



November 16, 2016

*FS-1205A I-40 Managed Lanes
From I-85 to Wade Avenue*

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Project Limits / Location



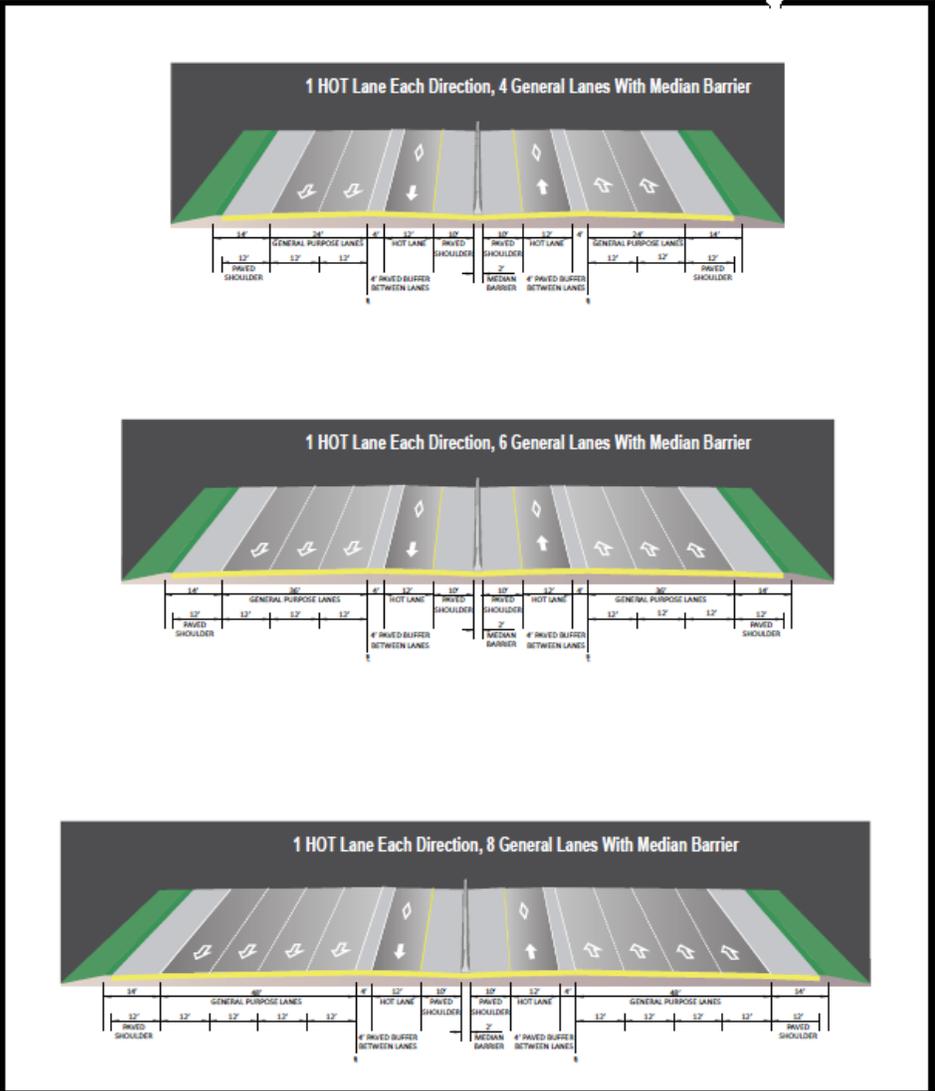
- Study evaluated managed lanes on I-40 from I-85 to Wade Avenue (approximately 30 miles)
- Considered both one and two managed lanes per direction on I-40
- Evaluated both one and two managed lanes per direction
- Total costs of one managed lane per direction is approximately \$1.05 billion while the total costs of 2 managed lanes is anticipated to be \$1.1 billion

2040 I-40 Mainline AADT Volume

Green – Below Capacity, Yellow – Approaching Capacity, Orange – At Capacity, Red – Over Capacity

Segment	No-Build ¹
I-85 to Old NC 86	83,400
Old NC 86 to New Hope Church Rd	95,600
New Hope Church Rd to NC 86	100,100
NC 86 to US 15-501	111,900
US 15-501 to NC 54	131,800
NC 54 to NC 751	175,500
NC 751 to Fayetteville Rd	170,300
Fayetteville Rd to NC 55	187,600
NC 55 to Alston Avenue	189,200
Alston Avenue to NC 147	189,200
NC 147 to Davis Dr	223,500
Davis Dr to S. Miami Blvd	229,200
S. Miami Blvd to Page Rd	249,500
Page Rd to I-540	260,000
I-540 to Airport Blvd	217,700
Airport Blvd to Aviation Pkwy	209,200
Aviation Pkwy to N. Harrison Ave	238,300
N. Harrison Ave to Wade Ave	245,500

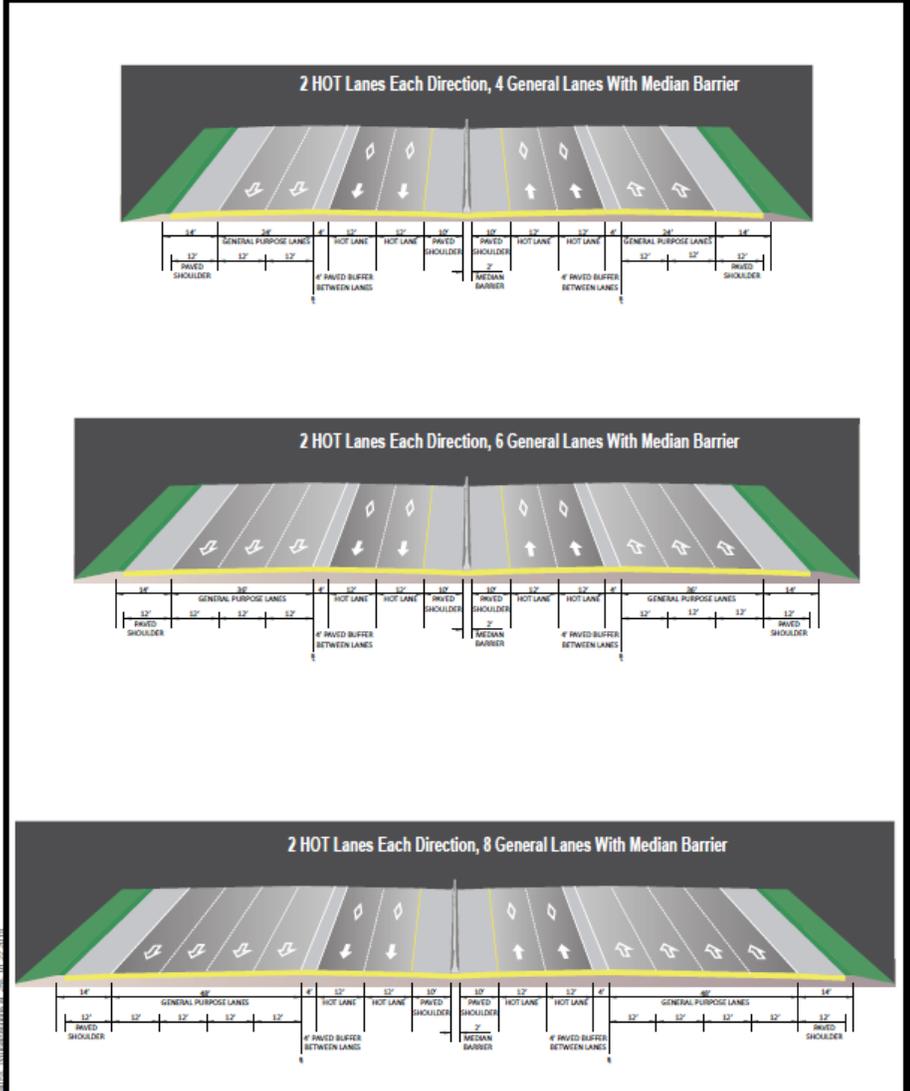




I-40 FEASIBILITY STUDY
 STIP PROJECT NO. FS-1205A
 Orange, Durham, & Wake Counties

TYPICAL SECTIONS

ALTERNATIVE 1
 ONE MANAGED LANE
 EACH DIRECTION
 FIGURE 2

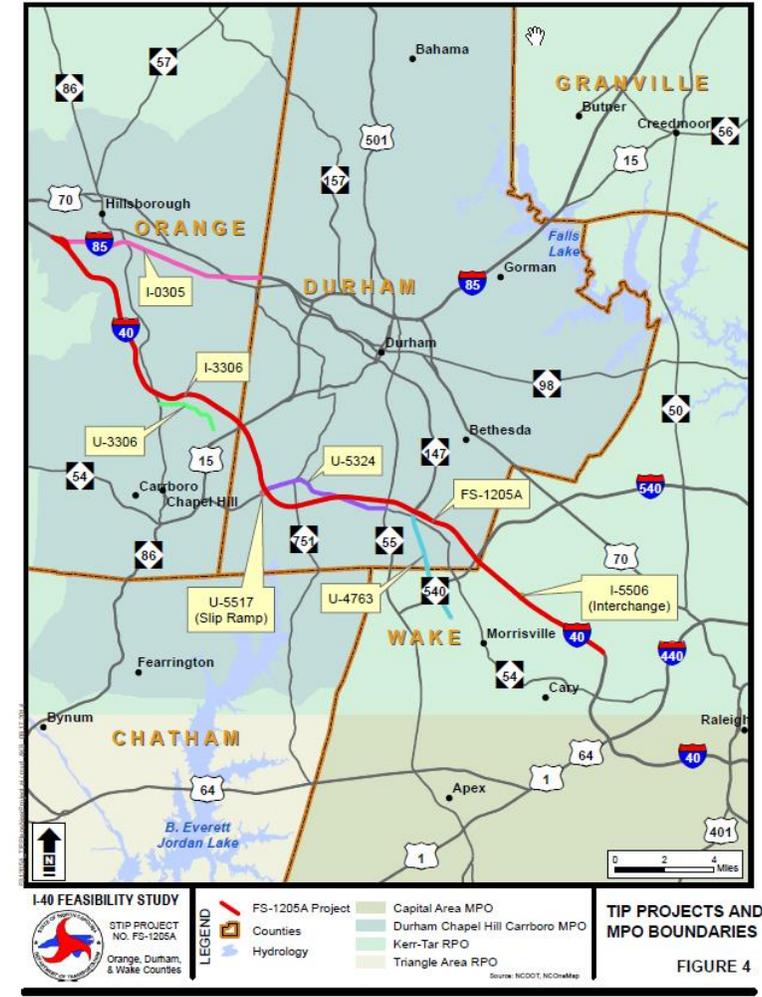
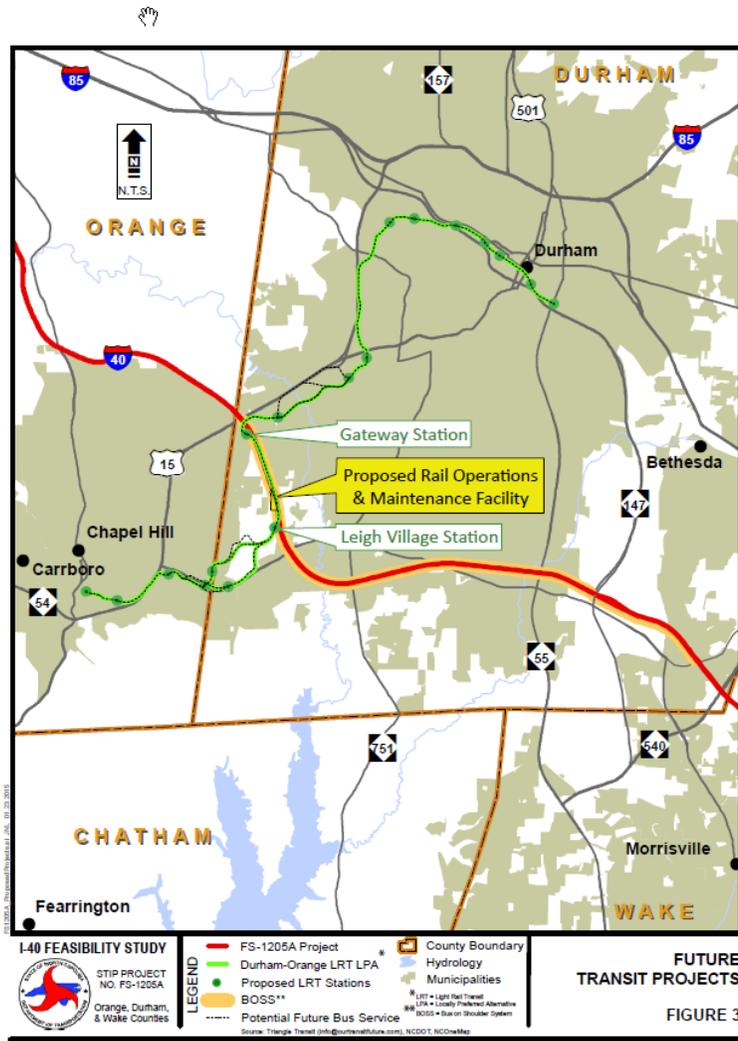


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TYPICAL SECTIONS

ALTERNATIVE 2
 TWO MANAGED LANES
 EACH DIRECTION
 FIGURE 2A

Transit and TIP Projects



Potential Major Issues

- Determination of ultimate number of managed lanes by segment.
- Major managed lane connection at I-540 and NC 147
- Ultimate location of direct ingress and egress points
- Potential Right of Way impacts at ingress and egress points
- Reconstruction required to implement either 1 or 2 managed lanes per direction for much of the corridor.
- Coordination with Transit Projects (See Figure 3)



Ingress/Egress Points

- **Currently have multiple ingress/egress points included in the estimated costs but a final determination will need to be made during later planning and design phases.**
- **Not all of the preliminary identified locations will ultimately be provided and some maybe shifted based on more detailed analysis and modeling in later phases.**
 - **Preliminary locations are as follows:**
 - **Wade Avenue**
 - **Harrison Avenue**
 - **Aviation Parkway**
 - **I-540 (Major Interchange connection)**
 - **S. Miami Boulevard**
 - **NC 147 (Major Interchange connection)**
 - **Renaissance Parkway**
 - **NC 751**
 - **US 15-501 via Mt. Moriah Road**
 - **NC 86**

Cost Comparison

Table 7: Cost Estimates

	Alternative 1 One Managed Lane			Alternative 2 Two Managed Lanes		
	West	Central	East	West	Central	East
Construction Cost	\$214,000,000	\$359,000,000	\$410,000,000	\$235,000,000	\$382,000,000	\$413,000,000
ITS	\$1,700,000	\$1,400,000	\$600,000	\$1,700,000	\$1,400,000	\$600,000
Utility Relocation*	\$2,500,000	\$3,700,000	\$2,500,000	\$2,500,000	\$3,700,000	\$2,500,000
R/W Cost*	\$11,700,000	\$31,800,000	\$7,700,000	\$11,700,000	\$31,800,000	\$7,700,000
Total Cost	\$229,900,000	\$395,900,000	\$420,800,000	\$250,900,000	\$418,900,000	\$423,800,000

*Utility cost and R/W cost are provided for the ultimate condition of two managed lanes each direction.

West-From I-85 in Orange County to 1.5 miles west of NC 54 in Durham County

Central-From 1.5 miles west of NC 54 to 0.4 miles (2000') east of South Miami Boulevard in Durham County

East-From 0.4 miles (2000') east of South Miami Boulevard in Durham County to 0.7 miles (3500') east of North Harrison Avenue in Wake County



Conclusion and Recommendations

- Alternative 2 (two managed lanes in each direction) is the preferred alternative from a feasibility study perspective because it would best meet the long term needs of the corridor by providing a more reliable travel time and flexibility in the corridor at a very modest increase in costs.
- However, a final determination concerning the ultimate configuration (1 or 2 managed lanes per direction) in specific sections should be made during later planning and design stages as refined analysis, traffic and revenue, and local input are developed and factored in to the process.