

Assessing Economic Impacts of the Kinston Bypass

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Speaker Bios

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Nik Carlson

Nik Carlson is a Principal Economist and Group Manager in AECOM's San Francisco Office. Mr. Carlson has 24 years of transportation economics experience that includes the economic value of user benefits (i.e. the reduced travel times and fuel costs, increased reliability and safety) and business impacts (i.e. changes in supply, labor force, supply freight and market access on their operations).

Mr. Carlson has a Master's in Philosophy, Politics and Economics from Oxford University and a Master's in Public Policy from Harvard University.



Kory Wilmot, AICP

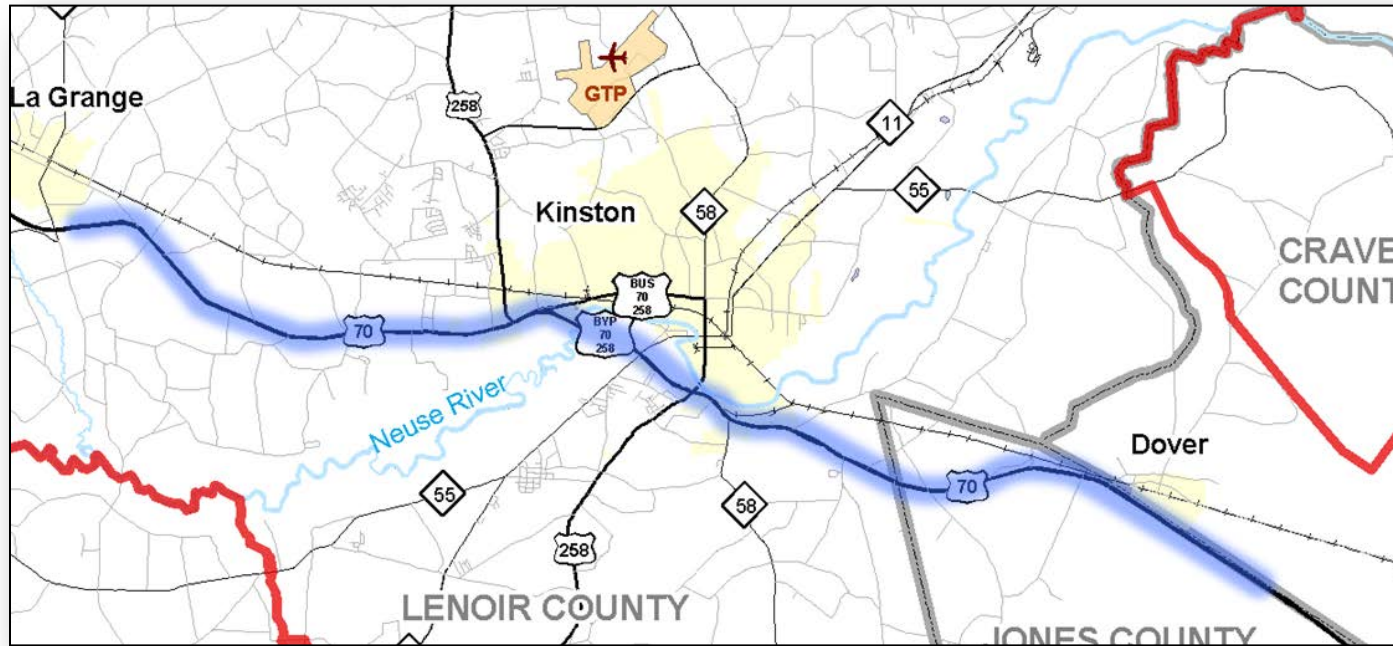
Kory Wilmot is an AICP certified urban planner with AECOM in the Raleigh-Durham Office. Mr. Wilmot has worked for AECOM for twelve years with his primary focus on land use, transportation, and environmental planning. His projects have included roadway, transit, and railroad projects.

Mr. Wilmot has a Bachelor's of Art in Urban and Regional Planning from the University of Illinois and a Master's in Public Administration from the University of North Carolina.

Overview

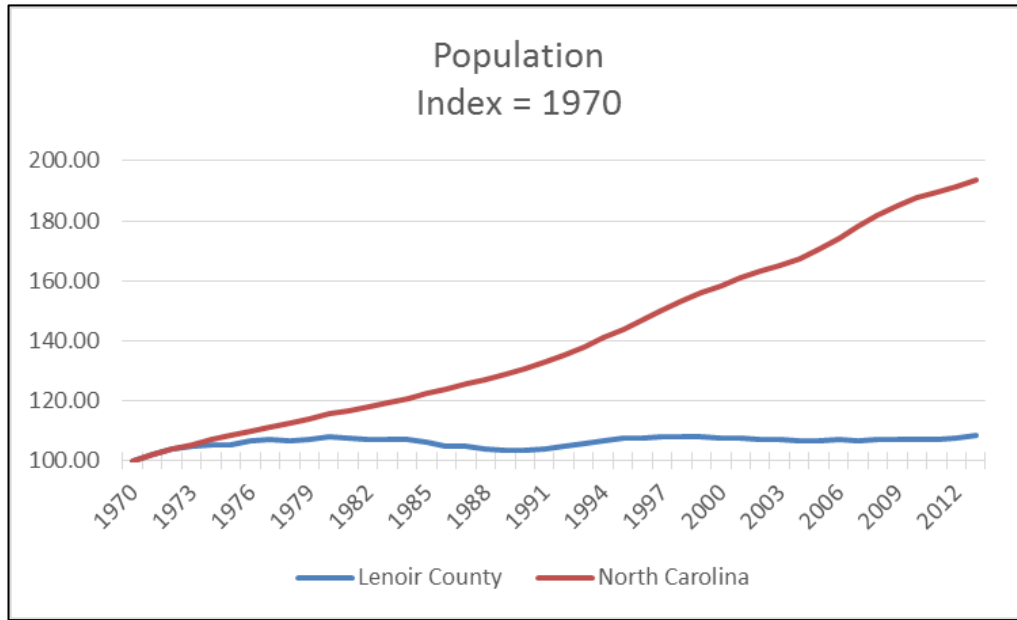
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What is the Kinston Bypass Project?



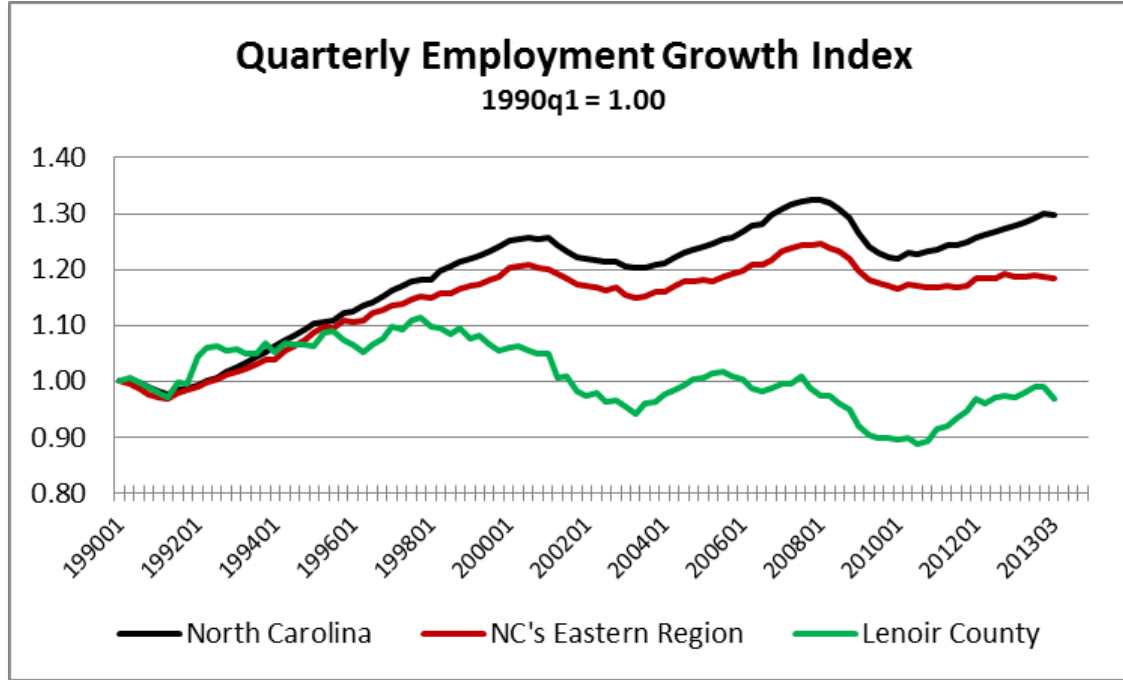
- A proposed four-lane, median divided freeway, full control of access
- Would bypass existing US 70 on the south side of Kinston
- Purpose is to improve regional mobility, connectivity, and capacity
- Part of the US 70 Strategic Highway Corridor from I-40 to the Port of Morehead City

Description of Kinston / Lenoir County



- Kinston is the county seat of Lenoir County, NC
- Local employment, services and retail center – nearest cities are Goldsboro (west) and Greenville (north)
- Aging and economically challenged rural community – population has been in slow declines for several decades

Lenoir County Economy



- Low income community – median income is 78% of NC average
- Relatively high unemployment rate (10%) and struggling to revitalize
- Recent success with large manufacturing and food processors
- US 70 is a key transportation route for I-95 and Port access

Project Planning Process

- NCDOT began planning process for an Environmental Impact Statement (EIS)
- Community Studies
Technical Studies:
 - Community Impact Assessment
 - Indirect and Cumulative Effects Report




Why was an Economic Impact Assessment needed?

- US 70 corridor has 343 businesses with annual sales of \$1.9 billion 7,000 employees
- Many local businesses perceived to depend on “drive by” traffic
- During public outreach, both the business community and local officials expressed great concern over how the project would impact Kinston’s economy



Economic Impact Assessment (EIA) Approach

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EIA Purpose

Primary Objective

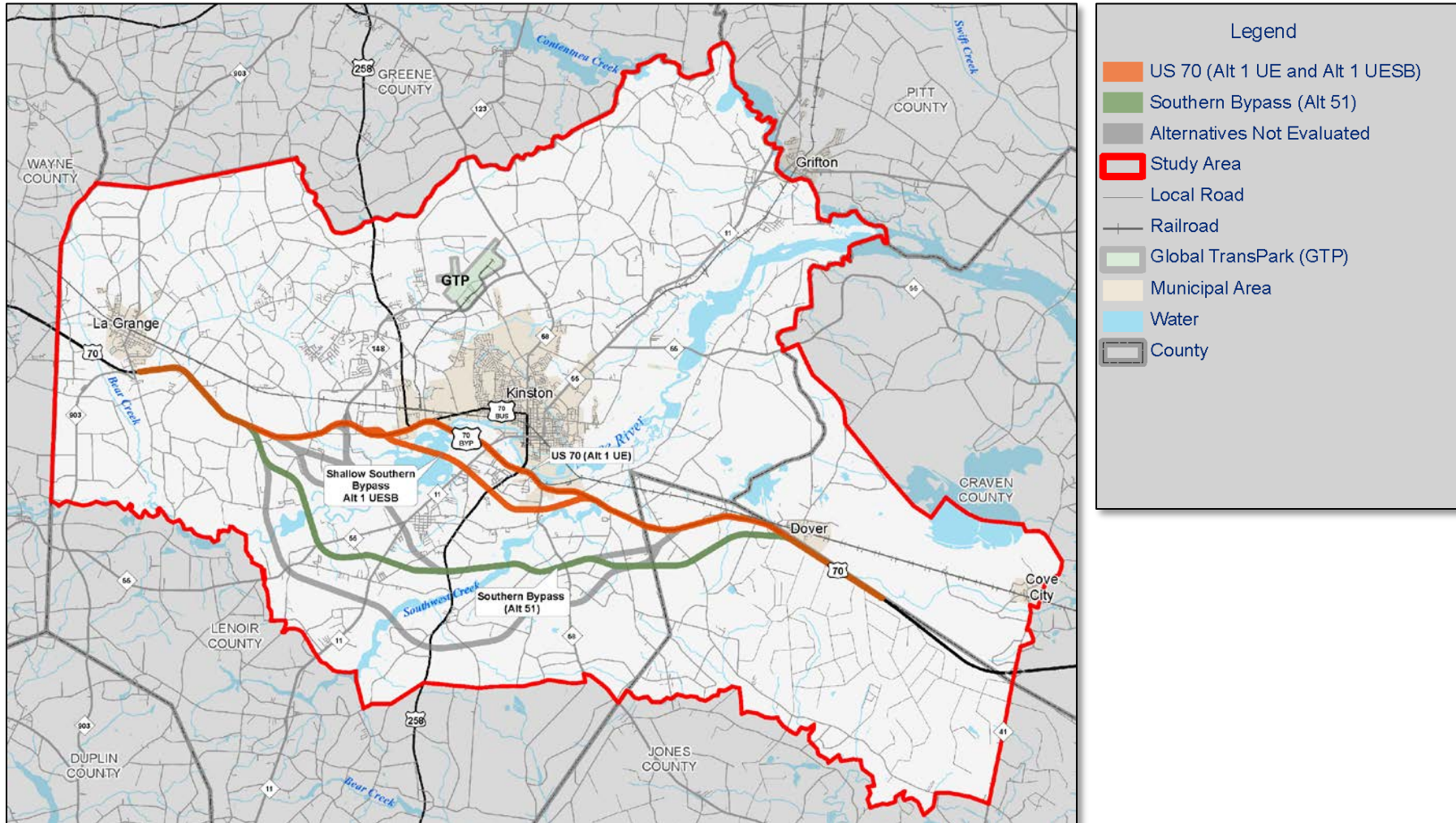
- Evaluate the project alternatives' future economic impact on the local economy
- Comparative analysis to inform future design selection
- Not a cost benefit analysis – EIA mostly focused on economic impacts to Lenoir County not system-wide

Secondary Objectives

- Inform and assist future local public planning efforts
- Inform public of key economic issues and direct focus on long-term outcomes

Project Alternatives

Three representative alternatives analyzed



Issues Analyzed

- EIA evaluated and when possible estimated:
- Highway Use Benefits
 - User: Travel Time Savings, Vehicle Operating Costs, Reliability
 - Social: Safety, Environmental
- Economic Development Impacts
 - Business Specific: Operations, Competitiveness, Site Accessibility
 - Regional and Industry Sector: Market access, Workforce availability, Land Use and Sales Shift Impacts

Key Components of EIA

- Public Outreach
- Existing Conditions Assessment
- Market Analysis
- Impact Analysis including use of IMPLAN for indirect and induced economic benefits



Public Outreach and Existing Condition Assessment

Public Outreach

- Mailed survey to all 375 business and property owners along US 70 corridor (9% response rate)
- Major businesses (> 50 employees) also contacted (17% response rate)
- Two roundtable discussions with local business leaders

Existing Conditions

- Literature review and research
- Demographic analysis
- Current traffic conditions

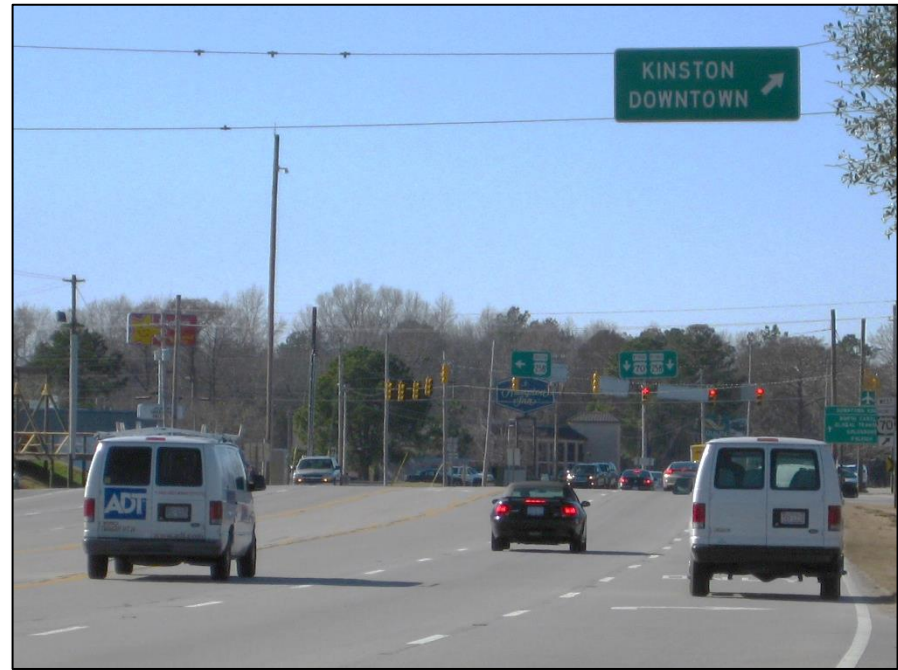


Market Analysis

- “Windshield” inventory of all businesses within project development areas to assess business type, site access, and property condition
- Sector analysis to identify highway-dependent vs. local-servicing businesses
- Key intersections and business clusters identified and evaluated
- Retail sales leakage (leakage analysis) of Kinston’s retail and service sectors
- Assessment of retail sales for origin and capture rates (local and non-local)
- Project’s future retail sales/shifts impacts estimated

Impact Analysis

- Existing Conditions
- Compared to future “No Build Baseline”
- Limited traffic data
- USDOT methodology for user impacts
- Recognize existing vs. new traffic growth in benefit estimation
- IMPLAN modeling used for indirect and induced impacts



EIA Findings - Highway User Benefits

Projected Traffic Growth (2040)

Impacts	Existing US 70 Alternatives		Bypass Alternatives	
	No-Build (Baseline)	Upgrade Existing US 70	Shallow Southern Bypass	Southern Bypass
Average Daily Traffic (2040)				
US 70	57,800	61,400	32,900	36,800
Bypass	-	-	27,600	22,400
Total	57,800	61,400	60,500	59,200
Net Annual Traffic Growth (2012 to 2040)				
Local	0	0	0	0
Non-Local	5,256,000	6,570,000	6,241,500	5,767,000
Total	5,256,000	6,570,000	6,241,500	5,767,000

- Net traffic growth of 2.4% (South) to 6.2% (US 70 Upgrade)
- 0.5 to 1.314 million additional vehicle trips
- All non-local traffic growth – no county population growth expected

Travel Time Savings

Impacts	Existing US 70 Alternatives		Bypass Alternatives	
	No-Build (Baseline)	Upgrade Existing US 70	Shallow Southern Bypass	Southern Bypass
Travel Time Savings Relative to No-Build				
Annual (2040)	-	\$2,489,000	\$4,138,000	\$3,722,000
Cumulative (2025 to 2040) (NPV @ 3%)	-	\$10,050,000	\$16,710,000	\$15,030,000

- Total travel time savings (2040) of \$2.5m (US 70 Upgrade) to \$4.1m (Shallow Southern Bypass)
- Travel time benefits mostly limited to peak periods for commute and weekend beach traffic

Safety

Impacts	Existing US 70 Alternatives		Bypass Alternatives	
	No-Build (Baseline)	Upgrade Existing US 70	Shallow Southern Bypass	Southern Bypass
Safety Improvement				
Annual (2040)	-	\$13,700,000	\$9,200,000	\$6,800,000
Cumulative (2025 - 2040) (NPV @ 3%)	-	\$55,100,000	\$37,100,000	\$27,600,000

- US 70 crash rate in Lenoir County 80% higher than state average
- Bypass expected to reduce crash rate/severity to state average
- EIA conservatively assumed no safety benefits for continued future of existing US 70 route
- Estimated 2040 safety benefit of \$6.8 (South) to \$13.7m (US 70 Upgrade)

Other Highway Use Benefits

Impacts	Existing US 70 Alternatives		Bypass Alternatives	
	No-Build (Baseline)	Upgrade Existing US 70	Shallow Southern Bypass	Southern Bypass
Fuel Savings	-	Highest	Medium	< Medium (Slightly)
	-	Most direct route; No US 70 Stoplights	Minor increased route; US 70 unchanged	Higher increased route; US 70 unchanged
Improved Reliability	-	Medium; Higher avg. speeds; Fewer crashes	Highest; Higher avg. speeds; Fewer crashes; Alternate Route for Delays	

- Fuel use and reliability benefits qualitatively evaluated due to limited traffic data
- Environmental benefits similarly could not be quantified
- “Upgrade 70” Alt. results in most fuel savings for future highway users
- Greater reliability benefits from the “Southern Bypass” Alts.

EIA Findings – Economic Development Impacts

Retail Sales Shift Impacts (2040)

Impacts	Existing US 70 Alternatives		Bypass Alternatives	
	No-Build (Baseline)	Upgrade Existing US 70	Shallow Southern Bypass	Southern Bypass
Highway Market Dependent Retail Growth (2040) Relative to No-Build (2012)				
Net Annual Sales Increase (cf. 2012)	\$43,300,000	\$34,200,000	\$21,100,000	\$6,500,000
Sales Shift Projections (70/30 Sales Origin) Relative to No-Build (2040)				
Annual (2040)	-	(\$9,100,000)	(\$22,200,000)	(\$36,800,000)
Cumulative (2025 to 2040) (NPV @ 3%)	-	(\$36,700,000)	(\$89,600,000)	(\$148,600,000)

- Retail sales shift only EIA quantified economic development impact
- Relatively limited retail growth - only from non-local sales increase
- “No Build” baseline conservatively assumes retail sales unimpaired despite deteriorated future US 70 travel conditions
- “Shift” of reduced retail growth for Lenoir County (2040) from \$9.1 (Upgrade US 70) to \$36.8m (South)

Business Specific Performance Benefits

Impacts	Existing US 70 Alternatives		Bypass Alternatives	
	No-Build (Baseline)	Upgrade Existing US 70	Shallow Southern Bypass	Southern Bypass
Business Performance				
Business Profitability	Reduced Financial Performance	Improved Financial Performance and Competitiveness		
Revenue Impacts	Reduced Market Area	Increased Market Area		
Cost Impacts	Higher Delivery Costs	Lower Transportation Costs		
	Reduced Labor Pool	Increased Labor Force Catchment Area		

- Benefits qualitatively assessed - impacts to businesses may differ depending on their specific operations and market conditions
- “Bypass Alts” result in similar business competitiveness benefits of better access to markets, workforce, and lower delivery costs

Existing Business and Land Use Impacts

Impacts	Existing US 70 Alternatives		Bypass Alternatives	
	No-Build (Baseline)	Upgrade Existing US 70	Shallow Southern Bypass	Southern Bypass
Existing Businesses Land Use and Access	Conservatively assumed no adverse sales impacts from degraded US 70 travel conditions	435 acres of farmland impacts are possible; US 70 access limited to interchanges; Potential encroachment and reduced site access	627 acres of farmland impacts are possible No site access changes; US 70 travel conditions improved	920 acres of farmland impacts are possible No site access changes; US 70 travel conditions improved

- Right-of-way impacts range from 435 to 920 acres of lost farmland
- Net earnings loss to farming range from \$112,000 to \$237,000/yr
- South Bypass Alts have no property impacts to US 70 businesses
- US 70 Upgrade will affect some US 70 businesses but more project design needed to quantify and evaluate site specific impacts

Economic Development Growth Potential

Impacts	Existing US 70 Alternatives		Bypass Alternatives	
	No-Build (Baseline)	Upgrade Existing US 70	Shallow Southern Bypass	Southern Bypass
Economic Development Potential	Retail growth limited and focused on US 70	Retail growth limited and focused on future US 70 interchange locations	Retail growth limited. US 70 growth/relocation also possible. Infill business growth likely at bypass interchanges.	Minimal net retail growth. Very limited infill growth due to poor amenities and negligible nearby market. US 70 growth also possible.
	Non-retail growth potentially constrained by worsened US 70 access	Non-retail growth encouraged by improved US 70 travel conditions and enhanced businesses' competitiveness		

- “Shallow Southern Bypass” provides best potential for infill development without direct impacts to US 70 businesses

EIA Findings – Summary

Summary Findings - Overview

- Safety benefits of a bypass result in greatest economic benefit followed by travel time savings
- Economic benefits from fuel savings, reliability, and environmental benefits could not be quantified
- Major retail leakage from Lenoir County indicating other stronger regional retail options / Kinston under-retailed
- No Build projected to have highest 2040 retail growth due to limited traffic data; however, Build Alts may result in improved retail access and development opportunities
- Earnings margins and job benefits vary considerably between business sectors – retail growth generates relatively limited economic development benefits

Alternative Comparison Summary

Southern Bypass

- Least economic benefit for Lenoir County due to limited connectivity with existing US 70 retail clusters
- Future business development along route is unlikely

Shallow Southern Bypass

- Existing US 70 retail clusters would remain readily accessible from this alternative
- Future infill development possible
- No major impacts to the existing businesses located on US 70

Upgrade Existing US 70

- Existing retail clusters would remain accessible to highway users, but access to many businesses could be reduced due to controlled access
- Right of way and new frontage road requirements would adversely affect and encroach upon many existing businesses and constrain the area's future development potential

Recommended Alternative

Total Impact (2025 to 2040) NPV @ 3%	Existing US 70 Alternatives		Bypass Alternatives	
	No-Build (Baseline)	Upgrade Existing US 70	Shallow Southern Bypass	Southern Bypass
Travel Time Savings	-	\$10,050,000	\$16,710,000	\$15,030,000
Safety Improvement	-	\$55,100,000	\$37,100,000	\$27,600,000
Right of Way	-	(\$1,111,000)	(\$1,606,000)	(\$2,350,000)
Retail Sales Shift	-	(\$36,700,000)	(\$89,600,000)	(\$148,320,000)
Net Benefits	-	\$27,339,000	(\$37,396,000)	(\$108,970,000)

- Southern Bypass clearly least economically beneficial
- No-Build has highest retail growth as EIA assumed no retail sales impairment from future US 70 deterioration
- US 70 Upgrade has positive and highest NPV - but does not include:
 - Encroachment or site access impacts to existing business
 - Limited potential for future infill development
 - Short term adverse construction impacts
- Shallow Southern Alt. has no US 70 impacts and best infill development potential - could be economically most preferable Alt.

Analysis Challenges and Recommendations

- NCDOT's first EIA – required scope development and greater stakeholder engagement
- 2040 “No Build” baseline very conservative – “no sales degradation” assumed due to limited traffic data
- Difficulty incorporating building conditions / business lifecycles into EIA
- “Upgrade US 70” property and construction impacts may be significant but require prelim. design to quantify
- EIA would benefit from traffic/retail studies to identify highway dependent sales origin and retail capture rates

Thank You

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