



U.S. 401 CORRIDOR STUDY

Wake County / Fuquay-Varina
Harnett County / Lillington



CAMPO Executive Board Meeting March 16, 2022



Stewart
HR&A Advisors
Spanish Speaking

Agenda

- **Project History**
- **New Alternatives in Response to Executive Board Direction**
- **Options to Move Forward**



Study Goals



Reduce congestion and
increase transportation
capacity and safety



Incorporate public and
stakeholder input



Encourage economic
development



Accommodate appropriate
modes of travel (transit,
bicycle, pedestrian, freight)



Where We Are

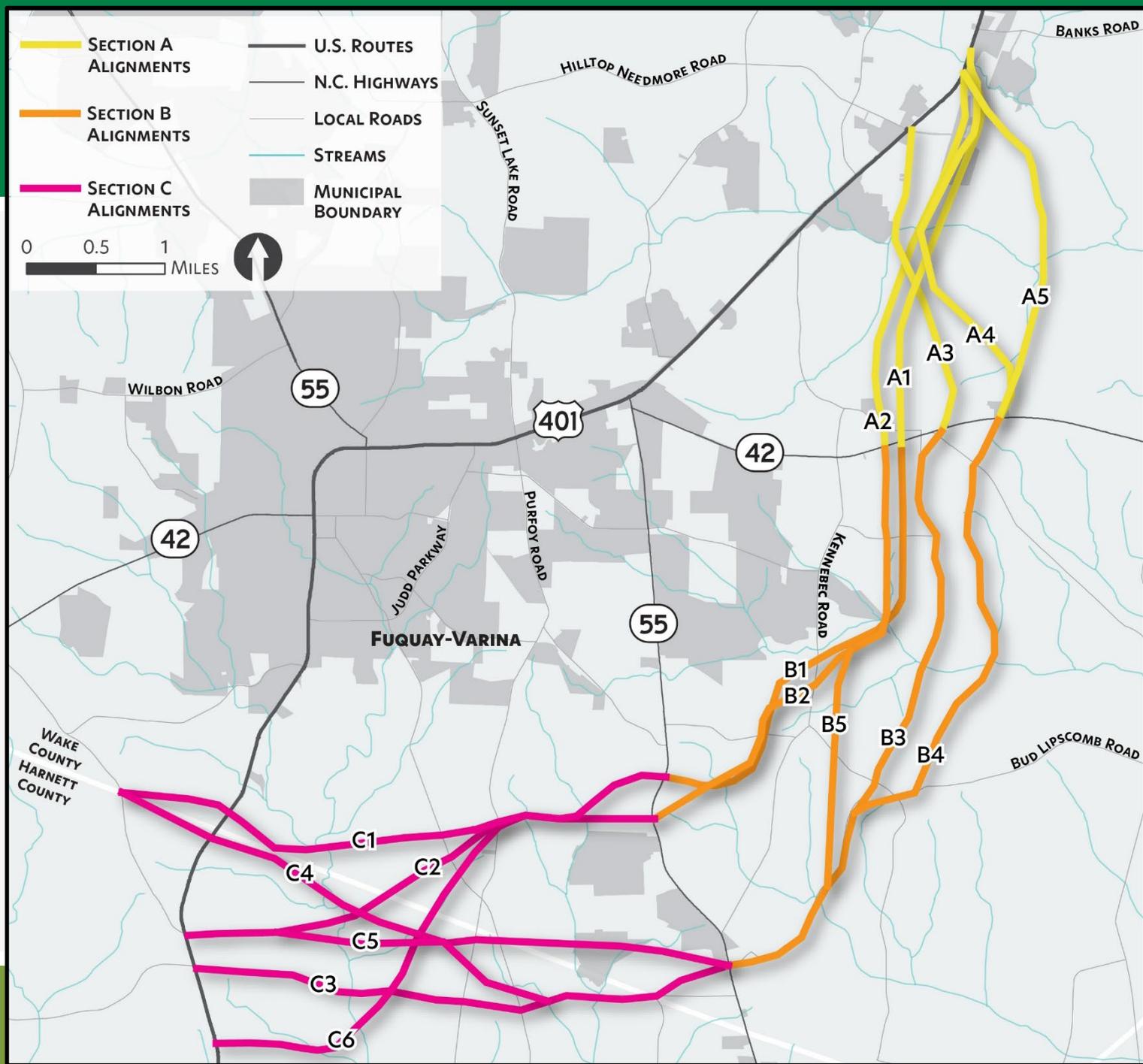


U.S. 401 Corridor Study Schedule



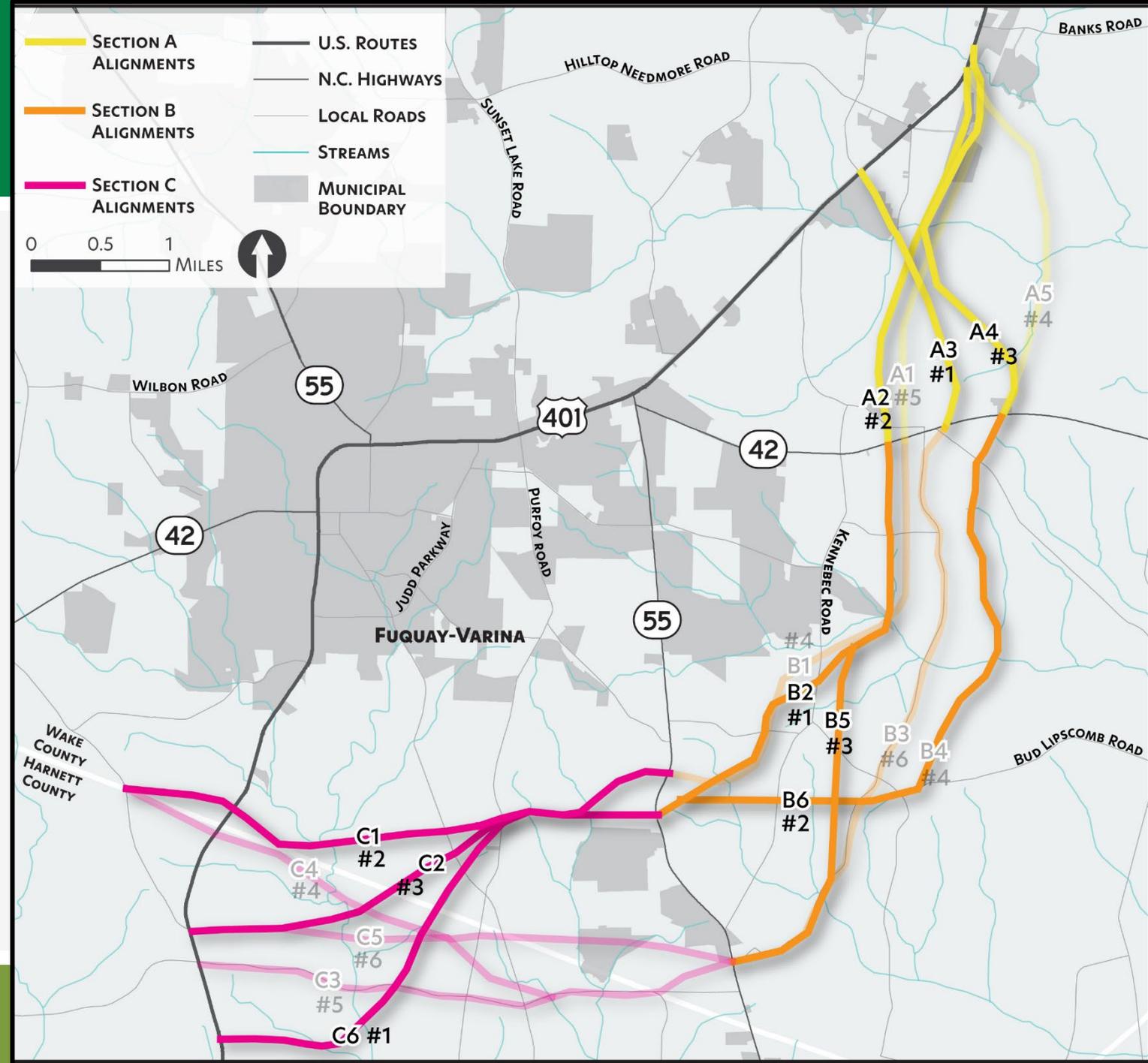
History

All Greenfield Alternatives



History

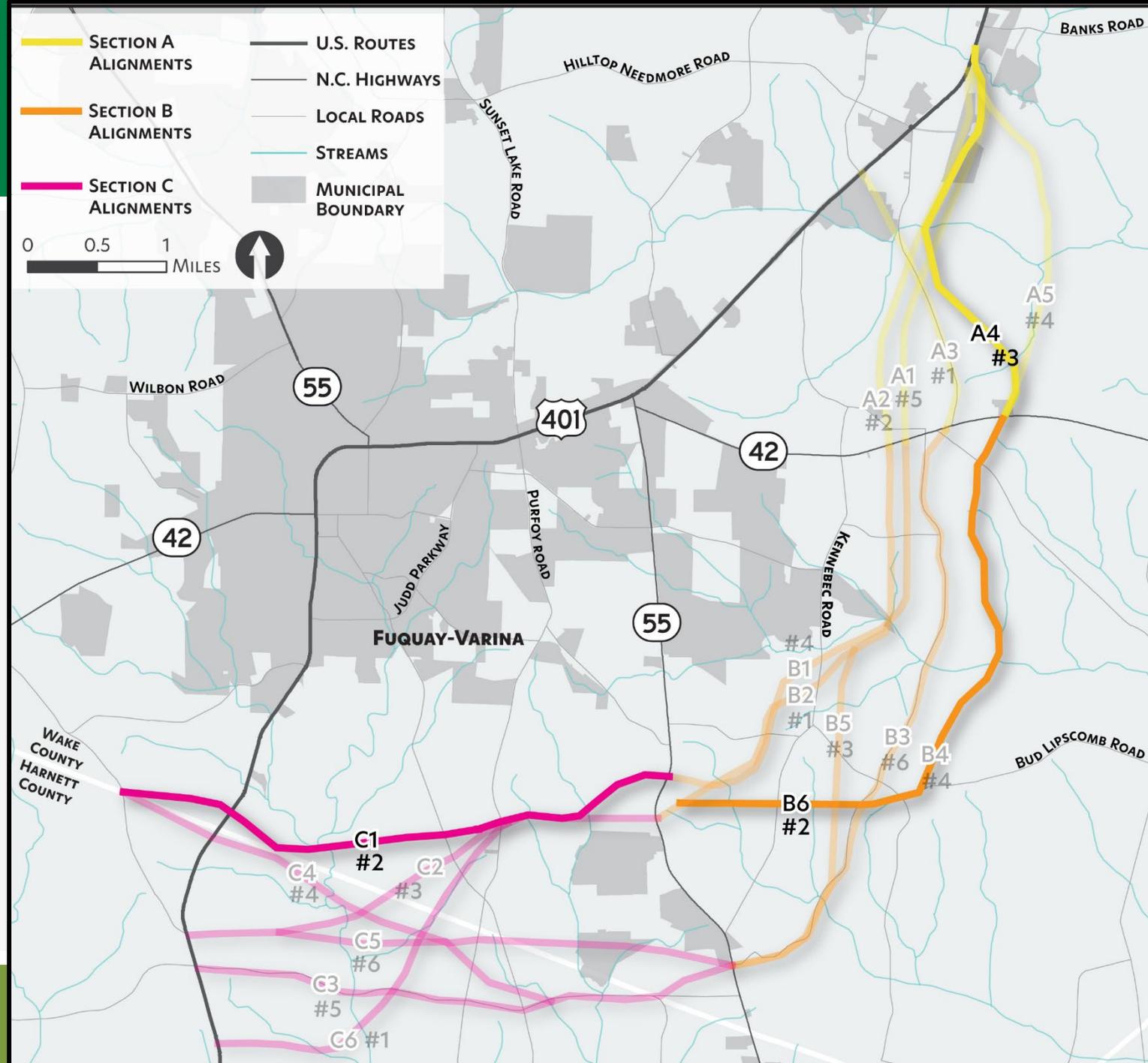
High Ranking Greenfield Alternatives



History

Combining A4, B6 and C1 to form **Alternative X**.

Advanced to further evaluation (modeling)

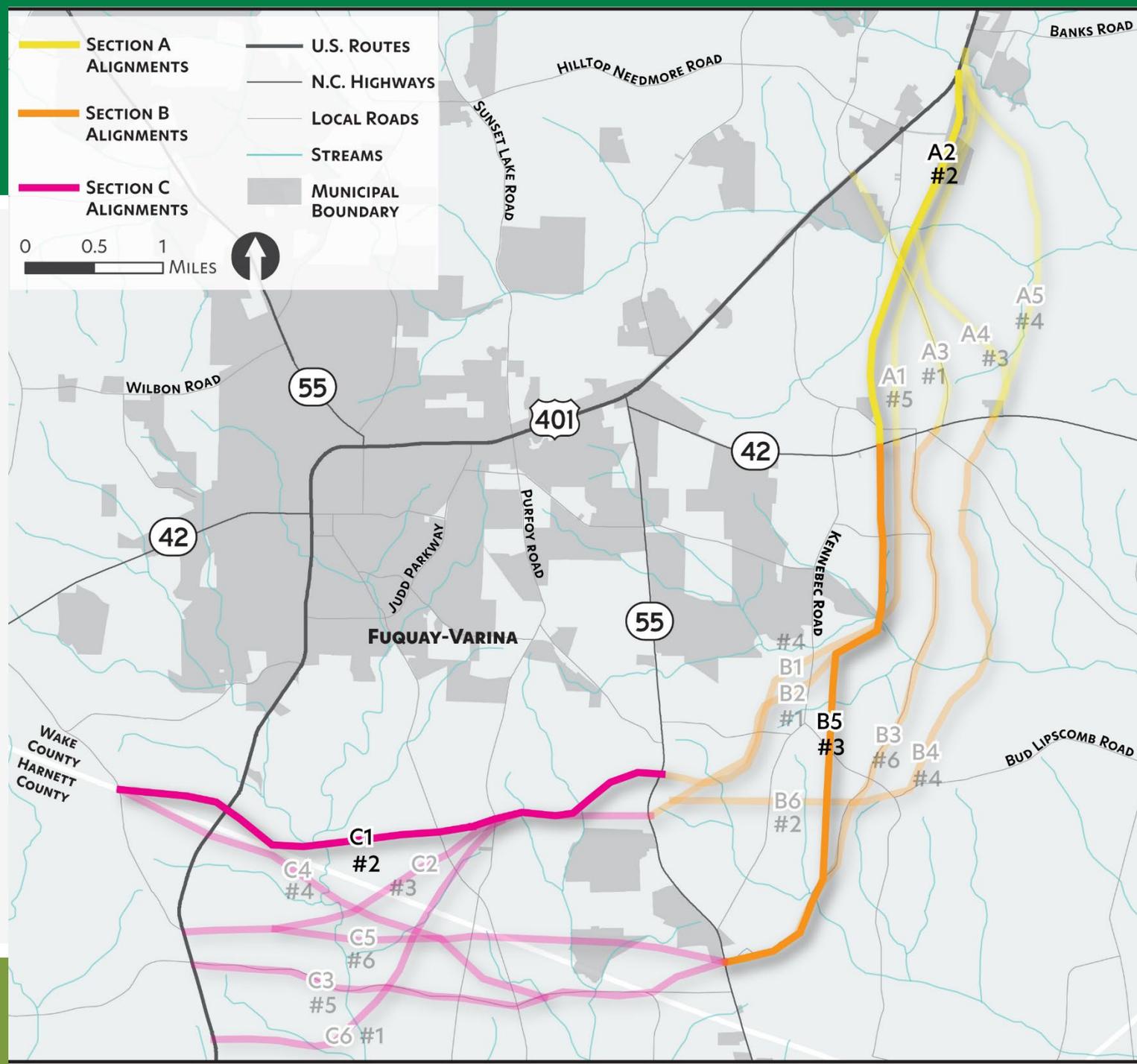


History

Combining A2 and B5 to form **Alternative Z**.

C1 remains as F-V Southern Parkway
NC 210 to be upgraded to connect to US 401.

Advanced to further evaluation (modeling)



CAMPO Board Resolution



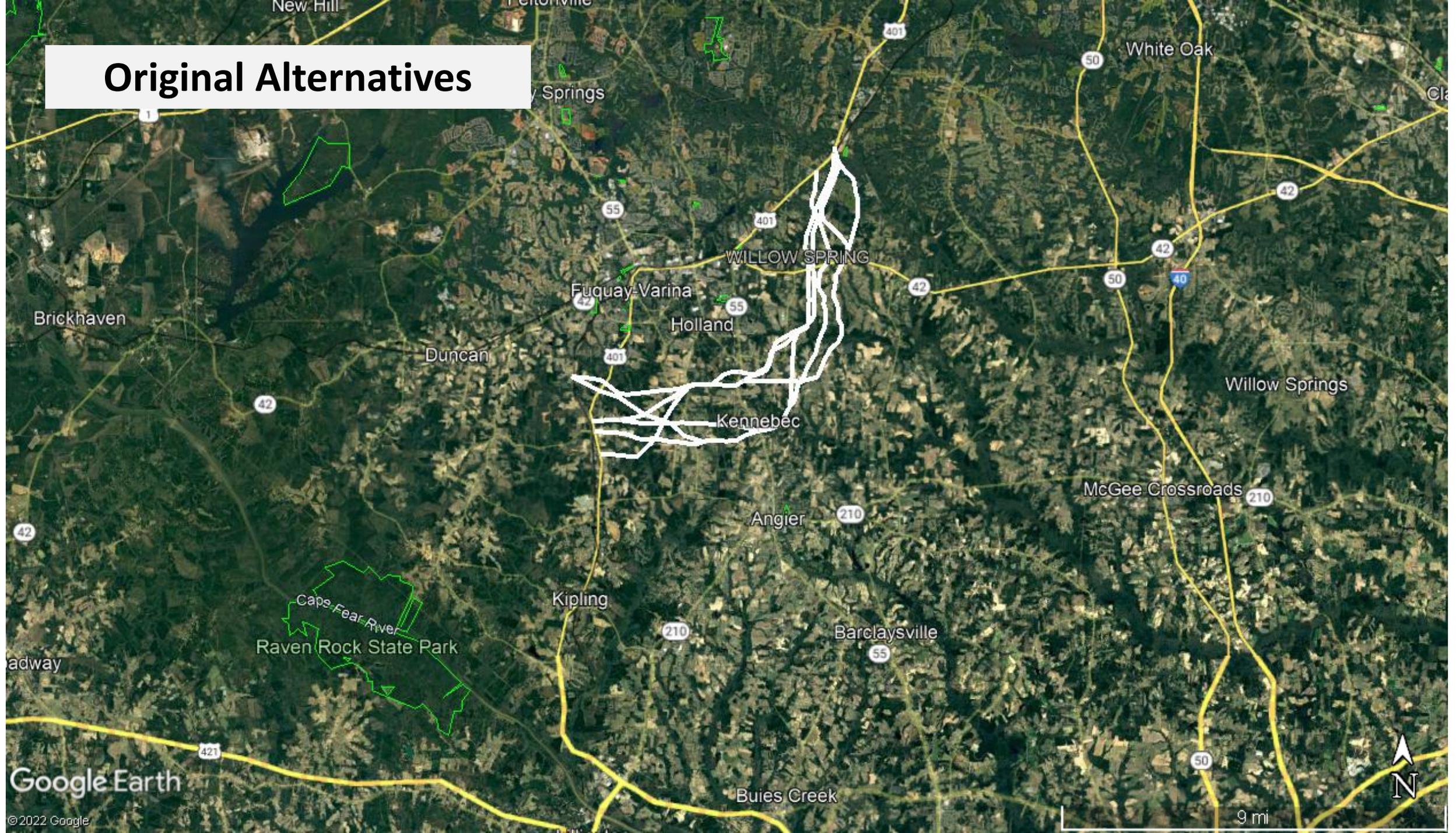
On Dec 8, CAMPO Executive Board directed CAMPO staff to CAMPO to review alternative ideas including an additional southeast alignment for the corridor and report back to the Board no later than their regular March (March 16, 2022) meeting.

At that time, the Board would have two options regarding the U.S. 401 corridor study. **Option 1** would be to allow the U.S. 401 corridor study to continue with its current scope and schedule. **Option 2** would be to revise the scope and schedule of the U.S. 401 corridor study based on staff's findings and include additional routes or recommendations in the study's findings.



New Alternatives

Original Alternatives



Alternatives X and Z



Z

X

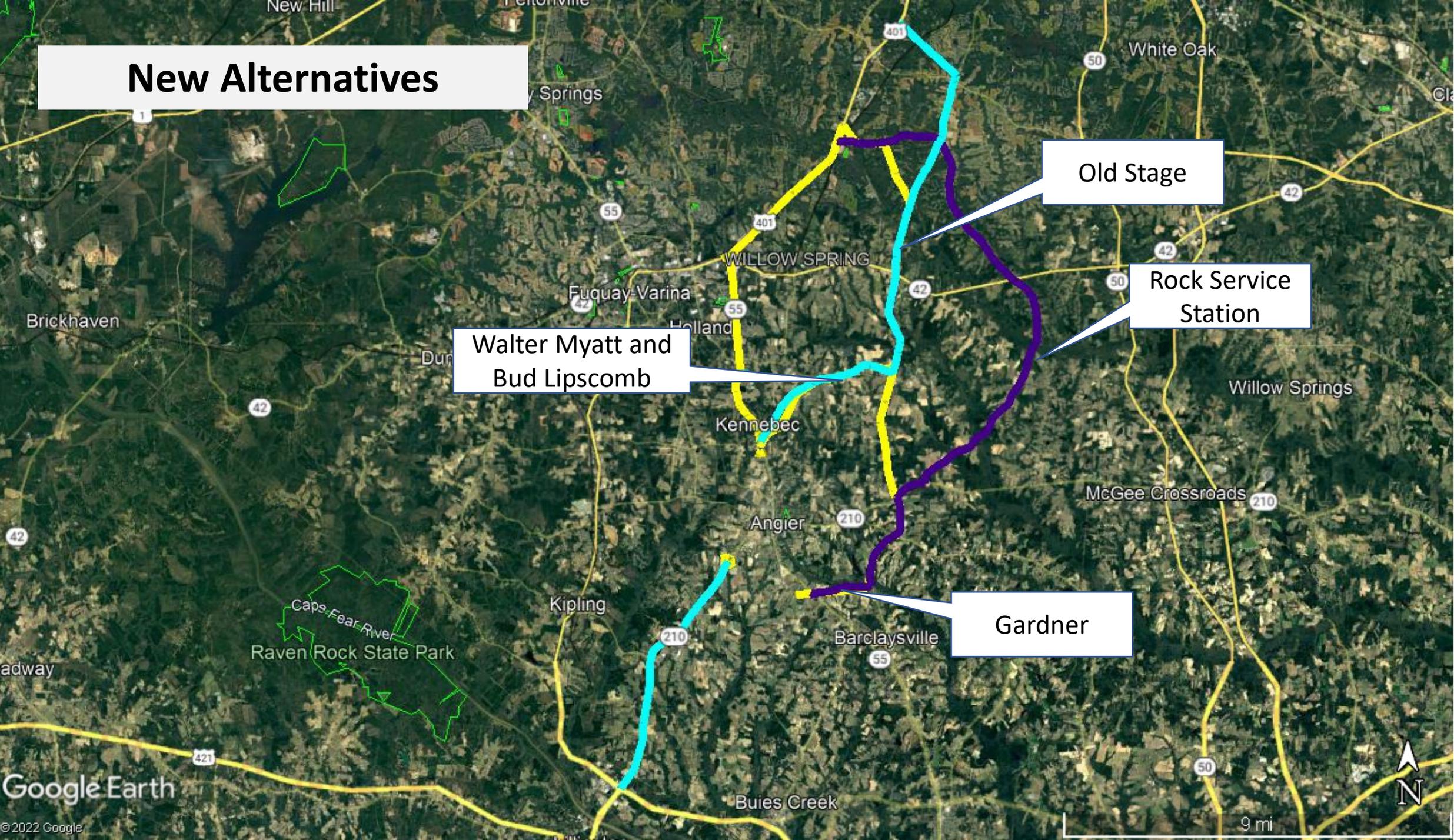
New Alternatives

Old Stage

Rock Service Station

Walter Myatt and Bud Lipscomb

Gardner



Model Volumes Comparison



Road	Start	End	NoBuild	Scenario X		Scenario Z		Scenario W		Scenario A		Scenario B		Scenario C		Scenario D	
US401	US401 Bypass	Banks Rd	54,600	58,700	108%	61,400	112%	56,000	103%	59,800	110%	53,000	97%	60,200	110%	55,100	101%
US401	US401 Bypass	Hilltop Needmore Ext	54,600	45,600	84%	42,400	78%	56,100	103%	50,600	93%	53,000	97%	50,700	93%	55,100	101%
US 401	Banks Rd	NC 540	55,300	58,100	105%	60,700	110%	56,200	102%	59,000	107%	53,400	97%	59,300	107%	53,900	97%
US 401	Lake Wheeler Rd	Eastern Pkwy	58,300	56,000	96%	50,700	87%	61,700	106%	56,300	97%	56,600	97%	56,700	97%	58,300	100%
US 401	NC 55	Sunset Lake	28,500	27,300	96%	27,400	96%	28,000	98%	28,100	99%	28,000	98%	28,300	99%	28,400	100%
US 401	Ennis St	Judd Pkwy	10,400	10,100	97%	10,300	99%	10,400	100%	10,200	98%	10,300	99%	10,400	100%	10,300	99%
US 401	Vance St	Judd Pkwy	16,100	16,000	99%	15,900	99%	16,000	99%	16,100	100%	16,000	99%	16,000	99%	16,100	100%
US 401	Judd Pkwy	Wagstaff Rd	27,100	26,800	99%	26,500	98%	26,800	99%	26,800	99%	26,800	99%	26,900	99%	27,000	100%
US 401	Rawls Church Rd	Chalybeate Springs	23,700	23,500	99%	22,200	94%	22,400	95%	23,000	97%	23,000	97%	22,900	97%	23,400	99%
US 401	Baptist Grove Rd	Lafayette Rd	17,600	17,500	99%	16,300	93%	16,400	93%	16,900	96%	17,000	97%	16,900	96%	17,200	98%
US 401	Matthews Rd	N Main St	27,200	27,300	100%	26,800	99%	26,300	97%	26,900	99%	26,900	99%	26,800	99%	27,500	101%
Rawls Church Rd	US 401	Purfoy Rd	8,900	9,000	101%	8,600	97%	8,000	90%	8,900	100%	9,000	101%	8,400	94%	8,800	99%
Purfoy Rd	Holland Rd	Southern Pkwy	13,900	12,800	92%	13,100	94%	13,300	96%	13,600	98%	13,600	98%	13,800	99%	13,800	99%
Old Stage Rd	NC 540	Banks Rd	39,400	38,300	97%	38,300	97%	39,000	99%	38,400	97%	48,600	123%	38,400	97%	43,200	110%
Old Stage Rd	Rock Service Station	Fanny Brown Rd	21,000	20,000	95%	19,500	93%	20,600	98%	20,600	98%	28,200	134%	20,600	98%	19,100	91%
Old Stage Rd	NC 42	Pantehr Lake Rd	11,500	12,600	110%	9,400	82%	11,100	97%	15,500	135%	15,800	137%	15,600	136%	10,400	90%
NC 55	NC 42	Old Honeycutt	22,100	21,200	96%	19,900	90%	29,900	135%	21,300	96%	21,300	96%	21,300	96%	21,900	99%
NC 42	Hilltop Rd	Old Stage Rd	24,000	27,100	113%	24,400	102%	23,400	98%	21,900	91%	23,200	97%	22,600	94%	22,500	94%
NC 42	NC 55	Kennebec Rd	19,200	17,500	91%	19,000	99%	17,600	92%	18,500	96%	18,700	97%	19,200	100%	18,400	96%
NC 210	Angier Bypass	Neills Creek Rd	8,800	8,800	100%	12,500	142%	12,000	136%	11,400	130%	11,400	130%	11,000	125%	10,200	116%
Kennebec Rd	Old Honeycutt	Eddie Howard	9,900	7,600	77%	8,000	81%	9,700	98%	8,900	90%	9,200	93%	9,100	92%	9,600	97%
Judd Pkwy SE	Academy St	Holland Rd	15,900	15,700	99%	15,500	97%	15,800	99%	15,700	99%	15,800	99%	15,800	99%	15,900	100%
Holland Rd	Purfoy Rd	NC 55	11,700	11,800	101%	12,000	103%	12,500	107%	11,800	101%	11,700	100%	11,800	101%	11,700	100%
Hilltop Rd Extn	US 401	Hilltop Rd	15,400	8,200	53%	10,400	68%	14,600	95%	13,300	86%	14,600	95%	13,100	85%	15,100	98%
Chalybeate Springs	Atkins Rd	Angier Bypass	18,600	18,300	98%	18,200	98%	17,700	95%	18,300	98%	18,400	99%	18,400	99%	18,600	100%
Banks Rd	US 401	Fanny Brown Rd	13,000	13,000	100%	12,900	99%	13,000	100%	12,700	98%	12,700	98%	12,700	98%	19,200	148%
Banks Rd	Fanny Brown Rd	Old Stage Rd	5,800	5,900	102%	6,100	105%	5,900	102%	5,700	98%	5,600	97%	5,700	98%	12,600	217%
Angier Rd	Judd Pkwy	Southern Pkwy	5,300	5,200	98%	5,100	96%	5,000	94%	5,200	98%	5,200	98%	5,200	98%	5,300	100%
Future US 401	US 401	NC 42	-	14,400	-	20,000	-	-	-	-	-	-	-	-	-	-	-
Future US 401	NC 42	Kennebec Rd	-	3,000	-	17,000	-	-	-	-	-	-	-	-	-	-	-
Future US 401	NC 55	Purfoy Rd	5,600	7,500	134%	3,000	54%	4,900	88%	4,900	88%	4,800	86%	5,600	100%	5,500	98%
Future US 401	Purfoy Rd	Angier Rd	2,700	3,100	115%	1,800	67%	2,600	96%	2,500	93%	2,500	93%	2,800	104%	2,700	100%
Future US 401	Angier Rd	US 401	2,600	2,900	112%	1,800	69%	2,500	96%	2,400	92%	2,400	92%	2,700	104%	2,600	100%
Eastern Parkway	US 401	Dwight R Rd	25,600	24,700	96%	19,900	78%	23,200	91%	24,000	94%	24,200	95%	24,000	94%	25,200	98%
Eastern Parkway	Old Honeycutt	Clayton Rd	11,800	13,900	118%	8,900	75%	6,100	52%	10,900	92%	10,800	92%	11,600	98%	11,500	97%
			686,100	689,400		685,900		684,700		680,100		691,700		684,500		696,100	

US 401 from Banks Rd to NC 55

	Alt	Speed	NCDOT Section Type	ROW
MTP 2050		45	6E + MUP	180'
This Study	W	55	6B + MUP	240'

Old Stage from Fanny Brown Rd to Bud Lipscomb Rd

	Alt	Speed	NCDOT Section Type	ROW
MTP 2050		45	4C	110'
This Study	A-C	55	6B + MUP	240'

NC 55 from US 401 to Angier Bypass

	Alt	Speed	NCDOT Section Type	ROW
MTP 2050		45	Varies	130'
This Study	W	55	4I + Sidewalk	200'

Walter Myatt Rd and Bud Lipscomb Rd

	Alt	Speed	NCDOT Section Type	ROW
MTP 2050			No Change	
This Study	A	55	4I	150'

Old Stage from Bud Lipscomb Rd to Black River

	Alt	Speed	NCDOT Section Type	ROW
MTP 2050		45	4C	110'
This Study	C	55	6B + MUP	240'

NC 210 from Angier Bypass to US 401

	Alt	Speed	NCDOT Section Type	ROW
MTP 2050		45	4C	110'
This Study	WZAC	55	4I	150'

Old Stage from Black River to Angier Bypass

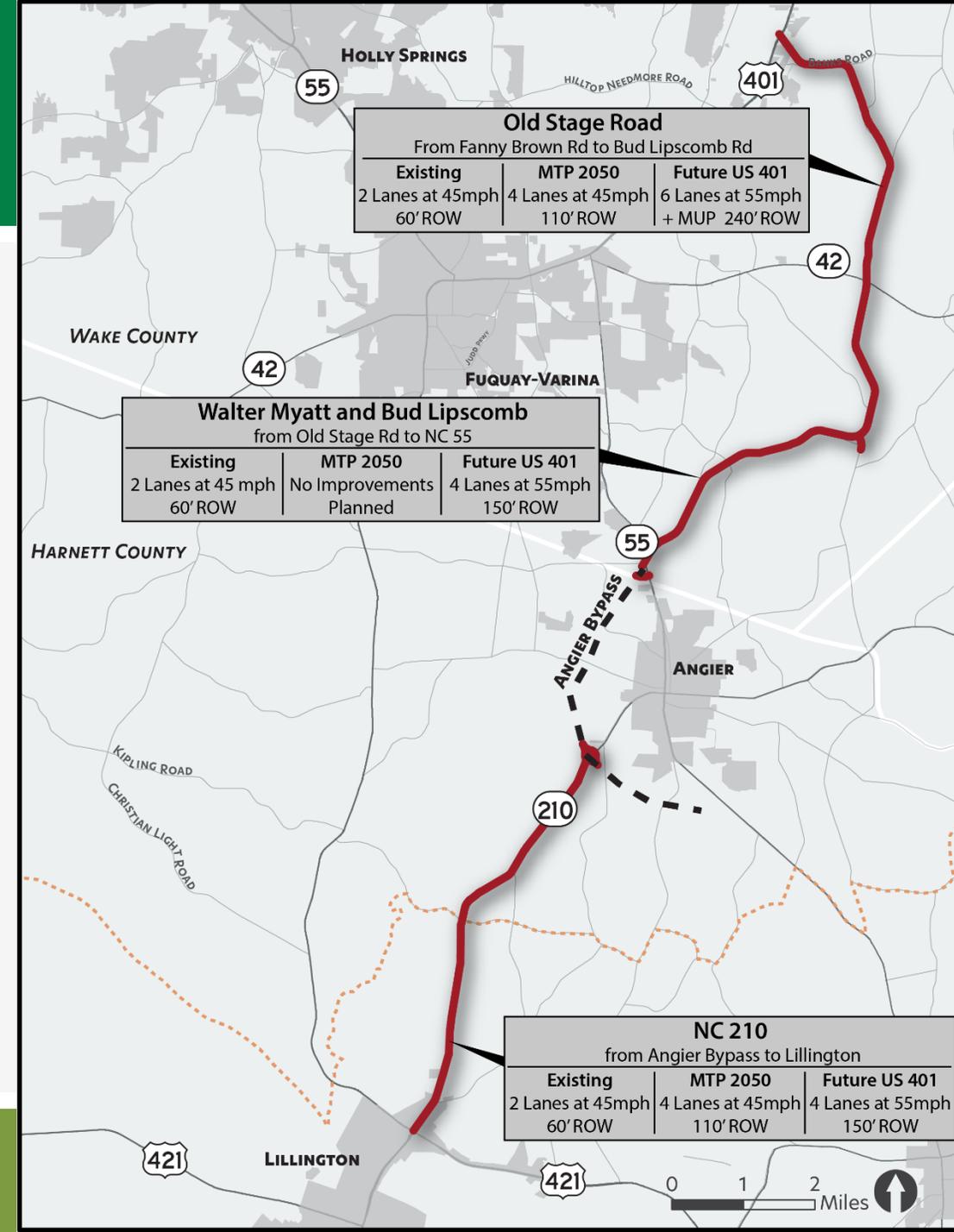
	Alt	Speed	NCDOT Section Type	ROW
MTP 2050		45	2B	60'
This Study	C	55	4I	150'



Evaluation of New Alternatives

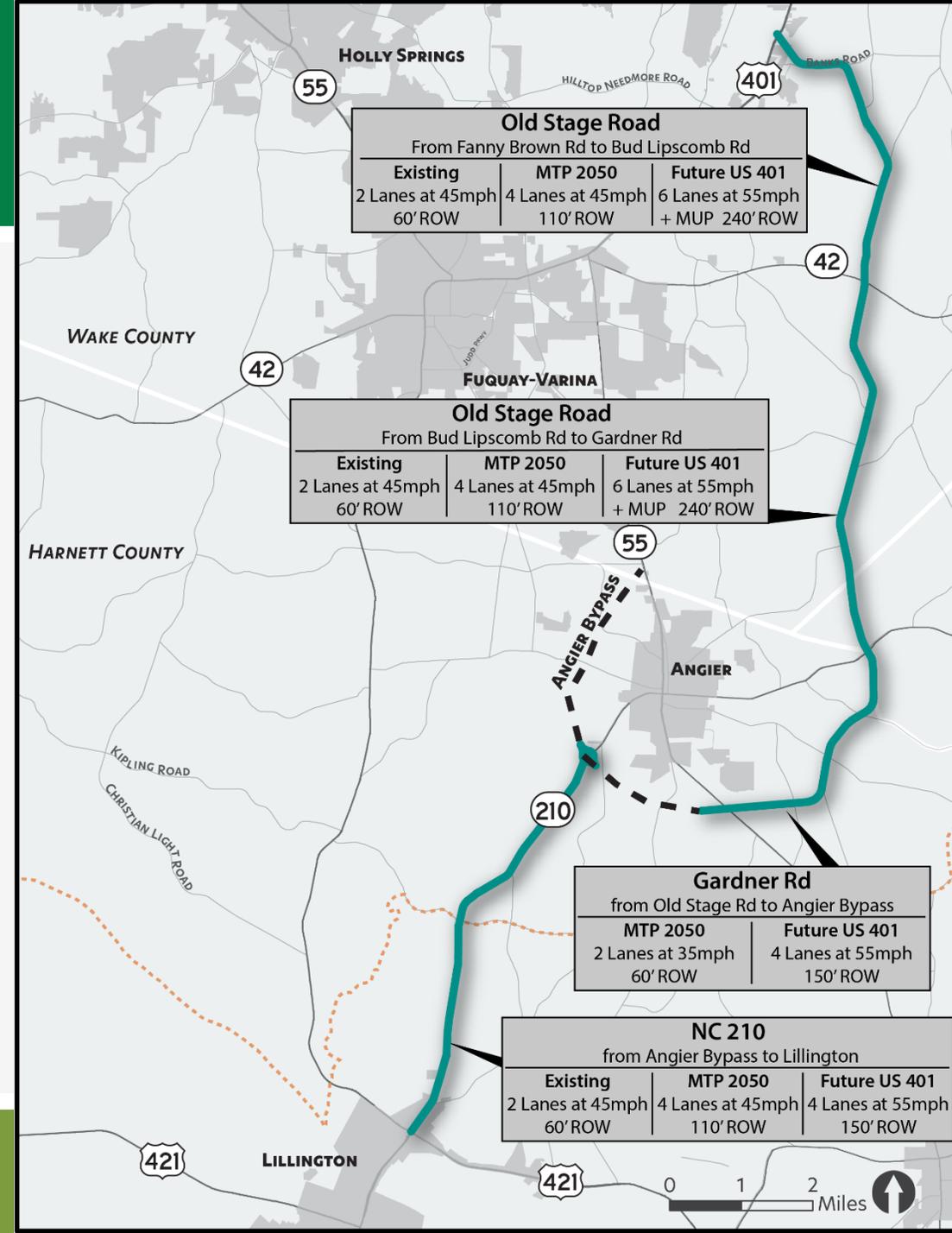
Alternative A

	MTP 2050	US 401	Additional impact due to US 401
Number of Parcels Impacted	364	704	340
Estimated ROW Cost	\$47.7 M	\$95.4 M	\$47.7 M
Agricultural ROW	82 acres	221 acres	139 acres
VADs Impacted	4	10	6
Landmarks Impacted	7	12	5
Acres of Wetland Impacted	3.5 acres	12.7 acres	9.2 acres



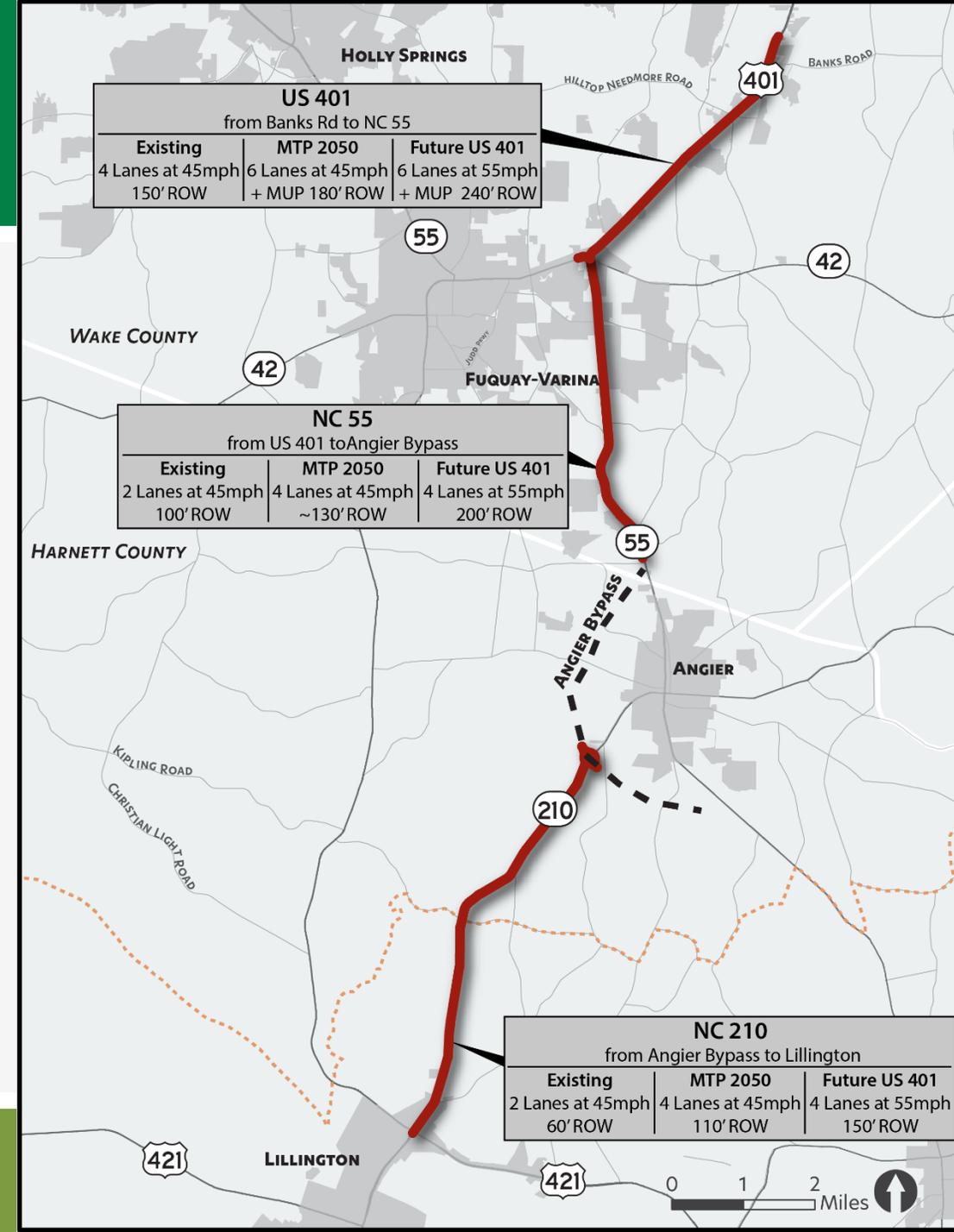
Alternative C

	MTP 2050	US 401	Additional impact due to US 401
Number of Parcels Impacted	546	782	236
Estimated ROW Cost	\$37.8 M	\$90.1 M	\$53.1 M
Agricultural ROW	146 acres	287 acres	141 acres
VADs Impacted	6	7	1
Landmarks Impacted	7	10	3
Acres of Wetland Impacted	8.5 acres	24.9 acres	16.35 acres



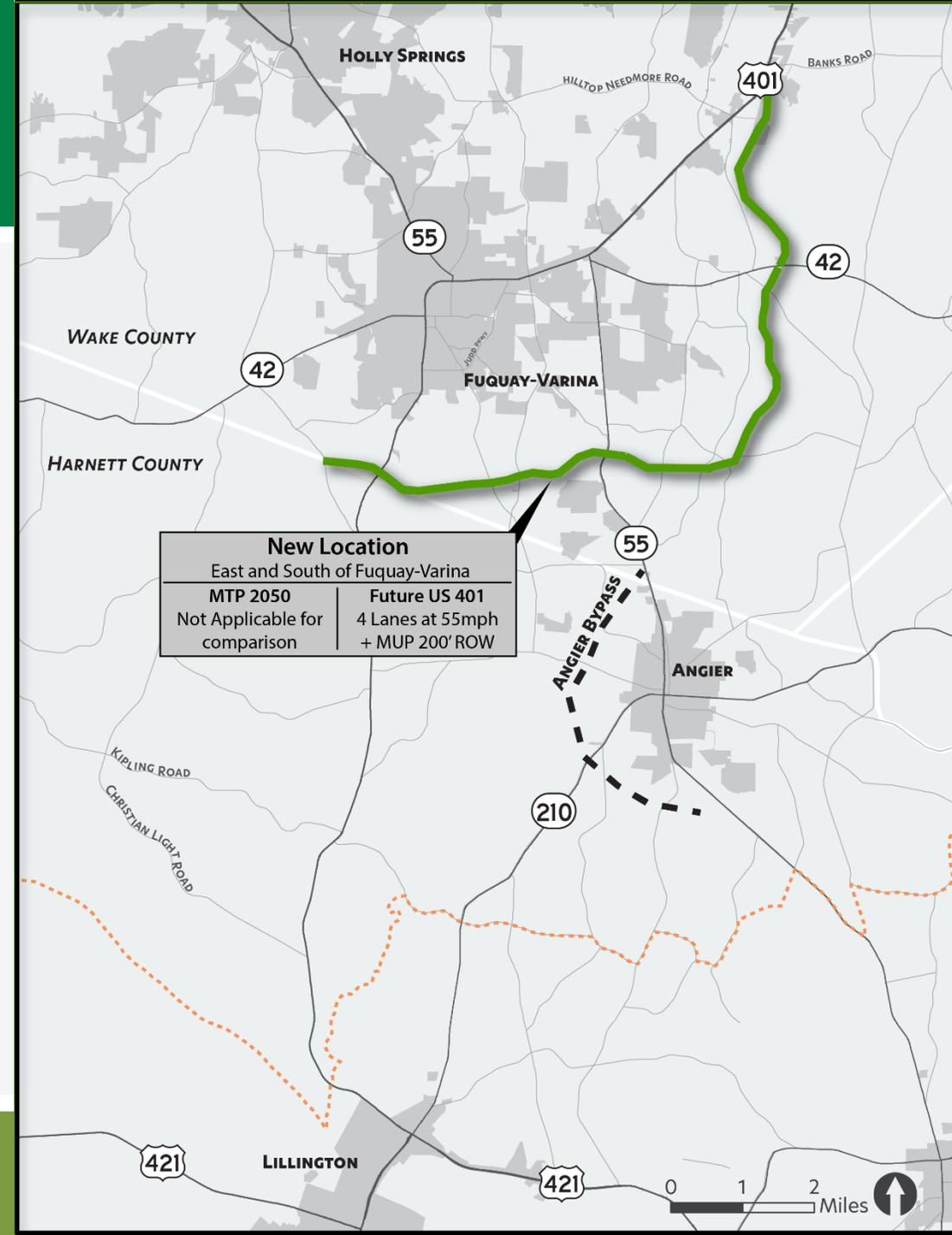
Alternative W

	MTP 2050	US 401	Additional impact due to US 401
Number of Parcels Impacted	540	610	70
Estimated ROW Cost	\$94.4 M	\$157.1 M	\$62.6 M
Agricultural ROW	85 acres	131 acres	46 acres
VADs Impacted	2	2	0
Landmarks Impacted	14	14	0
Acres of Wetland Impacted	7.2 acres	13.8 acres	6.6 acres



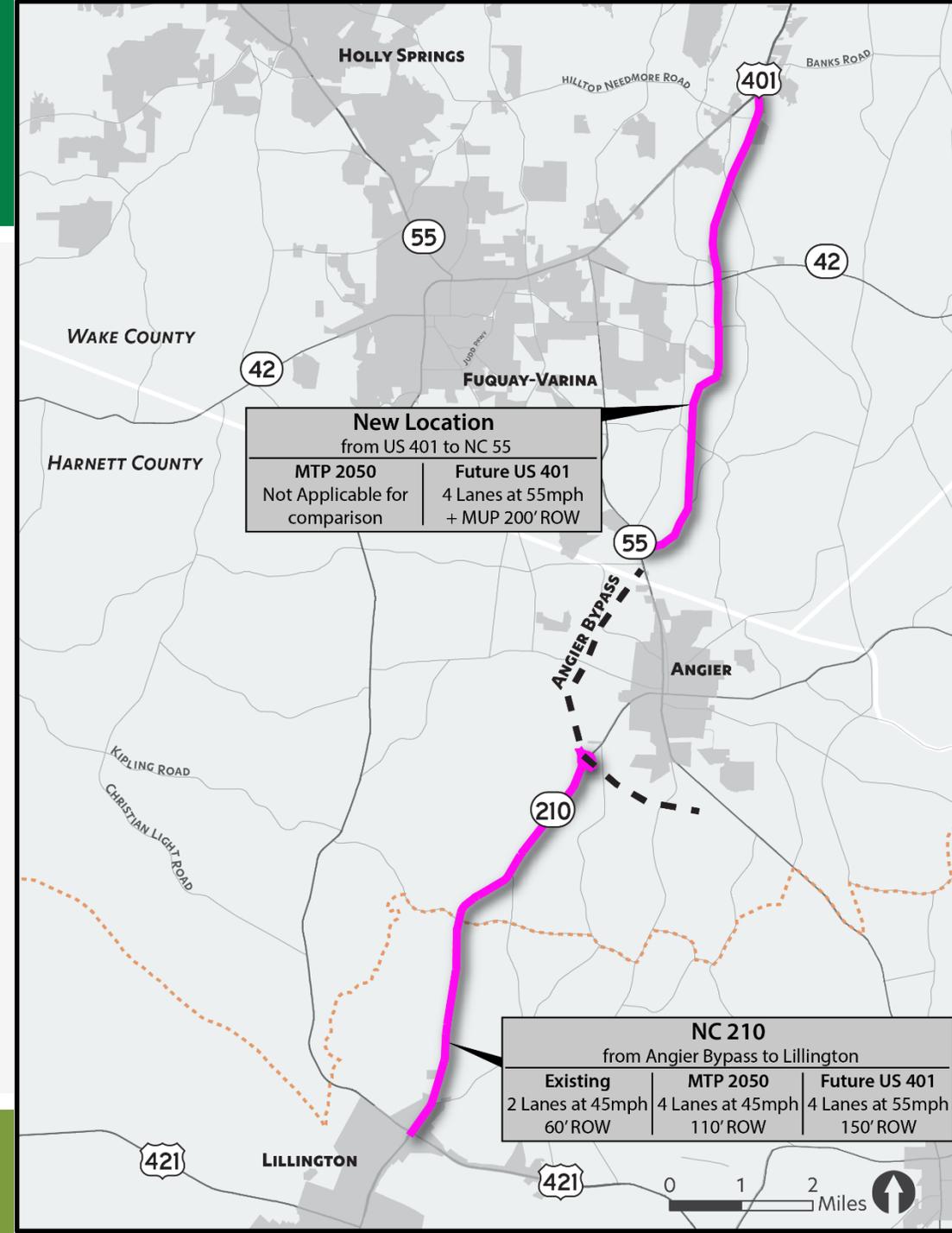
Alternative X

	MTP 2050	US 401	Additional impact due to US 401
Number of Parcels Impacted	-	115	115
Estimated ROW Cost	-	\$16.7 M	\$16.7 M
Agricultural ROW	-	150 acres	150 acres
VADs Impacted	-	5	5
Landmarks Impacted	-	2	2
Acres of Wetland Impacted	-	14.6 acres	14.6 acres



Alternative Z

	MTP 2050	US 401	Additional impact due to US 401
Number of Parcels Impacted	231	399	168
Estimated ROW Cost	\$18.9 M	\$38.7 M	\$19.9 M
Agricultural ROW	64 acres	154 acres	91 acres
VADs Impacted	2	9	7
Landmarks Impacted	3	3	0
Acres of Wetland Impacted	2.0 acres	10.6 acres	8.6 acres



Scoring Parameters

- **Property impact =**
 - 6x No. of Parcels with Full residential take +
 - 2x No. of Parcels with Partial residential take +
 - 3x No. of Parcels with Full non-residential take +
 - 1x No. of Parcels with Partial non-residential take
- **Agricultural impacts =**
 - 1x Total Acres under Agriculture +
 - 20x No. of VADs bisected by alignment +
 - 4x No. of VADs marginally impacted by alignment
- **Environmental impact =**
 - 10x No. of Schools, Worship houses, Cemeteries, Historic Bldgs. +
 - 1x Acres of floodplain +
 - 1x Acres of Wetland
- **Project cost =**
 - 2x Length of Ground Segment +
 - 24x Length of Bridge Segment +
 - 1x ROW acquisition cost (in Million \$)



Scoring Matrix – Base Data

Impacts	Coefficient	Residential		Non-resi (incl Ag)		ROW impact score	Agri-culture takes	VAD		Agri-cultural impact score	Historic/ Schools/ Cemetery/ Worship	Impacts to Environment		Environmental Impact Score	Project Cost			Project Cost Score
		Full	Partial	Full	Partial			Total Acres under Agriculture	# Bisect through			# Skirt by	# of each along the alignment		Acres of Floodplain	Acres of Wetland	Length of ground segment	
Alignment	Coefficient	6	2	3	1		1	20	4		10	1	1		2	24	1	
A	Banks/OS/WM/NC210	191	34	83	32	1495	139	2	4	195	5	6.9	9.2	66	5.7	0.7	60.9	90
C	Banks/OS/210	170	-12	91	-13	1256	141	0	1	145	3	9.1	16.4	55	0.0	1.0	53.1	77
W	401 / 55 / 210	49	1	59	-39	434	46	0	0	46	0	2.1	6.6	9	0.0	0.2	62.6	68
X	A4 B6 C1	11	16	13	75	212	150	0	5	170	2	7.4	14.6	42	14.0	1.0	16.7	68
Z	A2 B5 NC210	31	37	39	48	425	91	0	7	119	0	2.7	8.5	11	8.5	0.4	19.9	45



Relative Weights and Scoring



Parameter	Public Engagement Relative Weights	CTT Survey Relative Weights
Agriculture	1.47	0.83
Property	1.00	1.00
Environment	0.73	1.18
Cost	0.27	1.26

Final Score =
42.6% of PE Score
+ 57.4% of CTT Score

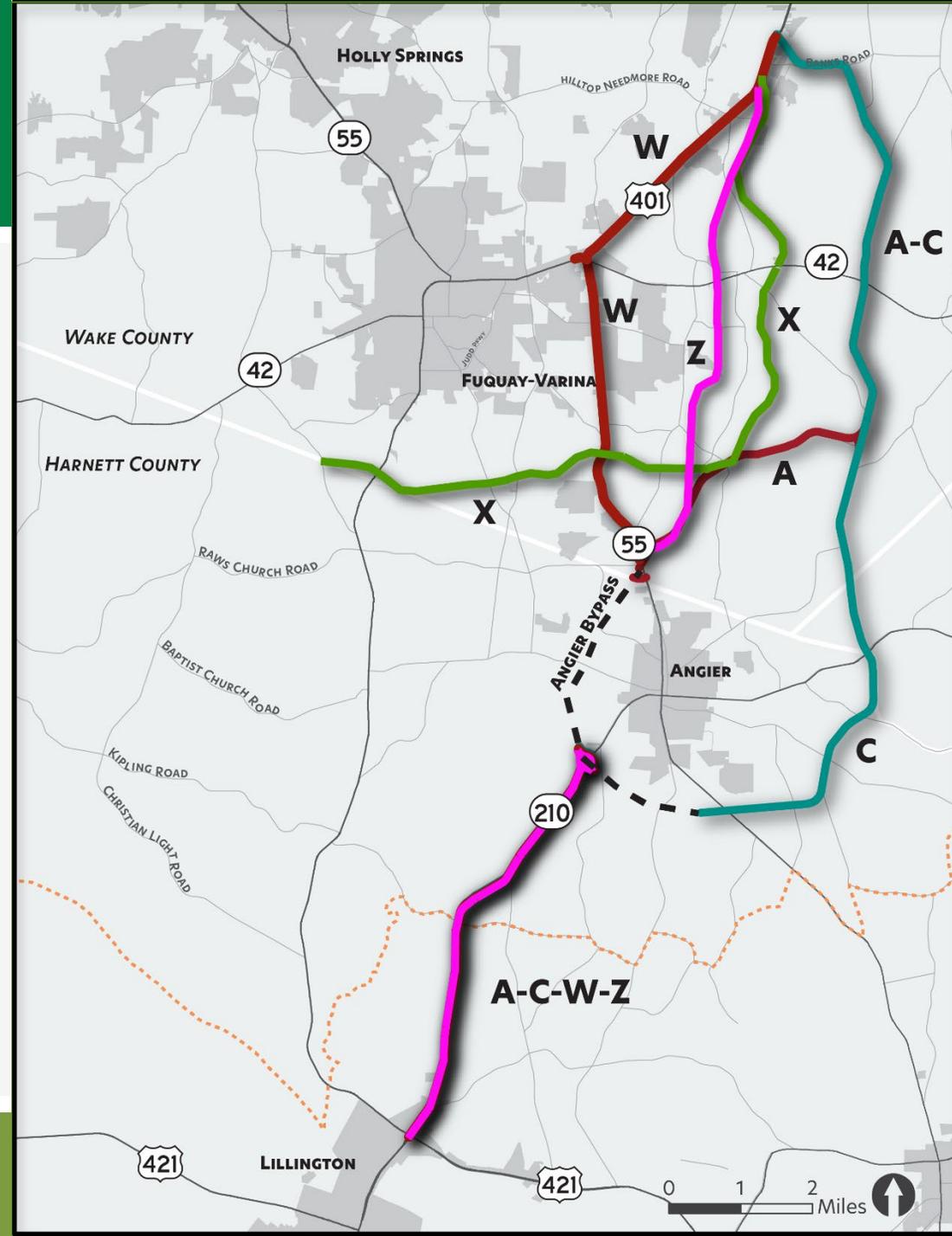
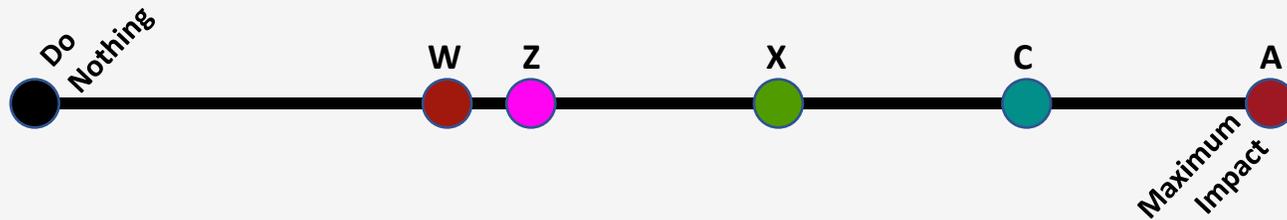
Lower Scores =
Lower Impact =
More Favorable =
Higher Rank



Scoring Parameters

	Alignment	Public 42.60%	CTT 57.40%	Combined Weight 100%	Rankings
W	401 / 55 / 210	0.27	0.37	0.33	1
Z	A2 B5 NC210	0.41	0.38	0.40	2
X	A4 B6 C1	0.60	0.60	0.60	3
C	Banks/OS/210	0.80	0.83	0.82	4
A	Banks/OS/WM/210	1.00	1.00	1.00	5

Relative magnitude of impacts among alignments



Next Steps

Further Study will include:

- Additional traffic modeling and analysis
- The location and type of intersections and/or interchanges
- Conceptual cross sections and phasing of the preferred project alignment

Recommendation(s) will result in a scope modification for this study.

Questions or
Discussion?

TCC Recommendation



Revise the scope and schedule of the U.S. 401 corridor study based on staff's findings and include the additional route of alignment W (401/55/210), along with the original alignment X (A4 B6 C1) and partially original alignment Z (A2/B5/210) in the study's findings.

