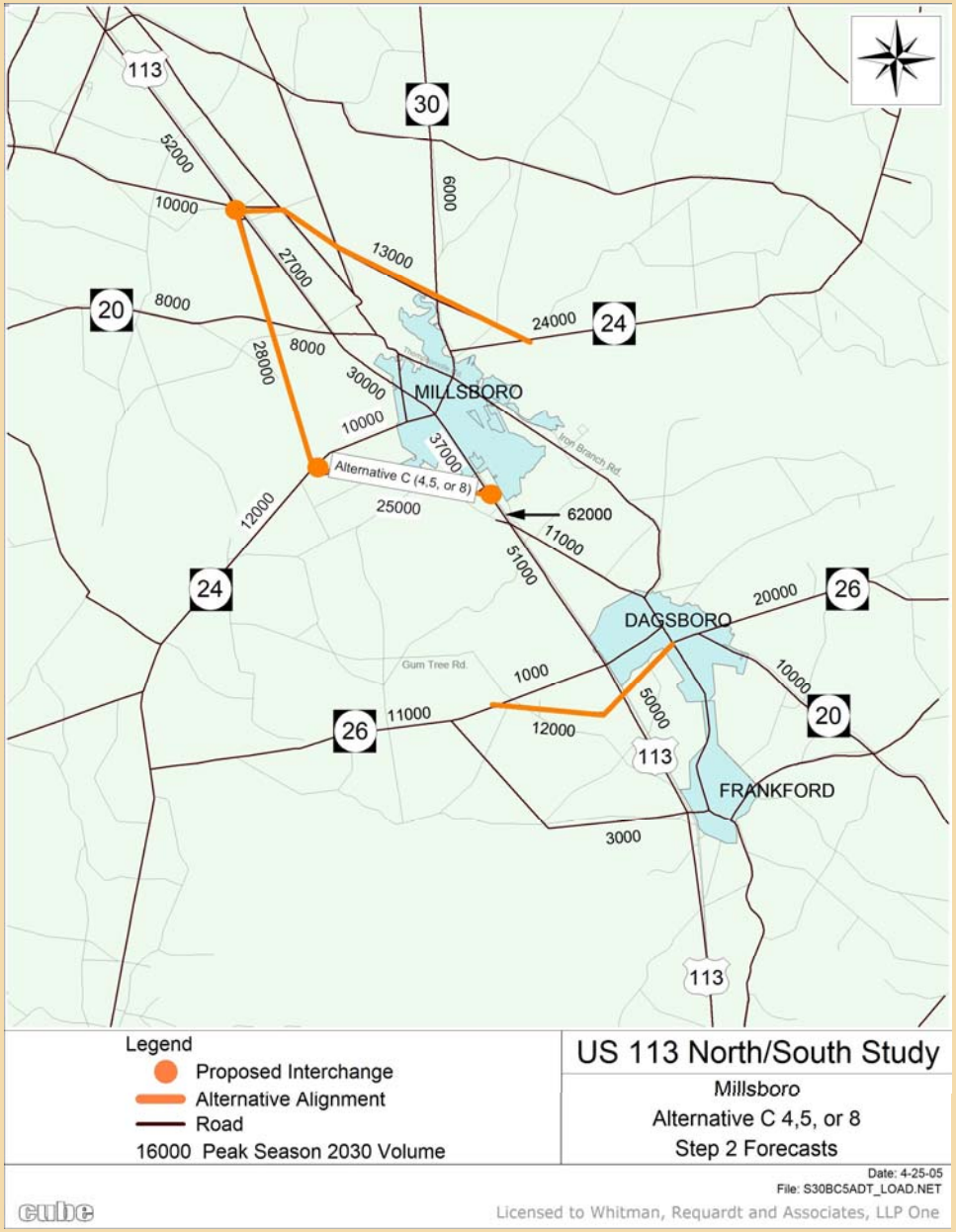
Step 2 forecasts are preliminary; further refinements are underway.

Traffic Analysis: Alternative B3

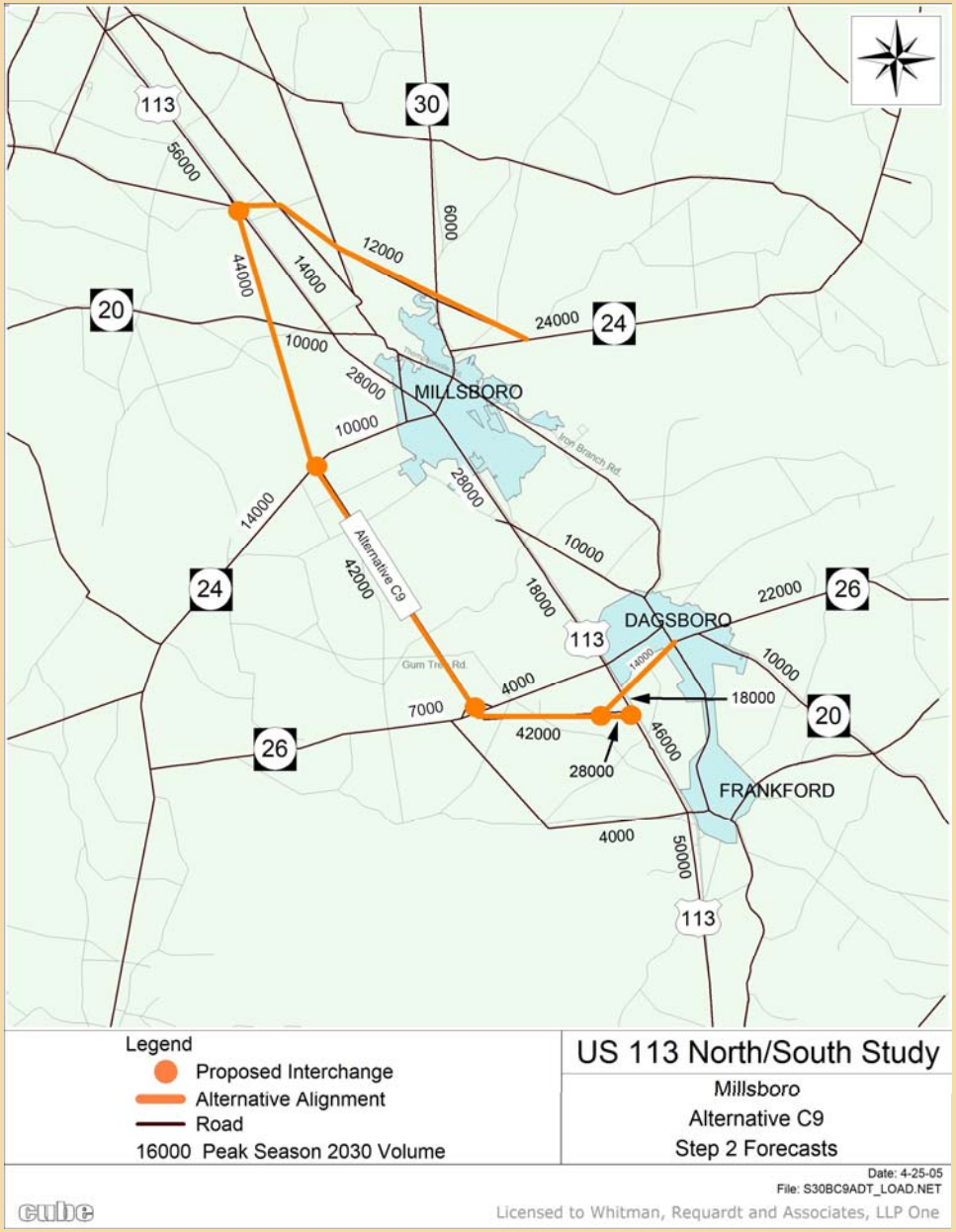


Step 2 forecasts are preliminary; further refinements are underway.

Traffic Analysis: Alternatives C4, C5, and C8

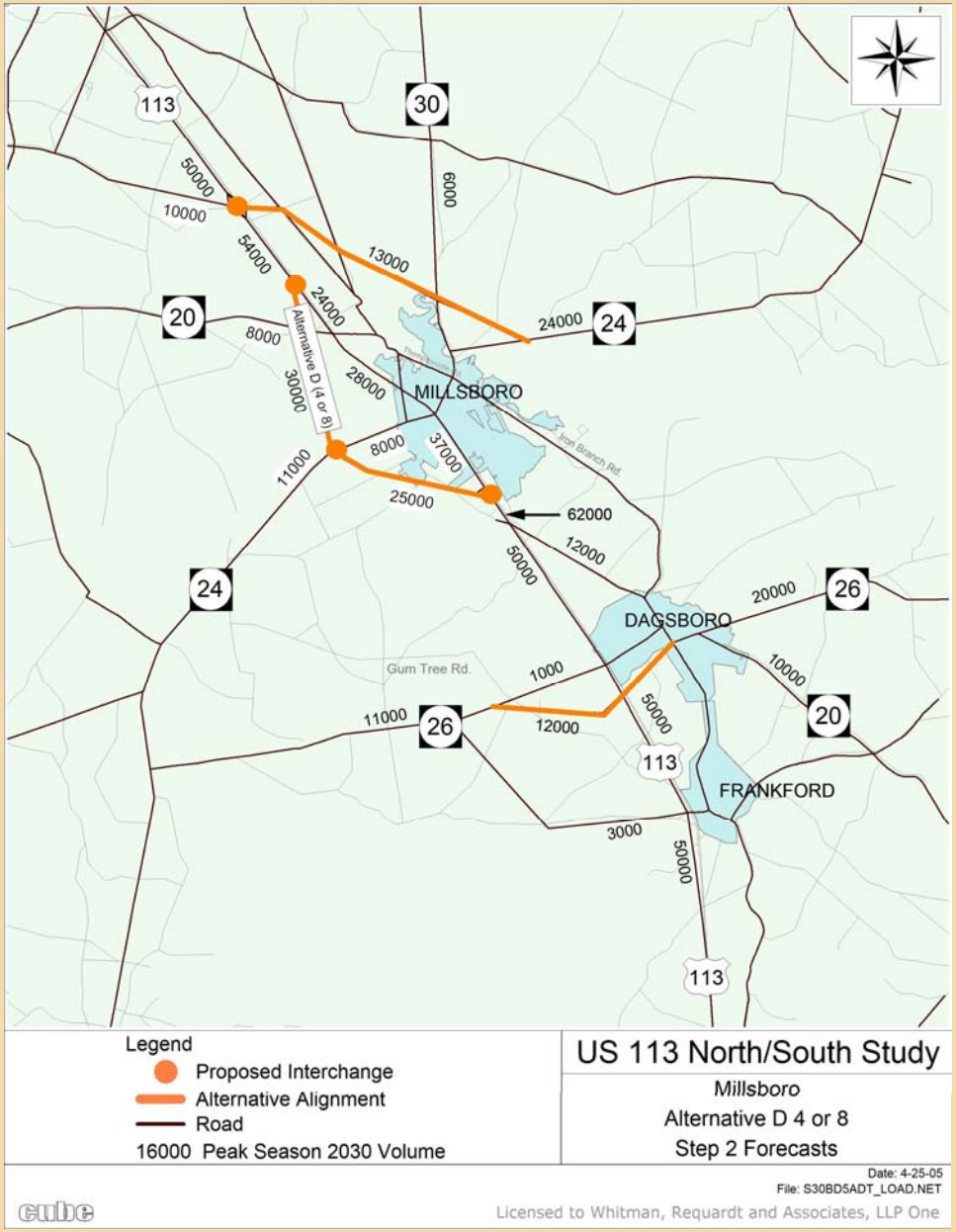


Step 2 forecasts are preliminary; further refinements are underway.



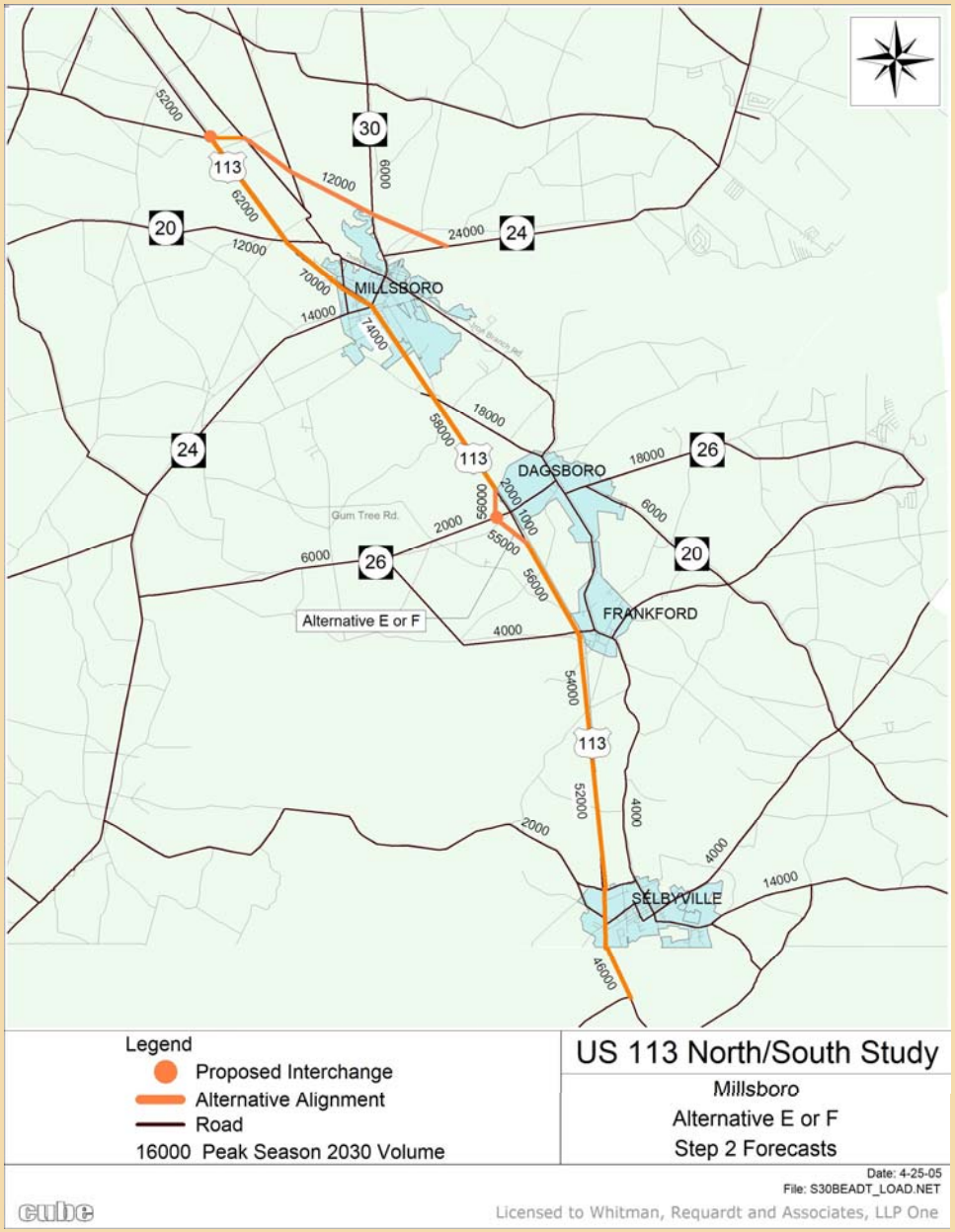
Traffic Analysis: Alternative C9

Step 2 forecasts are preliminary; further refinements are underway.



Traffic Analysis: Alternatives D4 and D8

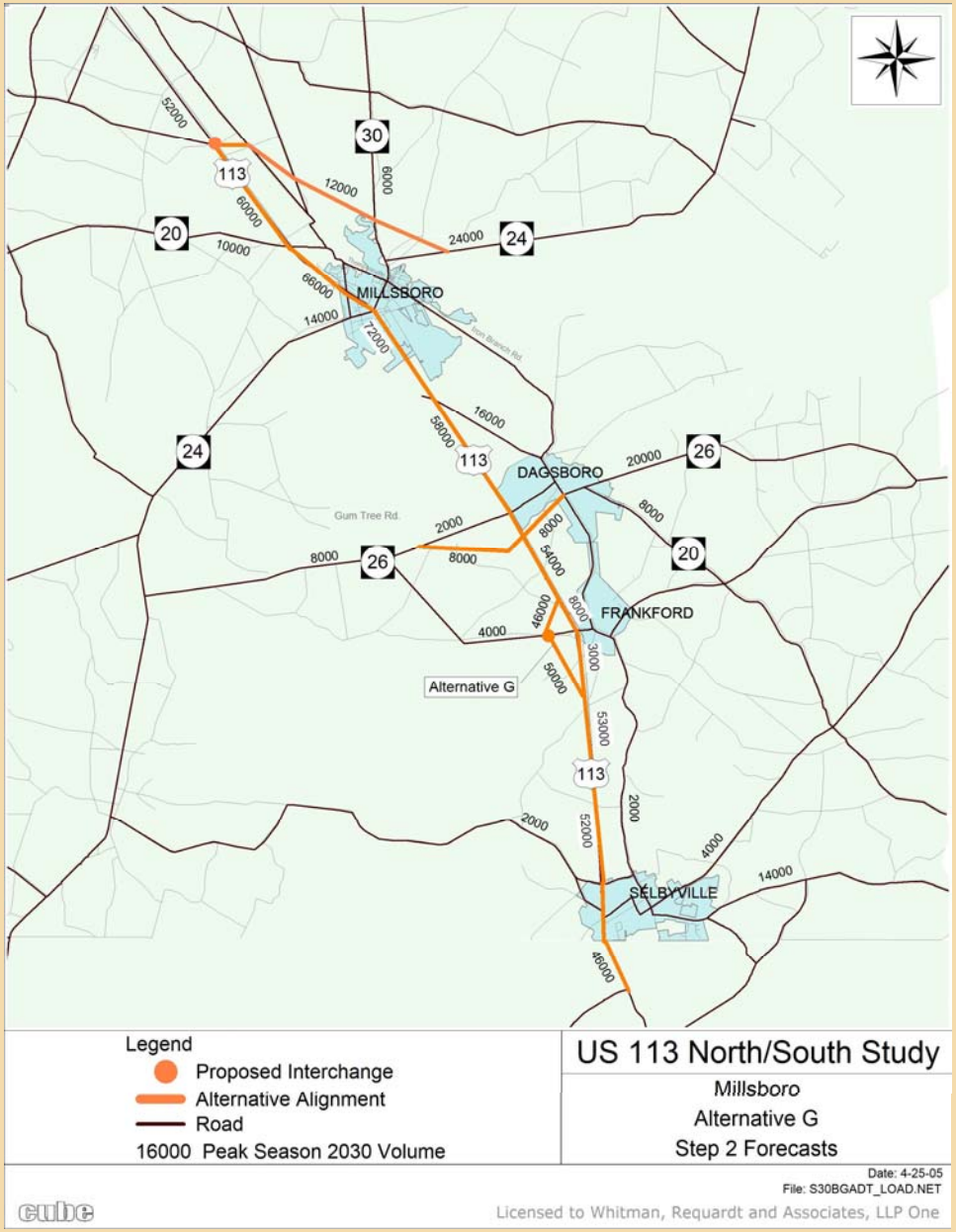
Step 2 forecasts are preliminary; further refinements are underway.



Traffic Analysis: Alternatives E and F

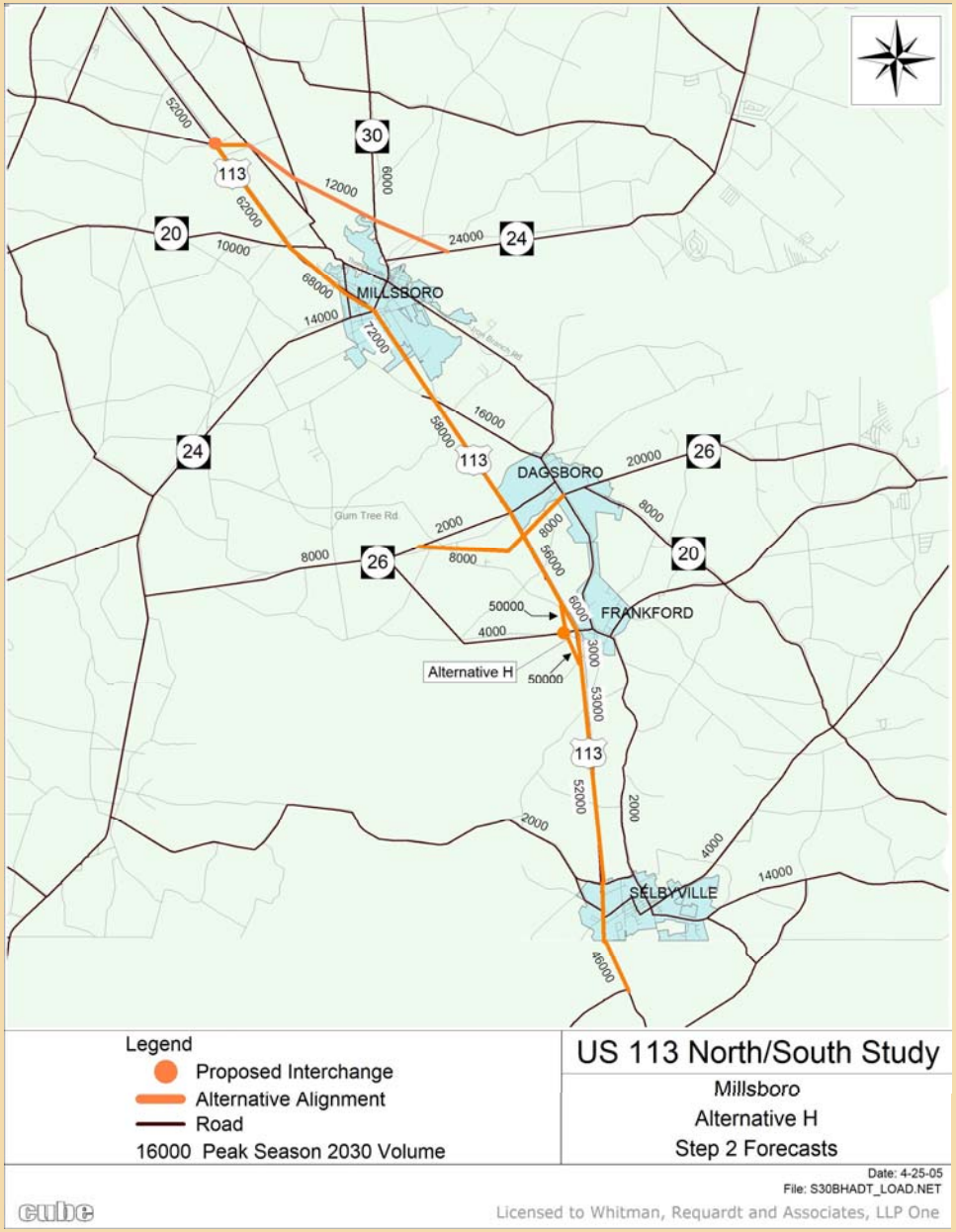
Step 2 forecasts are preliminary; further refinements are underway.

Traffic Analysis: Alternative G

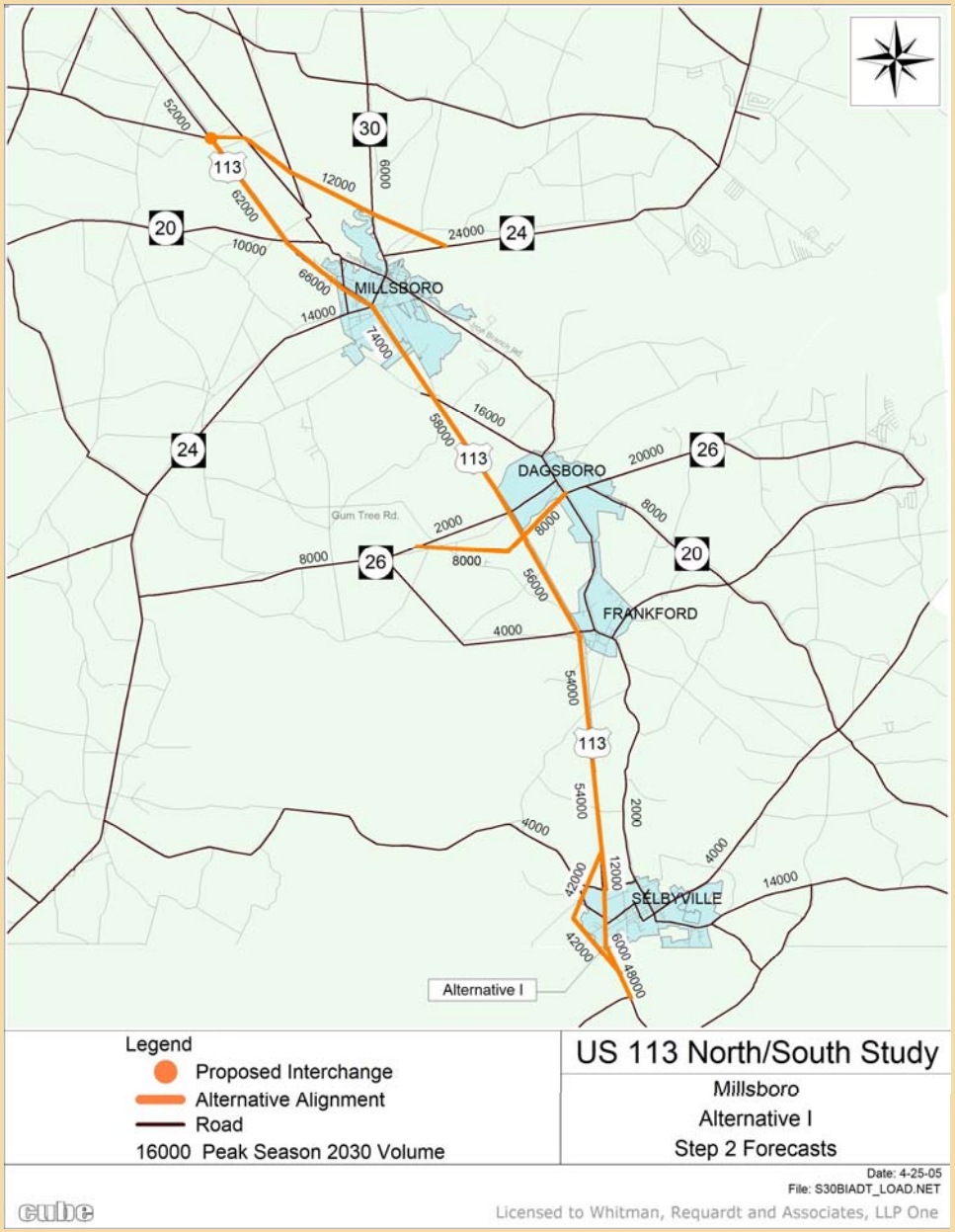


Step 2 forecasts are preliminary; further refinements are underway.

Traffic Analysis: Alternative H



Step 2 forecasts are preliminary; further refinements are underway.



Traffic Analysis: Alternatives I6 and I7

Step 2 forecasts are preliminary; further refinements are underway.

Traffic Analysis Summary

Millsboro Area

Alternative	US 113 Volumes in Millsboro Area					Bypass volumes	Comments
	North of SR 20 (west)	SR 20 (west) - SR 24	SR 24 - SR 20 (east)	SR 20 (east) - SR 26	South of SR 26		
Base Year	32,000	34,000	42,000	24,000	24,000	N/A	2003 volumes
No Build	50,000	54,000	58,000	42,000	42,000	N/A	
A (on-alignment)	62,000	66,000	80,000	62,000	60,000	N/A	Additional traffic likely due to diversions from parallel routes
Eastern Bypass Alternatives in Millsboro Area							
B1	16,000	22,000	28,000	14,000	52,000	42,000	Bypass ends north of SR 26
B2	8,000	12,000	18,000	12,000	12,000	18,000 – 60,000	
B3	8,000	12,000	18,000	12,000	12,000	32,000 – 58,000	
Western Bypass Alternatives in Millsboro Area*							
C4, C5, C8	27,000	30,000	37,000	51,000	50,000	25,000 – 28,000	Bypass ends north of SR 20 (east)
C9	14,000	28,000	28,000	18,000	18,000	28,000 – 44,000	
D4, D8	24,000	28,000	37,000	50,000	50,000	25,000 – 30,000	Bypass ends north of SR 20 (east)

* - Connector from the western bypass alternatives to SR 24 carries 12,000 to 13,000 vehicles daily.

Traffic Analysis Summary

Dagsboro Area

Alternative	US 113 Volumes in Dagsboro Area		Bypass volumes	Comments
	North of SR 26	South of SR 26		
Base Year	24,000	24,000	N/A	2003 volumes
No Build	42,000	42,000	N/A	
A (on-alignment)	62,000	60,000	N/A	Additional traffic likely due to diversions from parallel routes
Eastern Bypass Alternatives in Dagsboro Area				
B2	12,000	12,000	18,000 – 60,000	
B3	12,000	12,000	32,000 – 58,000	
Western Bypass Alternatives in Dagsboro Area				
C9	18,000	18,000	28,000 – 44,000	Long bypass ends just south of SR 26
E, F	2,000	1,000	55,000 – 56,000	Short western bypass

Traffic Analysis Summary

Frankford Area

Alternative	US 113 Volumes in Frankford Area		Bypass volumes	Comments
	North of Blueberry Lane	South of Blueberry Lane		
Base Year	24,000	20,000	N/A	2003 volumes
No Build	42,000	46,000	N/A	
A (on-alignment)	60,000	54,000	N/A	Additional traffic likely due to diversions from parallel routes
Eastern Bypass Alternatives in Frankford Area				
B2	12,000	16,000	18,000 – 34,000	East bypass goes around Frankford to the **WEST**
B3	12,000	16,000	32,000	
Western Bypass Alternatives in Frankford Area				
G	8,000	3,000	46,000 – 50,000	Bypass ½ mile from US 113
H	6,000	3,000	50,000	Bypass ¼ mile from US 113

Traffic Analysis Summary

Selbyville Area

Alternative	US 113 Volumes in Selbyville Area		Bypass volumes	Comments
	North of SR 54	South of SR 54		
Base Year	20,000	24,000	N/A	2003 volumes
No Build	46,000	38,000	N/A	
A (on-alignment)	54,000	46,000	N/A	Additional traffic likely due to diversions from parallel routes
Western Bypass Alternatives in Selbyville Area				
I6, I7	12,000	6,000	42,000	

Traffic Analysis

What Conclusions Can We Draw?

- **On-alignment (Alt. A)**
  - Carries more traffic than no-build due to diversions from other routes such as SR 1 and US 13
  - Carries two to three times base year traffic in most areas
- **Eastern bypass alternatives (Alts. B1-3)**
  - Traffic on existing US 113 may drop to as little as one-third base year levels
  - B1 diverts less traffic than B2 and B3

Traffic Analysis

What Conclusions Can We Draw?

- **Western bypass alternatives in Millsboro (Alts. C-D)**
  - **The short bypasses (4, 5, 8) divert roughly half of the total traffic from US 113; volumes on existing US 113 will generally be slightly lower than they are today**
  - **The long bypass (C9) diverts a bit more than half of the total traffic from US 113; volumes on existing US 113 will be 20 to 50 percent lower than they are today**
  - **The connection to SR 24 north of Millsboro carries about 12,000 vehicles per day, diverting traffic from both US 113 and routes parallel to SR 24 (such as Zoar Road)**

Traffic Analysis

What Conclusions Can We Draw?

- **Eastern bypass alternatives in Dagsboro (Alts. B2 and B3)**
  - **B2 and B3 will divert about ¾ of the traffic from existing US 113**
  - **Traffic on existing US 113 will be about half what it is today**
- **Western bypass alternatives in Dagsboro (Alts. C9, E, and F)**
  - **C9 will divert about 2/3 of the traffic from existing US 113; traffic on existing US 113 will be slightly less than base year levels**
  - **Relocated SR 26 will carry about 14,000 vehicles daily under this alternative**
  - **E and F will divert over 90 percent of the traffic from existing US 113 because through traffic CANNOT use existing US 113**

Traffic Analysis

What Conclusions Can We Draw?

- **Eastern bypass alternatives in Frankford (Alts. B2 and B3)**
  - **Both B2 and B3 will divert about 2/3 of the traffic from existing US 113; traffic on existing US 113 will be slightly lower than it is today**
- **Western bypass alternatives in Frankford (Alts. G and H)**
  - **Both G and H divert over 90 percent of the traffic from existing US 113**
- **Western bypass alternatives in Selbyville (Alts. I6 and I7)**
  - **Both I6 and I7 divert between 80 and 90 percent of the traffic from existing US 113**
  - **Traffic on existing US 113 will be substantially lower than it is today**

Cost Estimates

- At this point, no alternative is being considered for elimination based on cost.
- Cost estimates using the major quantity approach are still under development.
- At this preliminary stage, it is reasonable to use the length of each alternative and the number of interchanges as a means to compare relative cost.

Economic Impact Analysis

- Our economic impact consultant (Economic Development Research Group) has performed a cursory review of the off-alignment alternatives.
- Generally speaking, the further a bypass is from the existing highway, the greater the potential economic impact.
- However, the bypass alternatives in the Millsboro-South area are not so different from each other that economic impact should be used to retain one and drop another.
- More detailed analysis will begin with a business survey later this spring.

Retaining Alternatives for Detailed Study

Stakeholder Input

- Listening Tour / Interviews
- Working Groups
- Elected and Government Officials
- Public Workshops
- Groups with Special Interests
- Those Most Directly Affected
- Document Key Issues

Traffic and Safety

- Existing Data & Supplement / Update
  - weekday commuters
  - weekend / seasonal
  - local / regional
- What & Where
  - local congestion
  - regional bottlenecks
- Safety Factors
  - statistics
  - reports
  - firsthand knowledge

Resource Agencies

Working Groups

General Public

Environmental Resources & Land Use

- Environmental Resources Inventory
- Land Use – Recent Trends & Projections
- Environmental Process (MATE)
- Permits

Products

- Purpose and Need
- Project Vision, Goals and Objectives
- Alternatives Development / Assessment
- Detailed Alternatives / Assessment
- Alternatives (Preferred) / Draft Environmental Documents
- Selected Alternative / Final Environmental Documents
- Implementation –
  - Protect Selected Alignments
  - Program / Prioritization of Improvements
    - Short-Term Operational Improvements
    - Mid-Term Improvements (CTP)
    - Longer-Term Improvements

Retaining Alternatives for Detailed Study

- The no-build alternative and at least one on-alignment alternative will be retained for detailed study.
- The matrix, traffic information, and public opinion are the tools we have available to narrow down the list of alternatives.
- By the end of this meeting, we would like the group to recommend:
  - which on-alignment alternative(s) be retained
  - which east bypass alternative(s) be retained, if any
  - which west bypass alternative(s) be retained, if any

Millsboro-South Area

- In the Millsboro-South area, potential bypasses of various towns would result in about 250 composite alternatives from end to end.
- To keep the analysis manageable, bypass impacts are calculated for bypass areas only, not for on-alignment improvements at either end.

On-Alignment Alternatives

- Options 1 and 2 include upgrading existing US 113 to full control of access with grade separations at key intersections.
- Option 1 in Millsboro:
  - Includes grade separations at SR 20 (west), SR 24, and M&T Blvd.
  - Uses primarily existing roads, in conjunction with some frontage roads, for access
  - Provides >1 mile access spacing
- Option 2 in Millsboro:
  - Includes grade separations at SR 20 (west), Delaware Avenue, Radish Road, and SR 20 (east)
  - Through traffic on SR 24 across US 113 would be relocated to Delaware Avenue
  - Uses more extensive frontage roads for access
  - Generally provides <1 mile access spacing

On-Alignment Alternatives

- **Options 1 and 2 are the same south of SR 20 (east):**
  - Include grade separations at relocated SR 26, Gum Tree Road, Parker Road, and relocated SR 54
  - SR 26 would be relocated on new alignment south of Dagsboro
  - SR 54 would be relocated on new alignment north of Selbyville
  - Use frontage roads for access
- **Option 3 adds one lane in each direction at grade.**
  - Grade separations at SR 20 (west), SR 24, SR 26, and SR 54
  - All other existing signals will remain
  - This option is being evaluated to determine whether it addresses purpose and need

On-Alignment Alternatives

- **Public/working group opinions:**
  - Substantial opposition in Millsboro
  - On-alignment options are more workable from Dagsboro to Selbyville
- **Resource and property impacts:**
  - See matrix for details.

On-Alignment Alternatives: Natural Resource Impacts

	No Build Alternative	On-alignment options		
		Alternative A, opt. 1	Alternative A, opt. 2	Alternative A, opt. 3
Area of Potential Floodplain Impacts - FEMA (acres)				
100-Year	0	13	14	
Area of Potential Wetland/Waters of the US Impacts				
Total Wetlands (acres)	0	11	12	
Hydric Soils (acres)	0	146	146	
Waters of the US (linear feet)	0	27,000	43,800	
Potential Agricultural Impacts (acres)				
Agricultural Districts	0	0	0	
Agricultural Preservation Easements	0	0	0	
Prime Farmlands	0	176	182	
Potential Hazardous Waste Impacts				
Number of EPA Sites	0	0	0	
Number of NPDES Locations	0	0	0	
Potential Natural Resource Impacts (acres)				
Natural Areas	0	0	0	
State Resource Areas	0	0	0	
Forestland: 2002 Land Use	0	28	26	
State Forest	0	0	0	
Rare, Threatened and Endangered Species	TBD	TBD	TBD	TBD
Parks and Recreation Areas	0	0	0	

On-Alignment Alternatives : Cultural Resource Impacts

	No Build Alternative	On-alignment options		
		Alternative A, opt. 1	Alternative A, opt. 2	Alternative A, opt. 3
Potential Cultural Resources Impacts				
Number of NRHP Buildings, Structures and Objects	0	0	0	
Number of NRHP Archeological Sites	0	0	0	
Number of NRHP Districts	0	0	0	
Number of CRS Buildings, Structures and Objects	0	30	30	
Number of CRS Archeological Sites	0	1	0	
Number of CRS Areas/Districts	0	0	0	
Number of Potential CRS Points	0	122	127	
Number of Cemeteries	0	1	1	
Predictive Model: Prehistoric Sensitivity - High & Moderate (acres)	0	22	24	
Predictive Model: Prehistoric Sensitivity - Low (acres)	0	95	99	
Predictive Model: Early Historic Sensitivity - High & Moderate (acres)	0	11	14	
Predictive Model: Early Historic Sensitivity - Low (acres)	0	4	4	
Predictive Model: Sites of Historic Sensitivity - High & Moderate	0	86	86	
Predictive Model: Sites of Historic Sensitivity - Low	0	11	14	

On-Alignment Alternatives : Property Impacts

	No Build Alternative	On-alignment options		
		Alternative A, opt. 1	Alternative A, opt. 2	Alternative A, opt. 3
Properties (numbers of, total acres)				
Properties affected (numbers of)	0	368	373	
Properties affected (total acres)	0	182	204	
Access Rights (numbers of affected properties)				
Denial of Access (numbers of)	0	144	164	
Residential	0	103	117	
Agricultural	0	8	8	
Commercial	0	32	38	
Industrial	0	1	1	
Modified Access (numbers of)	0			
Residential	0			
Agricultural	0			
Commercial	0			
Industrial	0			

Eastern Bypass Alternatives

- All eastern bypasses begin west of the Stockley Center and continue southeast to interchange with SR 24 and cross the Indian River.
- Alternative B1 then turns southwest along existing rail lines to US 113.
- Alternative B2 interchanges with SR 26, then rejoins US 113 north of Frankford.
- Alternative B3 also interchanges with SR 26, rejoining US 113 south of Frankford.
- Alternatives B4 through B6 are variations on B1 through B3 that avoid NR-listed archaeological sites and the Mountaire poultry plant.
- Resource constraints make an eastern bypass of Selbyville infeasible.

Eastern Bypass Alternatives

- **Public/working group opinions:**
  - Extensive public/working group support.
  - Eastern bypasses make the most sense because the beach traffic is headed to the east.
  - The community considers the northern portion, connecting to SR 24, especially important.
- **Resource and property impacts:**
  - See matrix for details.

Eastern Bypass Alternatives: Natural Resource Impacts

	B1	B2	B3	B4	B5	B6
Area of Potential Floodplain Impacts - FEMA (acres)						
100-Year	28	41	39	35	36	45
Area of Potential Wetland/Waters of the US Impacts						
Total Wetlands (acres)	57	15	22	21	22	35
Hydric Soils (acres)	65	122	126	116	116	124
Waters of the US (linear feet)	4,600	18,300	25,600	16,400	16,400	19,100
Potential Agricultural Impacts (acres)						
Agricultural Districts	0	0	2	3	0	30
Agricultural Preservation Easements	0	0	1	0	0	0
Prime Farmlands	106	179	166	246	235	267
Potential Hazardous Waste Impacts						
Number of EPA Sites	0	0	0	0	0	0
Number of NPDES Locations	9	9	9	2	1	7
Potential Natural Resource Impacts (acres)						
Natural Areas	12	12	12	17	11	10
State Resource Areas	12	12	12	15	15	9
Forestland: 2002 Land Use	70	100	119	131	104	142
State Forest	0	0	0	0	0	0
Rare, Threatened and Endangered Species	TBD	TBD	TBD	TBD	TBD	TBD
Parks and Recreation Areas	0	0	0	36	34	41

Eastern Bypass Alternatives: Cultural Resource Impacts

	B1	B2	B3	B4	B5	B6
Potential Cultural Resources Impacts						
Number of NRHP Buildings, Structures and Objects	0	0	0	0	0	0
Number of NRHP Archeological Sites	5	5	5	2	2	7
Number of NRHP Districts	2	2	1	2	2	2
Number of CRS Buildings, Structures and Objects	30	49	43	49	47	32
Number of CRS Archeological Sites	16	15	15	9	16	19
Number of CRS Areas/Districts	2	2	2	2	5	4
Number of Potential CRS Points	17	41	13	45	47	59
Number of Cemeteries	0	3	0	4	3	2
Predictive Model: Prehistoric Sensitivity - High & Moderate (acres)	41	54	57	68	69	72
Predictive Model: Prehistoric Sensitivity - Low (acres)	75	132	129	120	137	153
Predictive Model: Early Historic Sensitivity - High & Moderate (acres)	8	14	14	21	33	44
Predictive Model: Early Historic Sensitivity - Low (acres)	0	5	4	5	5	5
Predictive Model: Sites of Historic Sensitivity - High & Moderate	47	89	80	86	79	76
Predictive Model: Sites of Historic Sensitivity - Low	4	6	6	9	5	9

Eastern Bypass Alternatives: Property Impacts

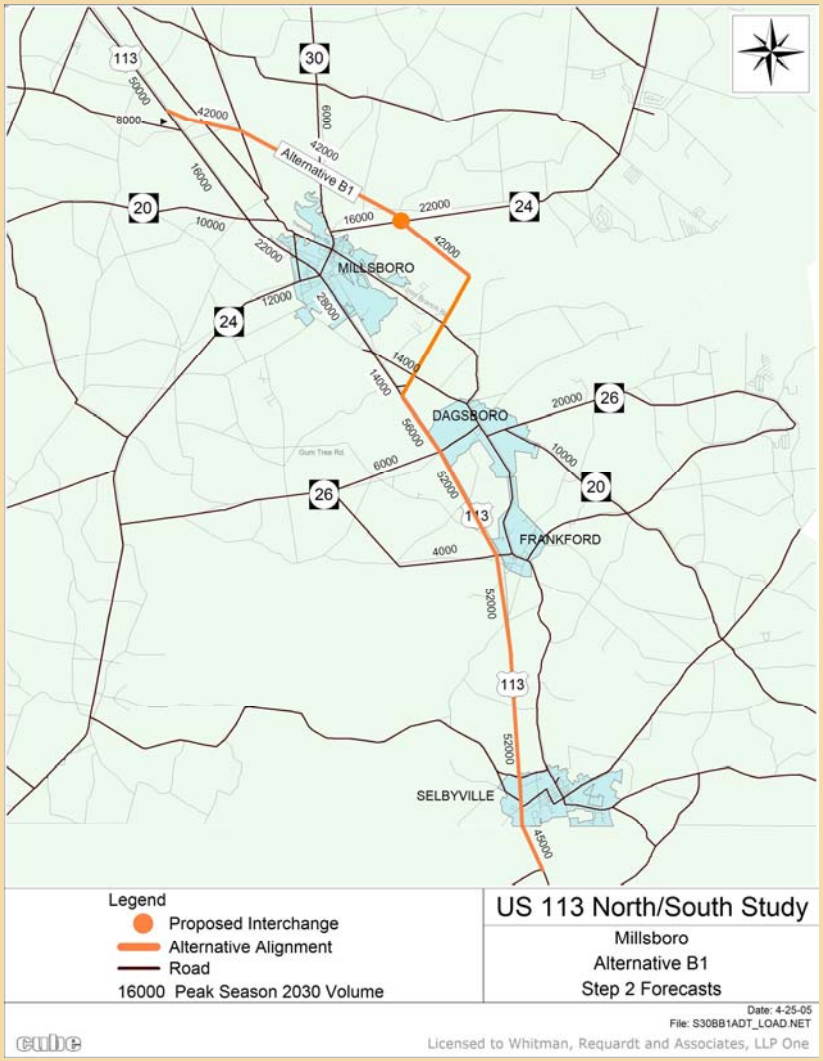
	B1	B2	B3	B4	B5	B6
Properties (numbers of, total acres)						
Properties affected (numbers of)	55	111	110	TBD	TBD	TBD
Properties affected (total acres)	605	601	661	TBD	TBD	TBD
Access Rights (numbers of affected properties)						
Denial of Access (numbers of)	0	0	0	0	0	0
Residential						
Agricultural						
Commercial						
Industrial						
Modified Access (numbers of)	0	0	0	0	0	0
Residential						
Agricultural						
Commercial						
Industrial						

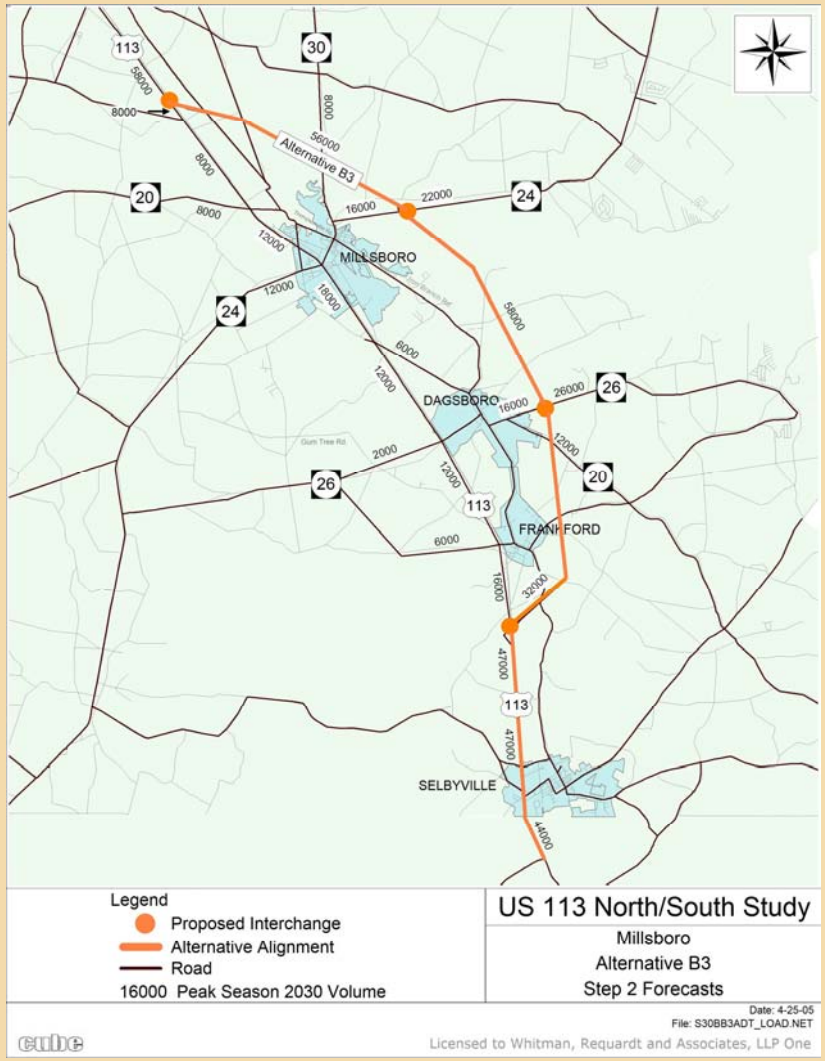
Eastern Bypass Alternatives

- **Length:**
  - The Alternative B1 bypass is 8.0 miles long.
  - The Alternative B2 bypass is 11.4 miles long.
  - The Alternative B3 bypass is 12.1 miles long.
- **Traffic benefits:**
  - Alternative B1 would carry about 42,000 vehicles per day, cutting future traffic on US 113 by 50% to 70%.
  - Alternatives B2 and B3 would carry 30,000-60,000 vehicles per day, cutting future traffic on US 113 by about 65% to 85%.

Eastern Bypass Alternatives

Traffic Comparison





Eastern Bypass Conclusions

- All eastern bypasses appear to be effective in reducing traffic on existing US 113.
- Alternatives B1 and B6 generally have the most resource impacts.
- The eastern bypasses typically have greater potential to impact historic structures than the western bypasses.
- Natural resource impacts are generally comparable between eastern and western bypasses.

Western Bypass Alternatives

- Due to resource constraints, western bypass alternatives are limited to short bypasses of one or two towns each.
- Millsboro:
  - Alternative C begins near Rich Road, while Alternative D begins further south near Sheep Pen Ditch.
  - Alternatives 4, 5, and 8 connect Alternatives C and D to US 113 north of SR 20 (east).
  - Alternative 9 continues south from Alternatives C and D to bypass Dagsboro, returning to US 113 south of SR 26.
  - Each western bypass of Millsboro will include a connector to SR 24 north and east of Millsboro.

Western Bypass Alternatives

- **Dagsboro:**
  - Alternatives E and F both have a full interchange with SR 26; US 113 would not connect to the bypass at either end.
- **Frankford:**
  - Alternative G bypasses Frankford further west than Alternative H.
  - Alternative G has a full interchange with Blueberry Lane; US 113 would not connect to the bypass at either end.
  - Alternative H has southbound ramps at Blueberry Lane; US 113 would connect to the bypass only as northbound ramps.

Western Bypass Alternatives

- **Selbyville:**
  - Alternative I begins just north of SR 54.
  - Alternative 6 bypasses most developed properties in Selbyville, tying into US 113 about ½ mile into Maryland.
  - Alternative 7 minimizes impact in Maryland, resulting in greater impacts to Selbyville residences and businesses.

Western Bypass Alternatives

- **Public/working group opinions:**
  - Limited support for western bypasses of Millsboro; connector to SR 24 may address some of those concerns.
  - Essentially no support for western bypasses of Dagsboro or Frankford.
  - Some support for Alternative I6 as a western bypass of Selbyville; no support for I7 due to property impacts.
- **Resource and property impacts:**
  - See matrix for details.

Millsboro-South Area

Millsboro Western Bypass Alternatives: Natural Resource Impacts

	Millsboro west bypasses						SR 24 connectors (one will be included with each Millsboro west bypass)			
	C4	C5	C8	C9	D4	D8	C north	C south	D north	D south
Area of Potential Floodplain Impacts - FEMA (acres)										
100-Year	11	11	7	4	11	7	0	0	0	0
Area of Potential Wetland/Waters of the US Impacts										
Total Wetlands (acres)	24	23	19	24	19	13	1	2	2	3
Hydric Soils (acres)	15	15	14	170	11	9	1	1	3	4
Waters of the US (linear feet)	4,100	3,900	3,900	25,900	3,400	3,200	100	800	400	1,100
Potential Agricultural Impacts (acres)										
Agricultural Districts	0	0	0	18	0	0	0	0	0	0
Agricultural Preservation Easements	0	0	0	0	0	0	0	0	0	0
Prime Farmlands	44	59	48	233	48	53	18	11	22	15
Potential Hazardous Waste Impacts										
Number of EPA Sites	0	0	0	0	0	0	0	0	0	0
Number of NPDES Locations	0	0	0	0	0	0	0	0	0	0
Potential Natural Resource Impacts (acres)										
Natural Areas	0	0	0	0	0	0	5	8	5	8
State Resource Areas	7	0	7	0	7	7	5	7	5	7
Forestland: 2002 Land Use	74	77	69	80	56	51	24	22	41	40
State Forest	0	0	0	0	0	0	0	0	0	0
Rare, Threatened and Endangered Species	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Parks and Recreation Areas	0	0	0	0	0	0	0	0	0	0

Millsboro Western Bypass Alternatives: Cultural Resource Impacts

	Millsboro west bypasses						SR 24 connectors (one will be included with each Millsboro west bypass)			
	C4	C5	C8	C9	D4	D8	C north	C south	D north	D south
Potential Cultural Resources Impacts										
Number of NRHP Buildings, Structures and Objects	0	0	0	0	0	0	0	0	0	0
Number of NRHP Archeological Sites	0	0	0	0	0	0	0	0	0	0
Number of NRHP Districts	0	0	0	0	0	0	0	0	0	0
Number of CRS Buildings, Structures and Objects	1	2	2	3	1	2	0	1	1	1
Number of CRS Archeological Sites	1	1	1	2	0	0	0	0	0	1
Number of CRS Areas/Districts	4	4	3	3	1	0	0	0	2	2
Number of Potential CRS Points	5	5	6	2	5	6	3	1	3	1
Number of Cemeteries	0	0	0	0	0	0	1	0	1	0
Predictive Model: Prehistoric Sensitivity - High & Moderate (acres)	94	85	81	77	63	50	12	15	27	29
Predictive Model: Prehistoric Sensitivity - Low (acres)	91	92	91	87	75	75	17	10	25	19
Predictive Model: Early Historic Sensitivity - High & Moderate (acres)	33	26	29	14	28	24	4	7	8	11
Predictive Model: Early Historic Sensitivity - Low (acres)	0	0	0	2	0	0	0	0	0	0
Predictive Model: Sites of Historic Sensitivity - High & Moderate	6	6	7	8	6	7	0	3	0	3
Predictive Model: Sites of Historic Sensitivity – Low	0	0	0	0	0	0	0	0	0	0

Millsboro Western Bypass Alternatives: Property Impacts

	Millsboro west bypasses						SR 24 connectors (one will be included with each Millsboro west bypass)			
	C4	C5	C8	C9	D4	D8	C, north	C, south	D, north	D, south
Properties (numbers of, total acres)										
Properties affected (numbers of)	92	81	80	93	83	71	60	55	66	58
Properties affected (total acres)	270	265	262	410	234	226	62	61	85	84
Access Rights (numbers of affected properties)										
Denial of Access (numbers of)	0	0	0	0	0	0	0	0	0	0
Residential										
Agricultural										
Commercial										
Industrial										
Modified Access (numbers of)	0	0	0	0	0	0	0	0	0	0
Residential										
Agricultural										
Commercial										
Industrial										

Dagsboro-Selbyville Western Bypass Alternatives: Natural Resource Impacts

	Dagsboro west bypasses		Frankford west bypasses		Selbyville west bypasses (DE impacts only)	
	Alternative E	Alternative F	Alternative G	Alternative H	Alternative I6	Alternative I7
Area of Potential Floodplain Impacts - FEMA (acres)						
100-Year	0	0	0	0	10	11
Area of Potential Wetland/Waters of the US Impacts						
Total Wetlands (acres)	3	4	0	0	3	3
Hydric Soils (acres)	67	57	71	42	57	64
Waters of the US (linear feet)	9,300	7,600	5,200	3,700	7,200	5,700
Potential Agricultural Impacts (acres)						
Agricultural Districts	0	0	0	0	0	0
Agricultural Preservation Easements	0	0	0	0	0	0
Prime Farmlands	74	57	82	46	65	78
Potential Hazardous Waste Impacts						
Number of EPA Sites	0	0	0	0	0	0
Number of NPDES Locations	0	0	0	0	0	0
Potential Natural Resource Impacts (acres)						
Natural Areas	0	0	0	0	0	0
State Resource Areas	0	0	0	0	0	0
Forestland: 2002 Land Use	2	5	6	0	5	5
State Forest	0	0	0	0	0	0
Rare, Threatened and Endangered Species	TBD	TBD	TBD	TBD	TBD	TBD
Parks and Recreation Areas	0	0	0	0	0	0

Dagsboro-Selbyville Western Bypass Alternatives: Cultural Resource Impacts

	Dagsboro west bypasses		Frankford west bypasses		Selbyville west bypasses (DE impacts only)	
	E	F	G	H	I6	I7
Potential Cultural Resources Impacts						
Number of NRHP Buildings, Structures and Objects	0	0	0	0	0	0
Number of NRHP Archeological Sites	0	0	0	0	0	0
Number of NRHP Districts	0	0	0	0	0	0
Number of CRS Buildings, Structures and Objects	2	1	1	5	3	2
Number of CRS Archeological Sites	0	0	0	0	0	0
Number of CRS Areas/Districts	0	0	0	0	0	0
Number of Potential CRS Points	3	6	9	2	3	11
Number of Cemeteries	0	0	0	0	0	0
Predictive Model: Prehistoric Sensitivity - High & Moderate (acres)	0	0	0	0	9	9
Predictive Model: Prehistoric Sensitivity - Low (acres)	2	2	9	3	20	36
Predictive Model: Early Historic Sensitivity - High & Moderate (acres)	0	0	0	0	0	0
Predictive Model: Early Historic Sensitivity - Low (acres)	0	0	3	0	0	0
Predictive Model: Sites of Historic Sensitivity - High & Moderate	2	3	1	1	7	10
Predictive Model: Sites of Historic Sensitivity - Low	0	0	0	0	2	2

Dagsboro-Selbyville Western Bypass Alternatives: Property Impacts

	Dagsboro west bypasses		Frankford west bypasses		Selbyville west bypasses (DE impacts only)	
	E	**F**	**G**	**H**	**I6**	**I7**
Properties (numbers of, total acres)						
Properties affected (numbers of)	34	27	31	25	59	79
Properties affected (total acres)	78	63	83	41	67	72
Access Rights (numbers of affected properties)						
Denial of Access (numbers of)	0	0	0	0	0	0
Residential						
Agricultural						
Commercial						
Industrial						
Modified Access (numbers of)	0	0	0	0	0	0
Residential						
Agricultural						
Commercial						
Industrial						

Western Bypass Alternatives

- **Length:**
  - The short western bypasses of Millsboro (Alternatives C4, C5, C8, D4, and D8) are between 5.1 and 6.4 miles long.
  - The long western bypass of Millsboro and Dagsboro (Alternative C9) is 9.3 miles long.
  - The Alternative B3 bypass is 12.1 miles long.
  - The SR 24 connectors are about 4 miles long.
  - Each of the short bypasses around Dagsboro, Frankford, and Selbyville is less than 2½ miles long.

Western Bypass Alternatives

- **Traffic benefits:**
  - The short western bypasses of Millsboro (Alternatives C4, C5, C8, D4, and D8) would carry between 25,000 and 30,000 vehicles per day, cutting future traffic on US 113 by 35% to 55%.
  - The long western bypass of Millsboro and Dagsboro (Alternative C9) would carry between 28,000 and 44,000 vehicles per day, cutting future traffic on US 113 by about 50% to 70%.
  - The SR 24 connector associated with each western bypass of Millsboro would carry about 12,000 vehicles per day.
  - Each of the short bypasses around Dagsboro, Frankford, and Selbyville would divert nearly all traffic from existing US 113.

Western Bypass Conclusions

- All western bypasses appear to be effective in reducing traffic on existing US 113.
- The Dagsboro and Frankford bypasses have generally been perceived as having no real benefit to those towns.
- The close-in Selbyville bypass (Alternative I7) has no public support.
- Among the short Millsboro western bypasses, Alternative D8 has the least resource impacts almost across the board.
- Natural resource impacts are generally comparable between eastern and western bypasses.

DISCUSSION

Next Steps

- **May:** Public Workshop #4 – Present recommendations on Alternatives to be Retained for Detailed Study and those alternatives recommended to be dropped (May 23, 2005 in Millsboro; May 24, 2005 in Selbyville)

Next Working Group Meeting

- In the fall; schedule to be determined

Traffic Analysis

- The process and general trends will be discussed in more detail tonight
- We'll review questions raised during the last working group meeting
- Updated preliminary model results for each alternative will be presented at the next working group meeting

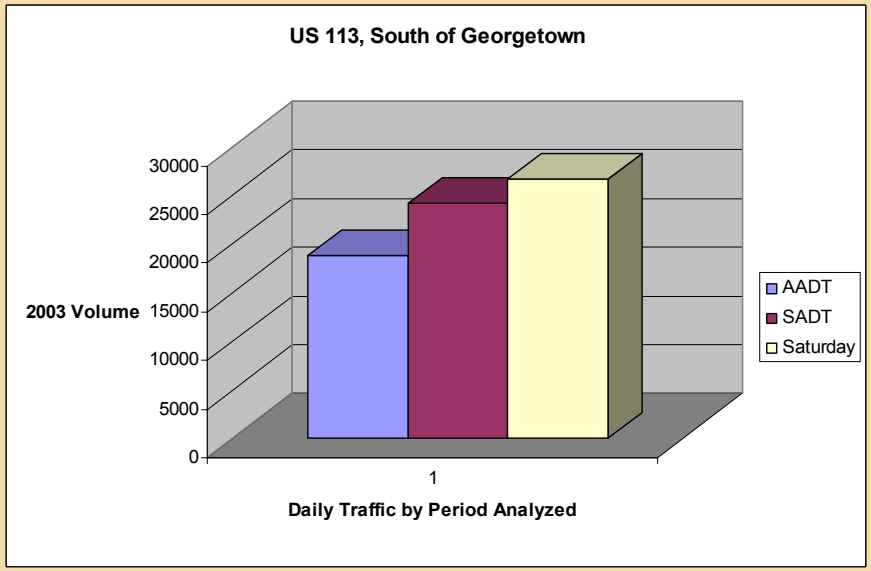
Traffic Analysis
Project Planning Process

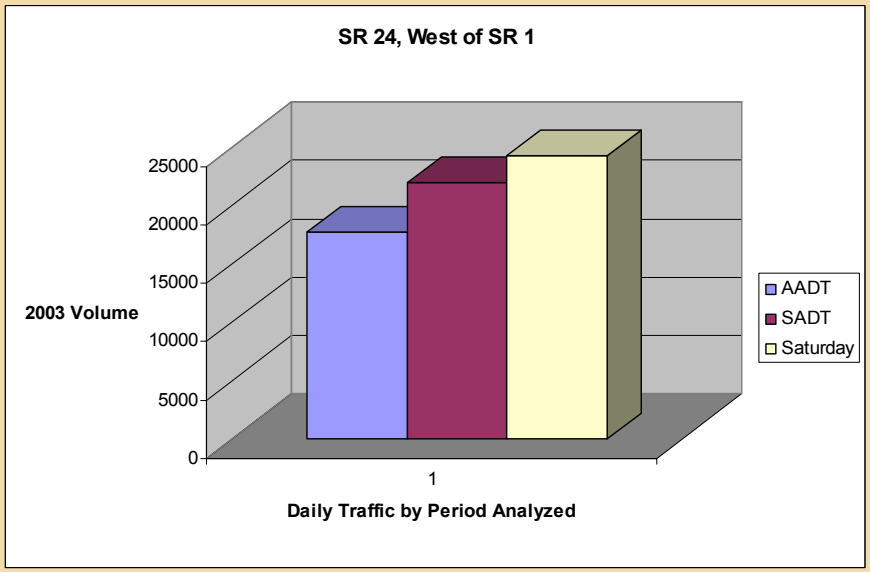
- **Stage 1: Establish Future Traffic** [WE ARE HERE]
- **Stage 2: Establish Facility Size**
- **Stage 3: Establish Types of Access**
- **Stage 4: Establish Concept Designs**

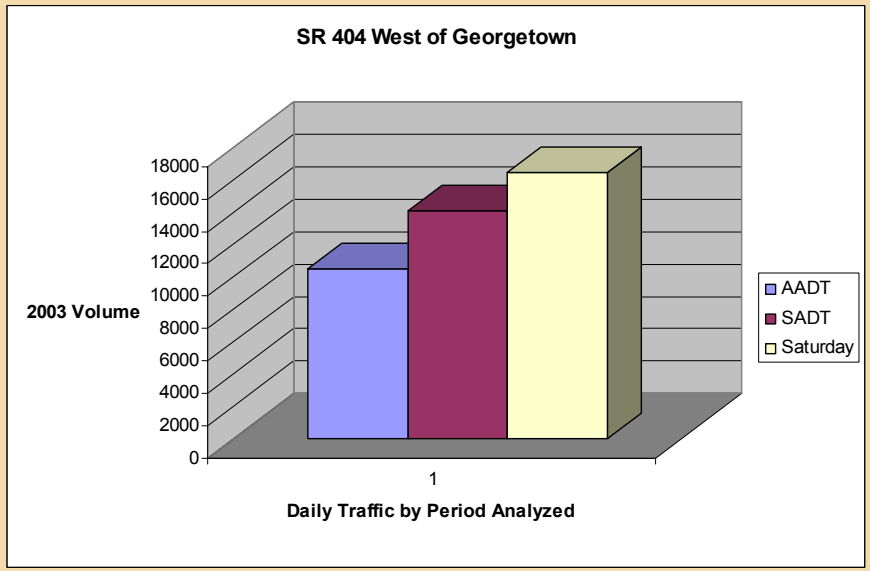
REMEMBER: PREDICTING THE FUTURE IS NOT AN EXACT SCIENCE!

Traffic Analysis
Establishing Future Traffic

- **How do we project future (2030) traffic volumes?**
  - **Determine existing daily traffic levels on the current road system.**
  - **Determine future daily traffic levels on the current road system.**
  - **Determine future daily traffic levels with the proposed project.**
- **For most projects, we typically select alternatives based on annual average daily traffic (AADT)**
- **We will select alternatives for US 113 based on summer average daily traffic (SADT)** [THESE ARE THE NUMBERS THAT MATTER NOW]
- **Detailed design will be based on peak period traffic (typically a summer Saturday)**


US 113, South of Georgetown
2003 Volume
30000
25000
20000
15000
10000
5000
0
1
Daily Traffic by Period Analyzed
AADT
SADT
Saturday

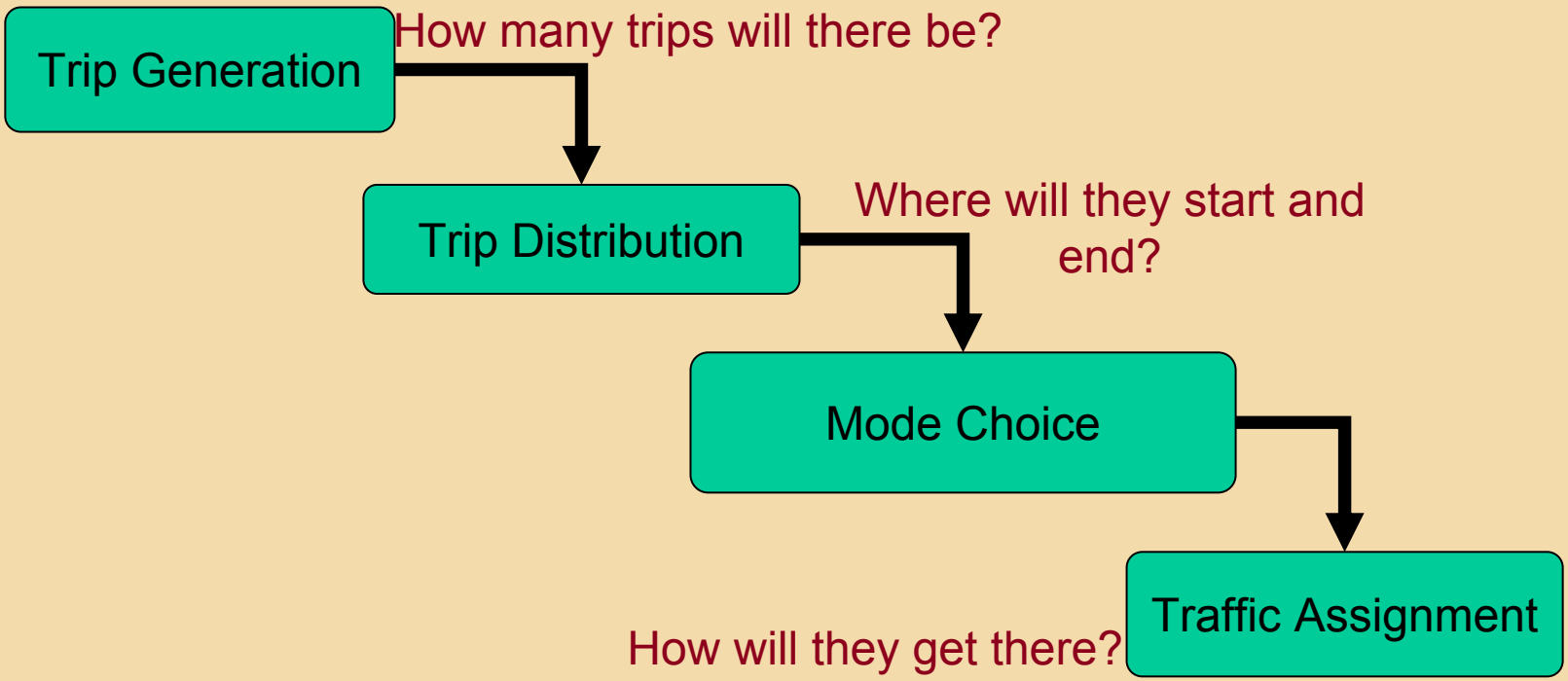

SR 24, West of SR 1
2003 Volume
25000
20000
15000
10000
5000
0
1
Daily Traffic by Period Analyzed
AADT
SADT
Saturday


SR 404 West of Georgetown
2003 Volume
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
1
Daily Traffic by Period Analyzed
AADT
SADT
Saturday

Traffic Analysis

Establishing Future Traffic

- **Travel demand models are used to approximate current use and forecast future use of roadways in a study area.**



Traffic Analysis
Establishing Future Traffic

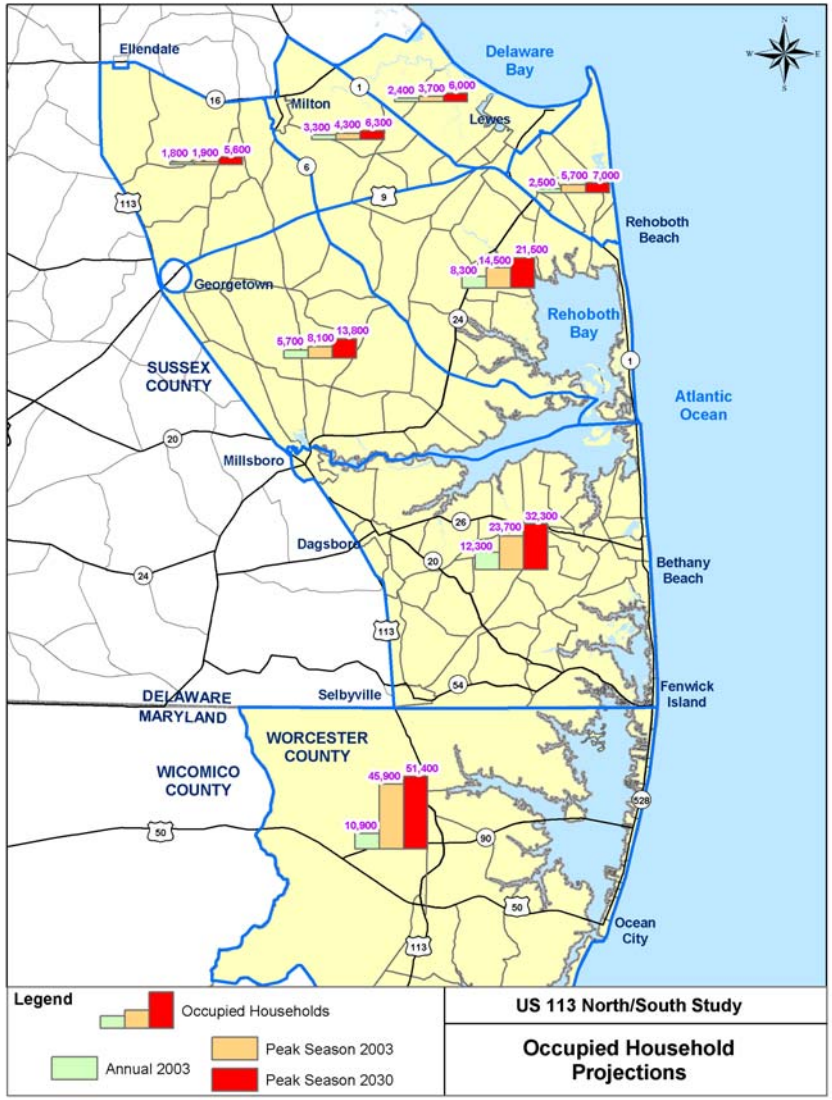
- **TRIP GENERATION – Determines the number of trips produced by and attracted to each zone.**
  - **Traffic Analysis Zones (TAZs) are geographic units like blocks or groups of blocks.**
  - **Households generally produce trips.**
  - **Employers generally attract trips (whether work trips or consumer trips).**
  - **The number of trips per household is based on an ongoing Personal Transportation Survey conducted by the University of Delaware.**

Traffic Analysis
Establishing Future Traffic

- **One key to good traffic projections is estimating future jobs and households.**
  - **Based on Census standards, the Delaware Population Consortium develops state- and county-wide projections.**
  - **The University of Delaware (CADSR) breaks those projections down to census county divisions (CCDs), then eventually down to TAZs.**
  - **There is very little flexibility in the CCD projections.**
  - **However, there is flexibility at the TAZ level to account for recorded development activity.**
  - **All of these projections are developed in consultation with counties and municipalities throughout Delaware.**


MILFORD
Kent County
Sussex County
Delaware Bay
Maryland
Sussex County
GEORGETOWN
Atlantic Ocean
Rehoboth Bay
Indian River Bay
MILLSBORO
Sussex County
SELBYVILLE
Legend
Roads
Municipal Boundary
Census County Division (CCD)
Transportation Analysis Zone (TAZ)
US 113 North/South Study
Census County Divisions and TAZ's
Sussex County
H:\30000\31514-01\GIS\Mapfiles\PlanningDistricts_TAZ\PlanningDistricts_TAZ.mxd

- **Estimates of future households take into account both full-time (“annual”) and peak season occupancy.**



Traffic Analysis

Establishing Future Traffic

- **TRIP DISTRIBUTION – Determines where trips start and end.**
  - **Travel occurs between zones based on the number and type of households and employees and the distance separating them.**
  - **Travel from outside and through the study area is also included.**

- **MODE SPLIT – Determines the means of travel between zones.**
  - **In Sussex County, that's almost always cars.**

Traffic Analysis
Establishing Future Traffic

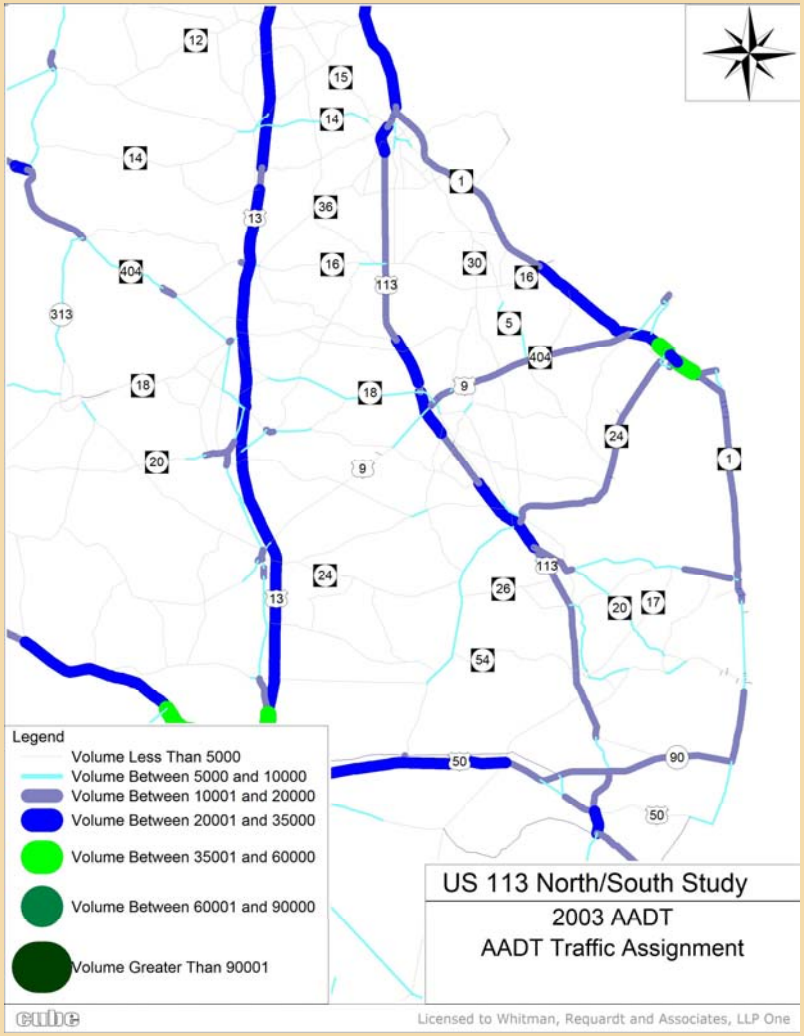
- **TRIP ASSIGNMENT – Determines which roads travelers take between zones.**
  - **Travelers make decisions based on a combination of time, distance, and cost.**
  - **As traffic volumes increase on roadways, the model predicts relative reductions in speed due to congestion.**

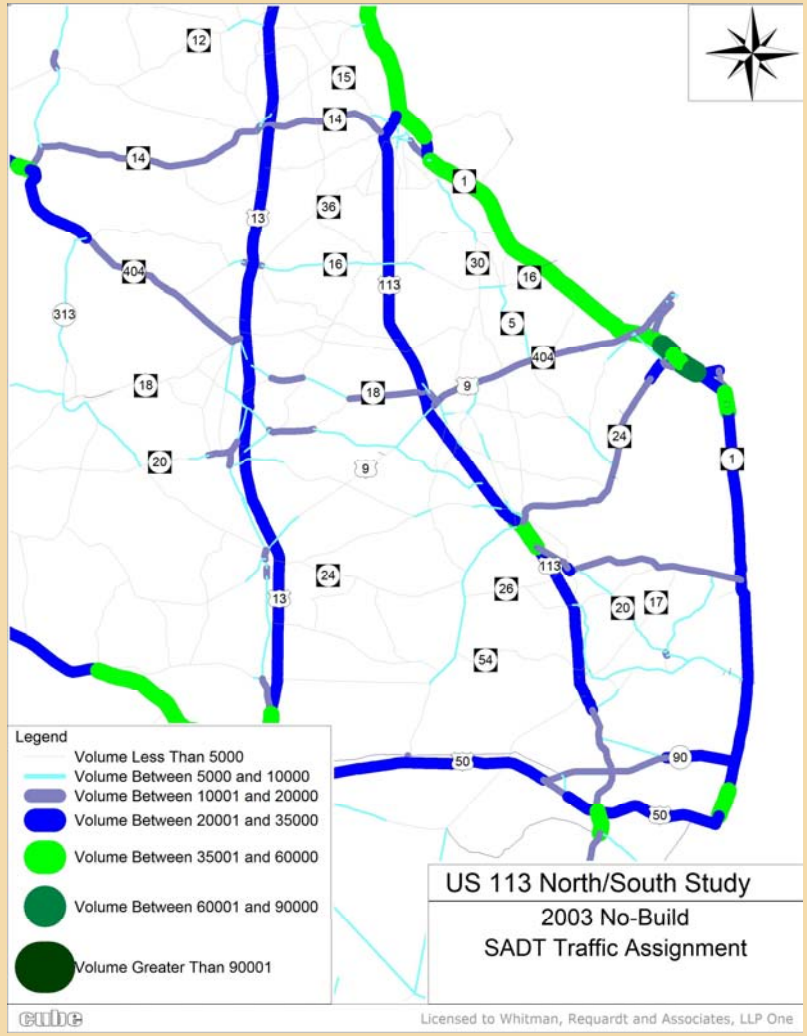
Traffic Analysis

Establishing Future Traffic

- The model is refined ("calibrated") until it predicts traffic volumes that acceptably match existing traffic counts.
- This model is well calibrated within the project area.

PRELIMINARY STAGE 1 FINDINGS:

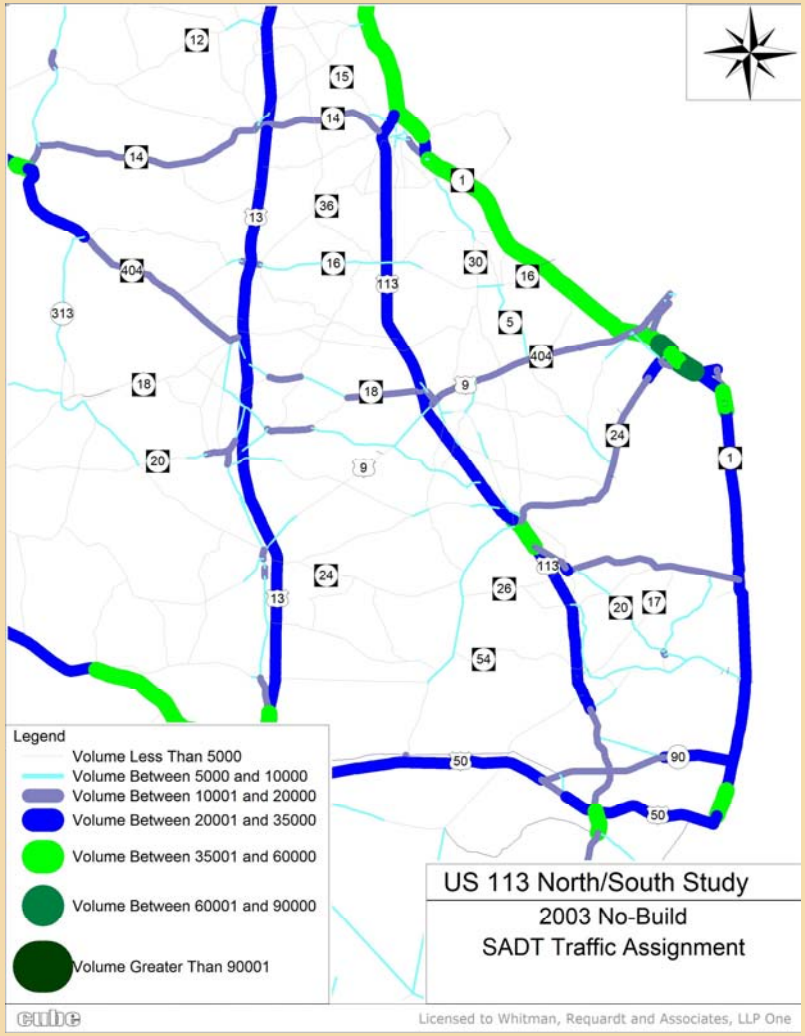




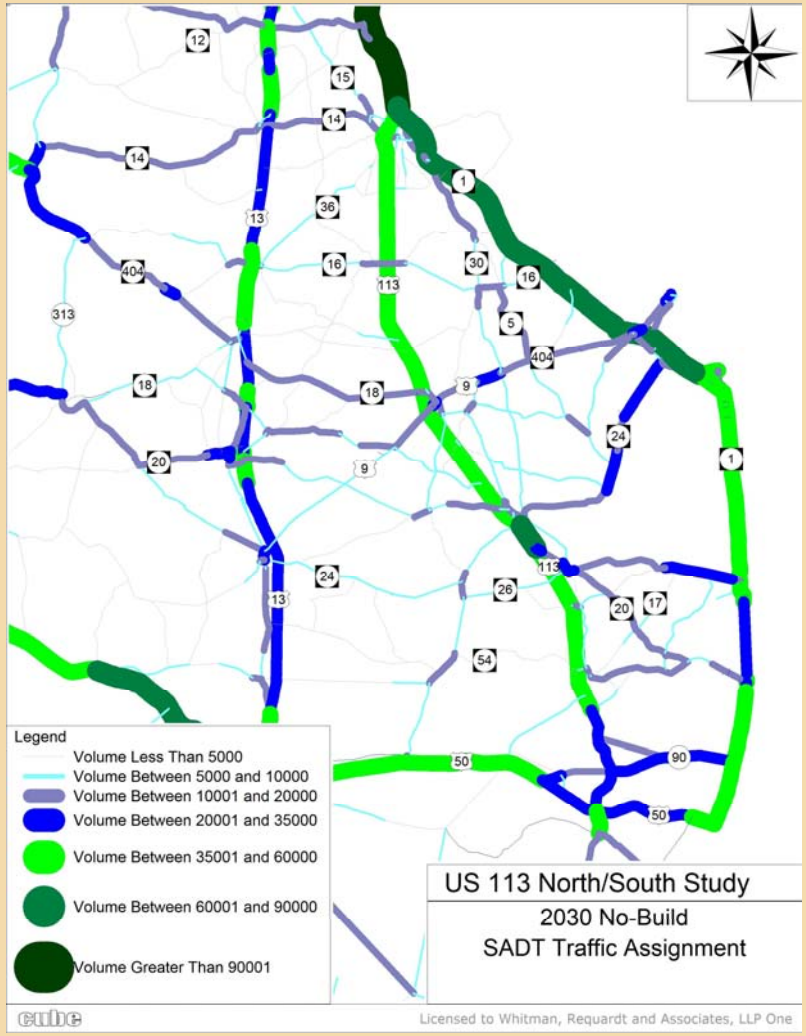
2003 average daily traffic over the entire year ("AADT")

How does the peak season affect traffic?

2003 average daily traffic during the summer ("SADT")

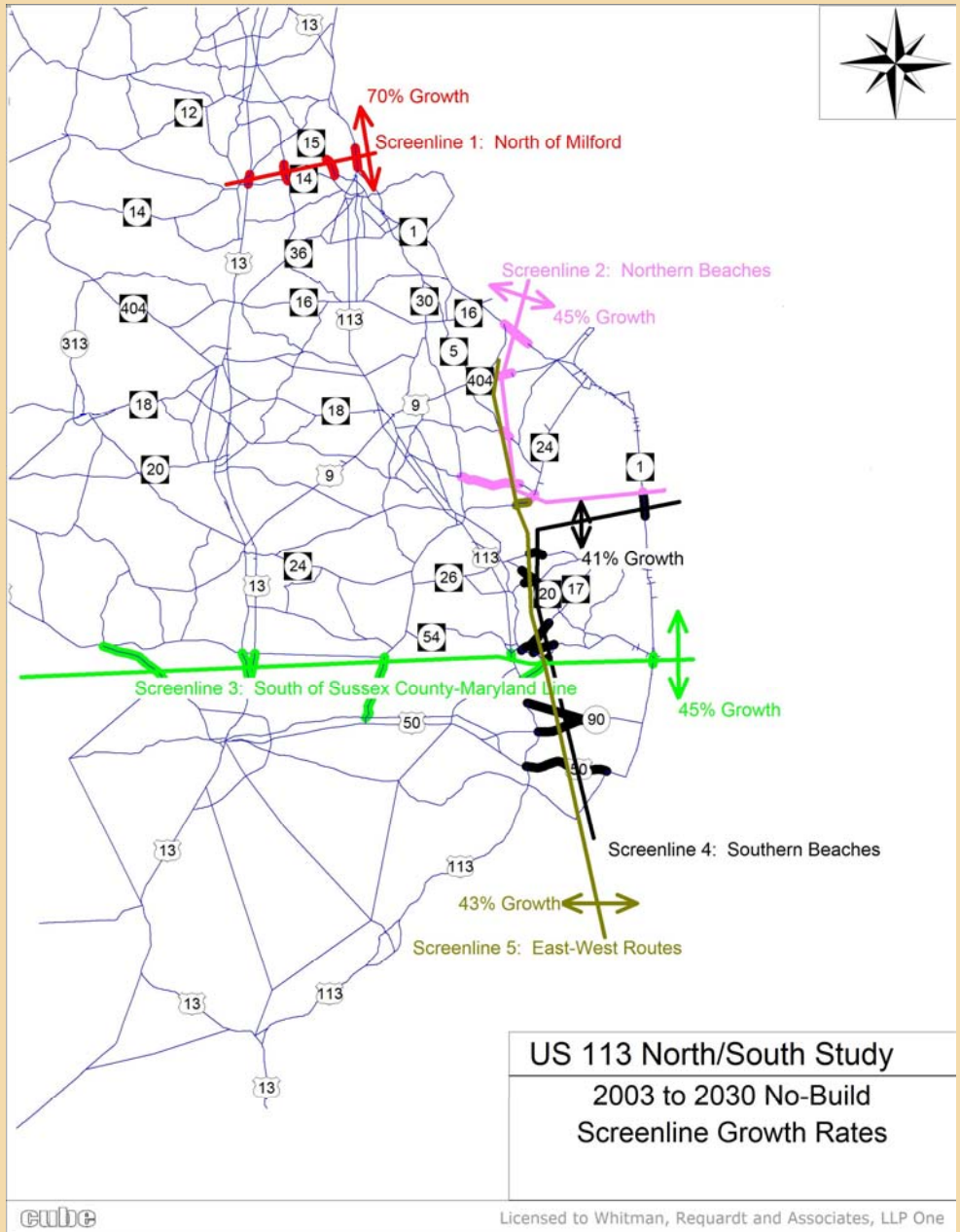


2003 average daily traffic during the summer



2030 average daily traffic during the summer

How will summer traffic grow over time?



How will summer traffic grow over time?

Traffic Analysis

Answers to the Working Group's Questions

- **1. Why are the "existing" numbers on SR 24 in Millsboro so low?**
  - **The map presented at the last meeting showed ANNUAL average daily traffic, not SUMMER average daily traffic.**
  - **Existing SUMMER average daily traffic from the model seems more consistent with the public's expectations.**
  - **Bear in mind that summer Saturdays are busier than average summer days.**
  - **Also, in downtown areas, there may be very short local trips that are not reflected in the model.**

Traffic Analysis

Answers to the Working Group's Questions

- **2. Why do the future numbers on SR 24 east of Millsboro grow so little?**
  - **Total traffic to and from the Lewes, Rehoboth Beach, and Long Neck area is expected to increase by 47% through 2030.**
  - **The bulk of that growth is NOT expected to be on SR 24 through Millsboro because the town is already congested.**
  - **As travelers seek alternate routes, much greater traffic growth is expected on SR 5 (88%), Mount Joy Road (80%), and other routes than SR 24 (16%).**

Traffic Analysis

Answers to the Working Group's Questions

- **3. Why is there so much traffic growth on US 113 so far south?**
  - **Improvements to SR 1 north of Milford and US 113 in Maryland will make US 113 more attractive as a north-south through route.**
  - **Worcester and Wicomico Counties are growing as destinations in their own right.**
  - **More Sussex County residents work in Maryland than in Kent County, and that trend is expected to continue.**

Traffic Analysis

Answers to the Working Group's Questions

- **4. Why don't some of the numbers on the traffic maps add up?**
  - **Existing traffic volumes are based on actual counts, which vary from season to season and even from day to day.**
  - **Projected traffic volumes from the model should add up, because the model never adds or loses trips.**
  - **In some cases, those trips take smaller side roads or are produced or attracted along the road.**

Traffic Analysis

Answers to the Working Group's Questions

- **5. Why would there be more traffic on [X] bypass than on [Y] bypass? That just doesn't make sense!**
  - **It depends on the circumstances.**
  - **The model assigns trips based on time, distance, and cost. Time lost waiting at signals is included.**
  - **Generally, most (if not all) through traffic will take a bypass unless it is congested or too far out of the way.**
  - **Local traffic will take the quickest, shortest route.**
  - **If you provide specific examples, we'll research them for the next working group meeting.**

Traffic Analysis
Conclusion

- Travel demand modeling is a complex, inexact process.
- To be valid, our travel forecasts must:
  - Be based on sound technical analysis, and
  - Make sense to you and to the public.
- If anything isn't clear, let us know.