DCHC

DURHAM-CHAPEL HILL-CARRBORO METROPOLITAN PLANNING ORGANIZATION

DURHAM – CHAPEL HILL-CARRBORO METROPOLITAN PLANNING ORGANIZATION TECHNICAL COORDINATING COMMITTEE (TCC)

AGENDA

September 22, 2010
9:00 a.m.

City Council Committee Room
2nd floor Durham City Hall

1. **Preliminaries**

2. **Adjustments to the Agenda**

3. **Public Comments**

ACTION ITEMS

4. Approval of August 25, 2010 TCC Meeting Minutes (Attachment 4)

A copy of the August 25, 2010 minutes is enclosed as Attachment 4.

TCC Action: Approve minutes of the August 25, 2010 TCC meeting.

5. Draft 2011-2020 STIP (Attachments 5, 5A, 5B, 5C)

Felix Nwoko, LPA Staff
Andy Henry, LPA Staff

The North Carolina Department of Transportation (NCDOT) released the draft Fiscal Year 2011-2020 State Transportation Improvement Program (STIP) in early August. At their August and September meetings, the TAC received a copy of the FY 2011-2020 STIP for the DCHC MPO, several documents comparing the draft STIP with the FY2009-2015 STIP, the One-on-One meeting notes for the FY09-15 STIP process, and a schedule for approving the MPO's Metropolitan Transportation Improvement Program (MTIP).

The schedule for the FY 11-20 MTIP shows the release of the MTIP for public comment in the fall 2010 and the approval of the MTIP in April 2011. One-on-One meetings among MPO and NCDOT staff and members are being scheduled for October 2010. Attachment 6 provides a comparison of the FY2009-2015 and FY2011-2010 STIPs, and Attachments 6A and 6B are One-on-One meeting agendas for Division 5 and 7, respectively, including discussion points and text.

TCC Action: Review comparison document and One-on-One meeting agenda and recommend changes and additions.

6. FFY 2010 JARC and New Freedom Program Appropriation
(Attachment 6, 6A, 6B)
Maricia Brown, LPA Staff

The MPO receives an annual allocation of Job Access Reverse Commute (JARC) and New Freedom (NF) funds from FTA. JARC is targeted for improving transportation for low income populations and NF is targeted at persons with disabilities. The MPO plans to hold a 2010 Call of Projects and attachment 6 is a memo

The tables in Attachment 6A summarize the funds available for the JARC and NF programs. The MPO has received appropriations FFY 2010. The MPO's remaining JARC appropriations are $72,671 from FFY 2009, $94,283 from a DATA project that was cancelled and an additional $195,374 from FFY 2010. The total of $362,328 will be offered for use in the MPO's 2010 Call-for-projects.

The MPO's remaining NFP appropriations that have not already been committed to a project are $10,769 from FFY 2009 and an additional $87,757 from FFY 2010. The total of $98,526 will be offered for use in the MPO's 2010 Call-for-projects.

Attachment 6B is the 4th quarter expenditures report.

TCC Action: Review the proposed 2010 Call-for-Projects schedule and recommend TAC approval.

7. MTIP Amendment #17
(Attachment 7)
Andy Henry, LPA Staff

The North Carolina Department of Transportation (NCDOT) has amended the FY2009-2015 State Transportation Improvement Program (STIP) to include three new projects in the DCHC MPO: interstate maintenance in Division 5; interstate maintenance in Division 7; and, interstate preservation in Durham County (specifically I-85). The DCHC MPO must amend the FY2009-2015 Metropolitan Transportation Improvement Program (MTIP) to include these three projects so the various contracts can be let.

Attachment 7 is a Resolution to amend the FY2009-2015 MTIP, and includes a detailed table of the three projects.

TCC Action: Recommend that TAC amend FY2009-2015 MTIP to include the three new projects.

8. Triangle Regional Transit Program – Transitional Analysis
(Attachments 8)
Patrick McDonough, Triangle Transit

The Triangle Transit has released a draft Transitional Analysis that presents quantitative evaluation data on the eighteen passenger rail corridors being considered in the Triangle. The report identifies two passenger rail corridors for further evaluation in the Alternatives Analysis phase: UNC-Chapel Hill hospitals to Alston Ave. in Durham; and, northeast Cary to the Northeast Regional Center in Raleigh. The contents of this draft report are currently being presented to the public for their input through a series of workshops through the region.

Attachment 8 is a copy of the Transitional Analysis, including an Executive Summary and appendices of a discussion on corridors to Hillsborough and Zebulon. Additional and updated information is available at www.ourtransitfuture.com.

TCC Action: Review the Transitional Analysis and provide comments to TAC.

REPORTS FROM STAFF:

9. **Reports from Staff**
   (Attachment 9)
   Felix Nwoko, LPA Staff

   TCC Action: Receive Report from staff

10. **Report from the Chair**
    Mark Ahrendsen, TCC Chair

    TCC Action: Receive Report from TCC Chair

11. **NCDOT Report**
    (Attachment 11)
    Wally Bowman, Division 5 – NCDOT
    Mike Mills, Division 7 – NCDOT

INFORMATIONAL ITEMS

12. **Adopted DCHC MPO North Carolina Mobility Fund Letter**
    (Attachment 12)

Adjourn

Next meeting: October 25, 2010

TECHNICAL COORDINATING COMMITTEE

August 25, 2010

MINUTES OF MEETING

The Technical Coordinating Committee met on August 25, 2010 at 9:00 a.m. in the Council Committee Room on the second floor of Durham City Hall. The following attended:

*Mark Ahrendsen	City of Durham/Transportation (TCC Chair)
*Julie Bollinger	NCDOT - TPB
*David Bonk	Town of Chapel Hill (TCC Vice-Chair)
*Jeff Brubaker	Town of Carrboro
*Stanley Buff (Alternate)	NCDOT – Division 7
*Bonnie Estes	City/County Planning
*Melissa Guilbeau	Chatham County
*Andy Henry	City of Durham/Transportation
*John Hodges-Copple	Triangle J COG
*Joey Hopkins (Alternate)	NCDOT – Division 5
*Tom King	Town of Hillsborough
*Karen Lincoln	Orange County
*Brian Litchfield	Town of Chapel Hill
*Ray Magyar	UNC – Transportation
*Patrick McDonough	Triangle Transit
*Kumar Neppalli	Town of Chapel Hill
*Felix Nwoko	City of Durham/Transportation
*Pierre Osei-Owusu (Alternate)	City of Durham/DATA
*Meg Scully	Durham County
*Ed Venable	City of Durham/Engineering
Maricia Brown	City of Durham/Transportation
Leta Huntsinger	City of Durham/Transportation
Dale McKeel	City of Durham/Transportation
Ryan Mickles	Town of Chapel Hill
Brian Rhodes	City of Durham/Transportation
Jill Stark	FHWA
Mila Vega	Orange County
Emily Yasukochi	Town of Chapel Hill

*Voting Member
^Temporary Non-Voting Member
Quorum Count: 19 of 22 Voting Members Present

According to the TCC Bylaws, when a member misses three meetings in a row he/she is not considered a voting member on the third consecutive missed meeting. Voting privileges are reinstated on the second consecutive meeting that he/she attends.

Mark Ahrendsen, TCC Chair, called the meeting to order at 9:05 a.m. The Alternate Voting Members were identified and are indicated above.

PRELIMINARIES:

Adjustments to the Agenda

Mark Ahrendsen stated a handout was provided at the beginning of the meeting which will be discussed later in the meeting.

Public Comments

There were no public comments.

ACTION ITEMS:

Approval of July 28, 2010 TCC Meeting Minutes (Attachment 4)

A motion was made by Karen Lincoln and seconded by Andy Henry to approve the July 28, 2010 TCC Meeting Minutes. The motion carried unanimously.

Request to Transfer FY 2011 STPDA Funds to FTA (Attachments 5 and 5A)

Maricia Brown provided an introduction for the Request to Transfer FY 2011 STPDA Funds to FTA, along with the attachments.

A motion was made by David Bonk and seconded by Karen Lincoln to recommend that TAC approve the resolution requesting that the FY 2011 STP-DA funds for transit projects be transferred to FTA with one amendment to the letter changing the FFY 10 to FFY 11. The motion carried unanimously.

Draft 2011-2020 STIP (Attachments 6, 6A, 6B. 6C. 6D. 6E. 6F, 6G, and 6H)

Andy Henry provided an introduction for the Draft 2011-2020 STIP, along with a review of the attachments. Patrick McDonough asked whether transit projects are included in the draft STIP. Andy Henry will check on the transit projects.

After additional discussion of the draft TIP, Mark Ahrendsen stated the one-on-one meetings with NCDOT will be held after the October 13, 2010 TAC meeting, sometime between October 14 and October 31, 2010.

North Carolina Mobility Fund (Attachments 7 and 7A)

Dale McKeel provided an introduction for the North Carolina Mobility Fund, along with a draft comment letter.

Patrick McDonough stated the project selection criteria in the letter are outstanding and have clarity. John Hodges-Copple suggested adding a sentence near the end of the letter: "Other insights may be gained by reviewing the criteria being used for recent federal grant programs, such as TIGER II, and others associated with both DOT, HUD, EPA Sustainable Communities Partnership, and the North Carolina Sustainable Task Force. " Jill Stark stated that FHWA is looking for more performance-based projects that would be more competitive.

A motion was made by John Hodges-Copple and seconded by Patrick McDonough to recommend to the TAC for their consideration the draft letter providing comments on the selection process for the North Carolina Mobility Fund, as amended. The motion carried unanimously.

NC54 Corridor Study – Update (Attachment 8)

Leta Huntsinger provided an update on the NC54 Corridor Study. Ms. Huntsinger stated the TAC approved the release of the NC54 Corridor Study Report for review. Attachment 8 is a schedule that shows the review process. One comment from the TAC was that Orange County be included in the review process.

Patrick McDonough stated there is a very strong possibility of regional rail at the hub. Leta Huntsinger will meet with Patrick McDonough to discuss timing and incorporation into the presentations.

Mark Ahrendsen asked when the comments on the draft report will be given to the consultant. Leta Huntsinger stated it will be in November after the Town of Chapel Hill comments on the report.

David Bonk stated the Town of Chapel Hill's comments might not be approved until the December town council meeting. The comments would be ready by the December 15, 2010 TAC meeting. This could cause the schedule to slip.

Ms. Huntsinger stated she will convene the steering committee to discuss some of the comments and possibly adjust the schedule.

Regional Transit Planning – Update (No attachments)

Patrick McDonough stated the first round of meetings is complete and the comments are available. The comments and information regarding future meetings can be found at www.ourtransitfuture.com. The second round will have the corridor performance data. At the Joint MPO meeting there will be a presentation. There will be a conference call tomorrow with the Finance Directors from the counties to assess the tax revenue.

Patrick McDonough stated they are waiting on clarification regarding House Bill 148 in regard to supplanting local contributions for transit.

Mark Ahrendsen asked whehter the Boards of County Commissioners will be adopting County or Regional plans. Patrick McDonough stated that he has requested this information as well.

REPORTS FROM STAFF:

Reports from Staff (Attachment 10)

Felix Nwoko stated the Subcommittee met on August 24, 2010 to discuss the special projects. The following is an update on projects. The Non-Motorized Model Development project will be complete at the end of August; Land Use Model Development – the TAZ level is done and it will be used for the 2040 LRTP; the next level is Parcel; GIS – As of September 30, Phase I is complete and Phase II is to be done in-house by LPA staff; ITS – completed in April 2010; Community VIZ – This project has not

started; LPA staff has requested data from the partners by September 8, 2010; and Commercial Vehicle/Freight Survey – This project is almost complete.

John Hodges-Copple requested that Community VIZ and ITS projects be added to the monthly report.

Report from the Chair

Mark Ahrendsen stated there will be an East End Connector citizen workshop on September 20, 2010 at Orange Grove Missionary Baptist Church from 4 p.m. to 7 p.m. There will be a Joint MPO meeting on September 29, 2010 at 8:30 a.m. at the RDU Airport. The main topic will be a report on the alternativse analysis, and there will also be a presentation by NCRR on their rail passenger study.

Several MPO member agencies submitted TIGER II applications prior to the August 24 deadline. Tom King stated that the Town of Hillsborough did not submit a TIGER II application because they couldn't pull the cost benefit analysis together in time. He also stated that NCDOT is optimistic that Hillsborough could possibly get a grant through the high speed rail project.

The East End Connector scored well in the loop prioritization process, and N. Roxboro Road was second overall because it had low costs.

John Hodges-Copple provided an update on the PRISM project. Mr. Hodges-Copple stated the application has been submitted. The scoring system was very quantitative. If staff would like, Mr. Hodges-Copple will provide an update to the TAC and the community.

NCDOT Report (Attachment 12)

Joey Hopkins, NCDOT Division 5 Engineer, provided an update on projects. Mr. Hopkins stated the Hillandale Road widening project is now under contract. There are issues with the resurfacing projects in Durham. There have been unforeseen issues with sink holes, utility lines, and lack of existing pavement depth. There are also issues with the Durham County Judicial Building construction. NCDOT has been working with the City on road diets to provide space for cyclists.

Mr. Hopkins stated there will be a neighborhood meeting on the Hopson Road project on Wednesday night. There will be training for Federal Funding on August 31, 2010. There will a "Pedal to the Metal" Bike Fest at University Mall on Saturday, August 28.

Stanley Buff, NCDOT Division 7 Engineer provided an update on projects. Mr. Buff stated the resident engineer with NCDOT is having problems with the contractor on the South Columbia Street project. David Bonk stated the contractor tore up the sidewalk and it needs to be replaced. Stanley Buff will check on the status again and get back to Mr. Bonk.

The resident engineer also stated the NC54 resurfacing project will be another three to four weeks before it is complete from the US15-501 Bridge to the Durham County line.

Dale McKeel stated that Orange County received a letter from NCDOT Bike/Ped Division about the feasibility study for a pedestrian bridge on Orange Grove Road. Stanley Buff will check on it and get back to Karen Lincoln. Karen Lincoln stated it is a high priority for Orange County.

Jeff Brubaker asked for more information about the Seawell School Road safety improvement near the rail road crossing project. Stanley Buff will check and will send the list hopefully next month.

John Hodges-Copple stated the new ozone standard was scheduled to be released by the end of the month but now it has been delayed until the end of October. Mr. Hodges-Copple has asked the DENR-DAQ staff about how this will affect the schedule. The census has released its proposed criteria for the definition of urban areas for 2010 census data. Comments need to be reviewed by the November 22, 2010. John Hodges-Copple will provide a summary by the next TCC meeting.

INFORMATIONAL ITEMS:

NCDOT Guidelines for Control of Access Fence (Attachment 13)

THE NCDOT Guidelines for Control of Access Fence are attached for review.

The Real Problem with the North Carolina Loop Program (Attachment 14)

The Real Problem with the North Carolina Loop Program is attached for review.

6

North Carolina Loop Program Priorities (Attachment 15)

The North Carolina Loop Program Priorities is attached for review.

Adjournment

There being no further business before the Technical Coordinating Committee, the meeting was adjourned at 10:58 a.m.

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Comparison of FY2009-2015 STIP and FY2011-2020 STIP

Highway, Bridge, Bicycle and Pedestrian Projects

New Projects

				Total Cost (thousands)			Year Begin Construction			$ Unfunded		$ Funded		
Division	Project #	Route	Description	2009-2015	2011-2020	Difference	2009-2015	2011-2020	Delay	2009-2015	2011-2020	2009-2015	2011-2020	Difference
7	I-3306	I-40	I-85 in Orange Co. to US 15-501	47,000	47,000	-	post year	2019	new	47,000	23,500	-	23,500	23,500
7	I-0305	I-85	I-40 at Hillsborough to Durham County Line.	210,782	210,782	-	post year	2020	new	210,782	152,285	-	58,497	58,497
5	U-4716	SR 1978 (Hopson Rd.)/SR 1980 (Church St.)	Construct a grade separation, extend Church St. and close Church St. crossing	6,500	31,016	24,516	post year	2011	new	6,500	7,020	-	20,441	20,441
7	U-5304	US 15-501 (Bypass)	S. Columbia St. to Ephesus Ch. Rd.; bicycle, pedestrian and transit accommodations	-	5,150	5,150	post year	2019	new	-	-	-	5,150	5,150
7	B-4962	Eno River	Replace Bridge No. 46	6,200	6,600	400	2015	2018	new	2,850	-	3,350	6,600	3,250
7	B-5348	Phil's Creek	Replace Bridge No. 85	-	1,063	1,063	post year	2019	new	-	-	-	1,063	1,063
5, 8	FS-1008B	NC 751 (Feasibility Study)	US 64 in Chatham to north of Fayetteville Rd in Durham; widen to multi-lanes	n/a	n/a	n/a	n/a	n/a	new	n/a	n/a	n/a	n/a	n/a
5	FS-1005C	NC 54 (Feasibility Study)	I-40 to NC 55; widen to multi-lanes	n/a	n/a	n/a	n/a	n/a	new	n/a	n/a	n/a	n/a	n/a
5	C-5175	DATA	Operating assistance for new fixed route	-	2,438	2,438	n/a	2013	new	-	-	-	2,438	2,438
7	C-5177	MLK Jr. (shared pathway)	Homestead Rd. to Piney Mtn. Rd.	-	906	906	n/a	2013	new	-	-	-	906	906
5	C-5178	Campus Walk, Morreene Rd. & Lasalle St.	Construct sidewalks	-	336	336	n/a	2014	new	-	-	-	336	336
7	C-5179	North Estes Dr.	Construct pathway, sidewalk & bike lanes	-	1,182	1,182	n/a	2015	new	-	-	-	1,182	1,182
5	C-5182	Hope Valley Rd.	MLK Pkway and US 15-501 Bus.; sidewalks and bike lanes	-	1,386	1,386	n/a	2016	new	-	-	-	1,386	1,386
5	C-5183	Cameron Blvd., Erwin Rd., Duke Univ. Rd., Alston Ave., Carpenter Fletcher and Sedwick Rd.	Construct sidewalks	-	2,127	2,127	n/a	2016	new	-	-	-	2,127	2,127
7	C-5184	Riverwalk Trail	Construct paved trail along Eno River (Phase III)	-	621	621	n/a	2018	new	-	-	-	621	621
7	W-5318	NC 86	NC 57 to Caswell Co.; geometric and shoulder improvements	-	4,654	4,654	n/a	2015	new	-	-	-	4,654	4,654
7	C-5181	Jones Creek Greenway	Bridge and connector trail	-	300	300	n/a	2015	new	-	-	-	300	300
						45,079								**125,851**

Change in Cost and Schedule

Division	Project #	Route	Description	Total Cost (thousands) 2009-2015	2011-2020	Difference	Year Begin Construction 2009-2015	2011-2020	Delay	$ Unfunded 2009-2015	2011-2020	$ Funded 2009-2015	2011-2020	Difference
5, 7	EB-4707	SR 2220 (Old Chapel Hill Rd.)-SR 1838 (Old Durham Rd.)/US 15-501	Durham Co. to Orange Co. bicycle improvements	3,828	5,450	1,622	2009	2011	2	-	-	3,828	4,000	172
5	U-4763B	Triangle Parkway	I-540 to I-40	190,610	190,568	(42)	2009	2011	2	-	-	190,610	190,568	(42)
7	U-3306	SR 1733/Weaver Dairy Rd.	NC 86 to Erwin Rd.	15,995	17,125	1,130	2010	2011	1	-	-	15,995	17,125	1,130
7	U-2803	SR 1919/Smith Level	Rock Haven Road to Bridge NO. 88	5,400	7,450	2,050	2011	2013	2	-	-	5,400	7,450	2,050
7	U-0624	NC 86/S. Columbia St.	SR 1906 (Purefoy Rd.) to SR 1902 (Manning Drive)	6,660	7,310	650	2009	2012	3	-	-	6,660	7,310	650
5	U-0071	East End Connector	NC 147 to north of NC 98	155,401	172,733	17,332	2013	2014	1	33,250	-	122,151	172,733	50,582
5	U-3308	NC 55/Alston Ave.	NC 147 to US 70 Bus-NC 98	23,321	28,428	5,107	2011	2014	3	-	-	23,321	28,428	5,107
7	U-3808	Elizabeth Brady Road Extension	South of US 70 Bus to north of US 70 Bypass at St. Mary's Rd.	33,994	-	(33,994)	2012	Deleted	n/a	-	-	33,994	-	(33,994)
5	B-3638	US 70 Bus/Main St.	Campus Drive Replace Bridge	975	1,300	325	2010	2012	2	-	-	975	1,300	325
5	B-4943	SR 1616	Sandy Creek Replace Bridge	415	477	62	2013	2020	7	-	-	415	477	62
5	C-4928	Morreene Rd., Neal Rd./Erwin Rd.	Construct bike lanes and sidewalks	556	1,441	885	2009	2011	2	-	-	556	1,441	885
5	W-5110	NC 55 and Lawson St.	Construct left turn lanes on NC 55	975	975	-	2011	2012	1	0	0	975	975	-
7	EL-4994	Orange County	Bolin Creek Greenway	738	1476	738	2008	2011	3	0	0	738	1,476	738
5	U-4724	Cornwallis Rd., S. Roxboro Rd./University Dr.	Bike and pedestrian feature	2,270	1,970	(300)	2010	2011	1	-	-	2,270	1,970	(300)
				Project Cost Increase		**29,601**				**Project Funding Increase**				**61,701**
				Net Cost Change		**(4,435)**				**Net Funding Change**				**27,365**

Funded Projects Currently Under Construction or In Progress

Division	Project #	Route	Description	Total Cost (thousands) 2009-2015	2011-2020	Difference	Construction 2011-2020
5	U-3309	SR 2028/T.W. Alexander Dr.	Cornwallis Rd to Miami Blvd.	13,961	14,933	972	under construction
5	U-3804	SR 1321/Hillandale Rd.	I-85 to Carver Street	11,191	11,941	750	under construction
5	U-4009	SR 1126/Service Rd.	Parallel to US 15-501 at Garrett Rd.	5,683	5,683	-	under construction
5	U-4011	SR 1959/S. Miami Blvd.	South of SR 2112 (Methodist St.) to north of SR 1960 (Bethesda Avenue)	6,477	8,265	1,788	under construction
5	U-4012	US 15-501	N. of Mt. Moriah Rd. to S. of Garrett Rd.	15,609	15,609	-	under construction
5	U-4026	SR 1613/Davis Dr.	Morrisville-Carpenter Rd. to NC 54	38,706	39,063	357	under construction
7	U-4704	Chapel Hill	Chapel Hill-Carrboro Computerized Traffic Signal System	5,000	5,450	450	under construction
5,7,8	U-4726	Urban Area Bike/Ped Allocation	DCHC MPO planning area	7,419	11,941	4,522	in progress
7	B-4216	SR 1002 - Strouds Creek	Replace bridge No. 66	1,125	1,054	(71)	under construction
5	B-3450	SR 1116	New Hope Creek, Replace Bridge; Sandy Creek, Replace Bridge	4,986	4,986	-	under construction
8	EB-2921F	American Tobacco Rail Trail	Durham Co. to Wake Co.	2,392	2,392	-	under construction
7	C-4932A	Orange County	125 Space Park and Ride Lot.	275	275	-	under construction
5	C-4702	Durham County	10 Replacement buses	3,000	3,000	-	in progress
7	EL-4828	Morgan Creek Greenway West	Smith Level Rd. to University Lake	600	535	(65)	in progress
7	EL-4601	Morgan Creek Greenway East	US 15-501 Culbeth Rd. to Smith Level Rd	872	1,290	418	in progress
5	EB-3606	Orange County	Bicycle route mapping and signing	50	50	-	in progress
5, 7	C-4924	TJCOG	Develop flexible work schedule for employees and organizations in Triangle ozone non-attainment area for 3 yrs.	300	5,626	5,326	in progress
5	C-4929	Bicycle Parking Program	Install bike racks at various locations	48	48	-	in progress

Note: Funding increase for some ongoing programs might be based on increase in plan years (FY09-15 TIP = 7 years; FY11-20 TIP = 10 years)

UnFunded Projects (No change in unfunded status)

Division	Project #	Route	Description	Total Cost 2009-2015	Total Cost 2011-2020	Difference	Year begin Const.
5	I-4743	I-85	US 70 to SR 1632 (Red Mill Rd.)	n/a	n/a	n/a	post year
7	R-3438	Hillsborough Western Bypass	US 70 to NC 57	7,450	7,450	-	post year
7	R-2825	SR 1009/S. Churton St.	I-40 to Eno River	19,300	22,750	3,450	post year
7	U-2805	SR 1777 (Homestead Rd.)/SR 1834 (High School Rd.)	Widen to multi-lanes	10,600	10,600	-	post year
7	U-2909	SR 1780 (Estes Dr.)/SR 1772 (Greensboro St.)	Widen to multi-lanes	7,600	6,855	(745)	post year
5	U-2405	MLK Jr. Parkway/NC 55	Construct interchange	25,800	29,850	4,050	post year
5,7	U-2807	US 15-501 SR 1010 (Franklin St.)/US 15-501 bypass in Durham	Major corridor upgrade	123,000	156,000	33,000	post year
5	U-4720	US 70	Lynn Rd. to the proposed Northern Durham Parkway	n/a	n/a	n/a	post year
5	U-4721	Proposed Northern Durham Parkway	I-540 to Roxboro Rd.	n/a	n/a	n/a	post year
5	U-4722	US 501 (Roxboro Rd.)	US 501 bypass (Duke St.) to SR 1640 (Goodwin Rd.)	n/a	n/a	n/a	post year
5	U-2831B	Riddle Rd./SR 1951 (So-Hi Dr.)	Briggs Ave extension	10,685	10,685	-	post year
7	U-3436	SR 1148 (Eno Mountain Rd.) and SR 1192 (Mayo St.) at SR 1006 (Orange	Realign intersection and make safety improvements	2,350	2,350	-	post year
7	EL-4995	Orange County	Dry Creek Greenway	700	700	-	post year
7, 8	EB-5110	Bolin Creek Greenway (Chapel Hill)	NC 86 to Umstead Park	-	-	-	Feasibility Study
7	EB-4710	Seawell School Rd.	Homestead to Estes. Bicycle improvements	2,000	-	(2,000)	Deleted

Division 5 One-on-One Meeting
FY 2011-2020 Transportation Improvement Program

Agenda

1. **2011-2020 TIP Items for Discussion**
   a. **General Funding and Design Issues**
   b. **Major Project Schedules and Funding**
   c. **Project Study and Project Management Requests**

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1. 2011-2020 TIP Items for Discussion

The DCHC MPO has reviewed the 2011-2020 Draft STIP and developed the following list of issues for discussion. The MPO is developing the 2011-2020 MTIP which will be approved in late spring 2011.

a. General Funding and Design Issues

1. **Need additional funding for transportation**
   The DCHC MPO has only one new highway project and three relatively minor bicycle, pedestrian and transit related projects in Division 5 funded in the draft FY 2011-2020 STIP. These are few projects given continued growth in population and employment, and the fact that the draft FY 2011-2020 STIP assumes five additional planning years (from 2015 through 2020). Recently, the North Carolina General Assembly approved the Mobility Fund and the NCDOT has begun consideration of the evaluation criteria for selecting projects for this fund. The DCHC MPO believes that it is important that the criteria favor large projects in urban areas.

2. **Prioritize funding for bicycle, pedestrian, and transit projects**
   The DCHC MPO strongly supports multi-modal transportation. Many of the MPO's top priorities are bicycle, pedestrian, and transit projects (see Regional Priority List). In the past, the traditional funding sources for these projects have disproportionately been the target for rescissions. In addition to the traditional funding sources for these projects, the DCHC MPO would like these projects to receive funds traditionally used for highway projects such as STP funds. Bicycle/pedestrian projects are typically far less costly than highway projects. With so little revenue available for new projects, it would be a good opportunity to use limited resources on a greater number of these less expensive bicycle/pedestrian projects.

3. **All highway projects**

NCDOT has changed its approach to highway design from accommodating motor vehicles only to providing for a multi-modal transportation system. However, on roadway projects that include widening and multi-modal facilities, the project descriptions in the TIP continue to say "widen to multi-lanes" with no mention of multi-modal facilities. The DCHC MPO continues to believe that the TIP would better communicate to the public and to NCDOT departments the actual project scope if the project descriptions said "widen to multi-lanes and include bicycle, pedestrian, and transit facilities" where appropriate.

b. Major Project Schedules and Funding

4. **U-0071 (East End Connector)**
   The DCHC MPO is concerned about the continued schedule delay for U-0071. The first year for construction was delayed from 2013 to 2014 between the FY2009-2015 STIP and draft FY2011-2020 STIP, which follows a two year delay between the previous set of STIPs. This project is Durham's highest priority and would greatly improve safety, congestion, and access through Durham. The DCHC MPO requests that construction for this project not be delayed and that it be fully funded in the final STIP.

5. **U-3808 (NC 55/Alston Avenue, NC 147 to Holloway St.)**
   The DCHC MPO is concerned about the design of U-3808, and appreciates the willingness of the NCDOT to continue working with local officials to find design and economic justice solutions for this project.

6. **New Project (Fayetteville Road, Woodcroft Parkway to Riddle Rd.)**
   This project is at the top of the MPO's regional priority list and a critical element for reducing congestion in the north/south corridor of south-central Durham. The City of Durham has already completed some preliminary design and environmental work on this alignment, and therefore this project might be ready for construction in a relatively short time frame. The MPO wants to work with the NCDOT to identify funding to construct this project.

c. Planning Study and Project Management Requests

7. **U-4722 (US 501/Roxboro Rd.), 4720 (US 70) and U-4721 (Northern Durham Parkway)**
   With the East End Connector (U-71) included in the draft FY 2011-2020 STIP, it is important to initiate the planning process for the next priority Highway Trust Fund projects in Durham, including US 70, the Northern Durham Parkway and Roxboro Road. The Roxboro Road project was ranked second in the entire state in the SPOT evaluation process. In addition, it is important that the planning and study process for the US 70 and Northern Durham Parkway projects be closely coordinated because those two Highway Trust Fund projects serve similar travel corridors and are closely related.

8. **C-4402 (NC 54 Bicycle Improvements)**
   NCDOT previously agreed to manage EB-4707 (Old Durham-Chapel Hill Road Bicycle and Pedestrian Improvements) if the City of Durham would agree to manage C-4402. However, the DCHC MPO requests that NCDOT reconsider managing C-4402. NC 54 is a major State route. The MPO and the City of Durham do not have the resources to manage a project of this magnitude on the State system.

9. **U-2405 (M. L. King Jr. Parkway and NC 55 Interchange)**
   With the completion of M. L. King Jr. Parkway from US 15-501 to NC 55, it is appropriate to complete the last link of this important thoroughfare from NC 55 to Cornwallis Road to serve Research Triangle Park. The MPO wants to consider lower cost alternatives to the $25.8 million unfunded interchange identified in a previous STIP. The DCHC MPO requests that NCDOT provide information regarding the feasibility study re-evaluation in progress.

10. **U-4724 (Cornwallis Rd., S. Roxboro Rd. to Chapel Hill Rd.)**
    This project is currently funded using the MPO's STP-DA funds. Additional funding may be needed depending on a revised cost estimate.

Division 7 One-on-One Meeting
FY 2011-2020 Transportation Improvement Program

Agenda

FY 2011-2020 TIP Items for Discussion
a. General Funding and Design Issues
b. Project Schedules and Funding
c. Other Items

FY 2011-2020 TIP Items for Discussion

The DCHC MPO has reviewed the FY 2011-2020 Draft STIP and developed the following list of issues for discussion. The MPO is developing the FY 2011-2020 MTIP which will be approved in late spring/early summer 2008.

a. General Funding and Design Issues

1. **Need additional funding for transportation**
   The DCHC MPO has two new major highway projects in the draft FY 2011-2020 STIP, including I-3306 (I-40 widening) and I-0305 (I-85 widening), which are scheduled for construction relatively far into the future (years 2019 and 2020, respectively). The high cost of these projects has left no funding for other roadway capacity projects in the second half of the draft STIP, i.e., years 2016 to 2020. Recently, the North Carolina General Assembly approved the Mobility Fund and the NCDOT has begun consideration of the evaluation criteria for selecting projects for this fund. The DCHC MPO believes that it is important that the criteria favor large projects in urban areas to help fund projects like the I-40 widening and I-85 widening so funding is also available for other roadway, bicycle, pedestrian and transit projects.

   Meanwhile, all Division 7 roadway projects in the first half of the draft STIP, i.e., years 2011 to 2015, have been delayed one to three years when compared to the FY2009-2015 STIP. These projects have been delayed even though the Elizabeth Brady Road Extension, budgeted at $34 million and planned for a 2012 construction start, was deleted from the draft STIP. The Town of Hillsborough is concerned that none of the Town's priority projects are funded in the draft STIP.

2. **Prioritize funding for bicycle, pedestrian, and transit projects**
   The DCHC MPO strongly supports multi-modal transportation. Many of the MPO's top priorities are bicycle, pedestrian, and transit projects (see Regional Priority List). The Town of Chapel Hill updated its long range transit plan and the plan recommends a significant expansion of service for which additional

funding is needed. In the past, the traditional funding sources for these projects have disproportionately been the target for rescissions. In addition to the traditional funding sources for these projects, the DCHC MPO would like these projects to receive funds traditionally used for highway projects such as STP funds. Bicycle/pedestrian projects are typically far less costly than highway projects. With so little revenue available for new projects, it would be a good opportunity to use limited resources on a greater number of these less expensive bicycle/pedestrian projects.

3. **All highway projects**
   NCDOT has changed its approach to highway design from accommodating motor vehicles only to providing for a multi-modal transportation system. However, on roadway projects that include widening and multi-modal facilities, the project descriptions in the TIP continue to say "widen to multi-lanes" with no mention of multi-modal facilities. The DCHC MPO continues to believe that the TIP would better communicate to the public and to NCDOT departments the actual project scope if the project descriptions said "widen to multi-lanes and include bicycle, pedestrian, and transit facilities" where appropriate.

b. Project Schedules and Funding

4. **Churton Street Congestion in the Town of Hillsborough**
   The Elizabeth Brady Road Extension project (U-3808) was eliminated from the FY2011-2020 STIP. The principal purpose of that project was to relieve traffic congestion on Churton Street. The Town of Hillsborough and the DCHC-MPO are currently analyzing several projects from the draft STIP and 2035 LRTP to identify those whose cumulative effects will have the greatest positive impact on Churton Street congestion. It is requested that the NCDOT study this set of projects as an alternative to the Elizabeth Brady Extension. The projects include:

   a. R-2825 (South Churton Street): A Feasibility study was completed for this project in the mid-1990s but will need to be updated to recognize local planning efforts such as the South Churton Corridor Study and the schedule for the I-85 widening project. It appears that this project, which includes congestion management, access limits, aesthetic and capacity improvements between US 70 Business and Interstate 40, cannot move forward until the I-85 widening is complete. One study concluded that the South Churton Street project alone will improve corridor travel time by 10%.

   b. U-3436 (Eno Mountain Road/Mayo Street alignment): This project is to realign the intersection and make additional safety improvements.

   c. NC 86 widening between US 70-A and Old NC 10: This project is in the 2035 LRTP but not the draft STIP. This project could be integrated with the I-85 widening.

d. NC 86 widening from US 70 Bypass to Coleman Loop Road: This project is in the 2035 LRTP but not the draft STIP. The segment between the US 70 Bypass and NC 57 is the highest priority.

e. Orange Grove Road Extension to US 70-Alternate: This project is in the 2035 LRTP but not the draft STIP. One study concluded that this project alone will improve corridor travel time by 10%.

5. I-0305 (I-85 widening)
The DCHC MPO wants to change the phase descriptions to prioritize the rebuilding of interchanges at NC 86, SR 1009 (Old NC 86) and US 70 before widening of the roadway. In addition, the MPO is concerned that the cost and scheduling of this large project precludes consideration of the set of projects submitted as an alternative to the former Elizabeth Brady Road Extension project (U-3808), which is discussed in above

6. C-5184 Riverwalk (Hillsborough)
The DCHC MPO has an adopted CMAQ project schedule, which has the following for the Riverwalk – design in year 2013, right-of-way in 2014, and construction in 2015. The draft STIP has does not have construction until 2018. Please help resolve this discrepancy.

7. C-4932A (Park-and-Ride)
This CMAQ project is to have operational funding for 3 years but this operational funding is not noted in the draft STIP.

8. EB-4980 (Orange Grove Road Pedestrian Bridge)
This project is the number one priority for Orange County and was also listed on the Town of Hillsborough's priority list. The NCDOT Director of Division of Bicycle and Pedestrian Transportation recommends removing this project from the current five-year work plan and TIP schedule due to a lack of necessary supporting pedestrian facilities along Orange Grove Road. The DCHC MPO requests that this project remain on the TIP schedule. The County is developing a CTP, anticipated to be adopted in Spring 2012, and is also developing a Safe Routes to School Action Plan to address barriers to walking and bicycling at three Orange County schools including New Grady Brown Elementary. The pedestrian bridge is necessary for safe transport across I-40 for many of these school children, and a key part of the plan for that school.

c. Other Items

9. Roadway Signage in the Hillsborough Area
The Town of Hillsborough's Wayfinding Task Force recently made several recommendations to consolidate and relocate roadway signs in Hillsborough, particularly along Churton Street, which is the main thoroughfare through the Town's central business district. In addition, the Task Force recommended

improved signage on I-85 and I-40 for Hillsborough destinations. Please indicate the NCDOT with whom to share these recommendations and discuss making the changes.

DCHC MPO TIP Regional Priority List – Highway

Approved MPO-wide List (no urban loops)

MPO-wide Rank	Name (limits)	Draft STIP
1	Fayetteville Rd. (Woodcroft Pkwy. To Riddle Rd.) widen to 4-lane divided, bike lanes, and sidewalks	Not in draft STIP
2	Ephesus Church Road (US 15-501 to Farrington Road) bike lanes, sidewalks, and safety improvements	Not in draft STIP
3	Erwin Road (15-501 to NC 751) bike lanes, sidewalks, and safety improvements (design may vary along length)	Not in draft STIP
4	Jack Bennett Road [SR1717] (US 15-501 to Lystra Rd. [SR1721]) safety improvements	Not in draft STIP
5	NC 54 (I-40 east to NC 55) widen to multi-lane divided with transit accommodations, bike lanes, and sidewalks	FS-1005C (page 7) - Scheduled for feasibility study.
6	Fordham Boulevard (Columbia St/US 15-501 South to Ephesus Church Road) sidewalks, wide-outside lanes, and transit accommodations	U-5304 (page 4) - $5,150,000 construction funded in FY 2019
7	Lystra Road [SR 1721] (US 15-501 to Farrington Point Rd. [SR1008]) safety improvements	Not in draft STIP
8	U-4716 Hopson Rd./Church St. grade separation at RR, close Church St. RR crossing	U-4716 (page 7) - Grade separation, rail realignment, double track funded in FY 2011-2013; Church Street crossing closure and Hopson Road widening unfunded.
9	R-2825 South Churton Street Improvements (I-40 to the Eno River)	Not in draft STIP
10	North Greensboro (Weaver to Shelton) paint, median, bicycle signal detection, etc.	Not in draft STIP
11	Estes Drive (NC86 to Caswell Road) widen existing roadway to include two 12-foot travel lanes, four-foot bicycle lanes and sidewalks.	Not in draft STIP
12	Estes Dr. Extension (Greensboro to NC 86) bike lanes, sidewalks, and transit accommodations and multi-use path to Williams Street	Not in draft STIP
13	Piney Mountain (NC 86 to Riggsbee) turn lanes, sidewalks, bicycle lanes and transit accommodations	Not in draft STIP
14	Franklin/Merritt Mill/Brewer/Main Intersection	Not in draft STIP
15	Orange Grove Rd Extension to US 70 Business	Not in draft STIP
16	Lystra Road [SR 1721] (Jack Bennett Rd. [SR1717] to west side of N. Chatham Elementary) increase length of turn lanes	Not in draft STIP
17	Jeremiah Drive [SR 1762] (Lystra Rd. [SR 1721] to End) elevate road for flood control	Not in draft STIP
18	Estes/Greensboro roundabout	Not in draft STIP
19	U-3436 Eno Mountain Road, Mayo Street & Orange Grove Road Realignment	Not in draft STIP

MPO-wide Rank	Name (limits)	Draft STIP
20	U-2405 Martin Luther King Jr. Pkwy./NC 55 intersection extend to Cornwallis Rd. bridge over RR	Not in draft STIP
21	NC 54 (I-40 west to Barbee Chapel Rd.) widen to 6-lane divided, sidewalks	Not in draft STIP
22	Old Oxford Highway (Roxboro Rd. to Hamlin Rd.) expand capacity, bike lanes, and sidewalks	Not in draft STIP
23	NC 751 (S. Roxboro Rd. to NC 54) widen to 4-lane, bike lanes, and sidewalks	Not in draft STIP
24	Homestead (NC 86 to Old NC 86) bicycle lanes, sidewalks, transit accommodations, and safety improvements (design may vary along length)	Not in draft STIP
25	Seawell School (Homestead to Estes) bicycle lanes, sidewalks, transit accommodations, and intersection safety improvements (design may vary along length)	Not in draft STIP

Projects that were not on the MPO priority list or in the previous TIP with funding in the Draft STIP (non-maintenance projects)

Page	ID	Name	Draft STIP
1	I-3306	I-40 (I-85 to Durham County Line) Add additional lanes	Construction funded in FY 2019-future years
2	I-0306	I-85 (I-40 to Durham County Line) Widen to six lanes and reconstruct interchanges and structures	Construction funded in FY 2020-future years
7	FS-1008B	NC 751 (US 64 to north of SR 1118 Fayetteville Road) Widen to multi-lanes with bicycle lanes*	Scheduled for feasibility study

*Widening in Chatham County is not in the 2035 LRTP.

Projects that were not on the MPO priority list because they were in the previous TIP with a change in funding in the Draft STIP (non-maintenance projects)

Page	ID	Name	Draft STIP
4	U-2803	SR 1919/Smith Level Road (Rock Haven Road to bridge) widen to multi-lanes	Right of way delayed from FY 2010 to FY 2011; Construction delayed from FY 2011 to FY 2013
4	U-0624	NC 86/S. Columbia Street (SR 1906 Purefoy Road to SR 1902 Manning Drive) corridor upgrade to include bicycle lanes	Construction delayed from FY 2009 to FY 2012
5	U-3308	NC 55/Alston Avenue (NC 147 to NC 98) widen to four lane divided facility and replace Norfolk-Southern railroad bridges	Right of way delayed from FY 2008 to FY 2011; Construction delayed from FY 2011 to FY 2014

DCHC MPO TIP Regional Priority List – Bicycle and Pedestrian

The DCHC MPO submitted 46 bicycle and pedestrian projects to NCDOT through the TIP prioritization process. At the request of NCDOT, we were asked to provide a shortened list of the top 5 bicycle and top 5 pedestrian projects in the MPO. The following 10 projects were submitted.

MPO-wide Rank	Name (limits)	Draft STIP
1	University Drive sidewalks and bicycle facilities (Garrett Rd to NC 751/Hope Valley Road)	Not in draft STIP
2	NC 86/Martin Luther King Jr Blvd sidewalks and bicycle facilities (I-40 to North Street)	Not in draft STIP
3	SR 1669/Club Blvd sidewalks and bicycle facilities (Ruffin St to SR 1670/E Geer Street)	Not in draft STIP
4	NC 54 sidewalks and bicycle facilities (US 15-501/Fordham Blvd to SR 1110/Barbee Chapel Road)	Not in draft STIP
5	SR 1666/Dearborn Dr sidewalks and bicycle facilities (SR 1669/Club Blvd to Ruth Street)	Not in draft STIP
6	18 Chapel Hill intersections bicycle and pedestrian improvements	Not in draft STIP
7	SR 1158/W Cornwallis Road sidewalks and bicycle facilities (SR 1306/Erwin Road to SR 1127/Chapel Hill Road)	Not in draft STIP
8	US 15-501/Fordham Blvd pedestrian and bicycle overpass/underpass between SR 1902/Manning Drive and Old Mason Farm Road	Not in draft STIP
9	SR 1945/S. Alston Ave. sidewalks and bicycle facilities (Capps St to SR 1171/Riddle Road)	Not in draft STIP
10	Bolin Creek Greenway (NC 86 to Umstead Park)	Not in draft STIP

MEMORANDUM

TO: Transportation Coordinating Committee (TCC)
DCHC MPO

FROM: Lead Planning Agency

DATE: September 22, 2010

RE: Job Access Reverse Commute and New Freedom 2010 Call for Projects

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The available funds are from two sources – Job Access/Reverse Commute (JARC) and New Freedom (NF). JARC funds are intended to fund "the development and maintenance of transportation services designed to transport welfare recipients and eligible low-income individuals to and from jobs and activities related to their employment". NF funds are intended to provide improved public transportation services and alternatives to public transportation for people with disabilities beyond those required by the Americans with Disabilities Act of 1990 (ADA). Eligible applicants for both programs include state or local governments, private non-profit organizations, and operators of public transportation services including private operators of public transportation services. Funds may be used for planning, capital, or operating costs. Funds can be used according to the following limits:

- Up to 80% for capital projects.
- Up to 50% for operating assistance.
- Up to 10% for program administration.

As required by the FTA, the DCHC MPO created a Coordinated Public Transit - Human Services Transportation Plan to guide the selection and funding of future JARC and NF projects. The TAC approved this plan in March 2007. The DCHC MPO has held three Calls for Projects in 2007, 2008, and 2009 for the MPO's FY 2006- FY 2009 JARC and NF funds using the procedures outlined in the Coordinated Public Transit - Human Services Transportation Plan. The DCHC MPO has allocated all of the FY 2007, 2008 and a portion of FY 2009 funds. The remainder of FY 2009 funds available will be made available for allocation during FY 2010's Call for Projects.

2010 Call for Projects – Funds Available

The tables in **Attachment 6A** summarize the funds available for the JARC and NF programs. The MPO has received appropriations for FYY's 2006 - 2010. All approved funding have been obligated in FTA's financial system. The MPO's remaining JARC appropriations are $72,671 from FFY 2009, $94,283 from a DATA project that was cancelled and an additional $195,374 from FFY 2010. The total of $362,328 will be offered for use in the MPO's FY 2010 Call-for-projects.

The MPO's remaining NFP appropriations that have not already been committed to a project are $10,769 from FFY 2009 and an additional $87,757 from FFY2010. The total of $98,526 will be offered for use in the MPO's FY 2010 Call-for-projects.

2010 Call for Projects – Updated Schedule

The LPA recommends the following schedule for the 2010 Call for Projects:

- 12/16/2009 TCC update on 2010 Call for Projects & prior year's project status
- Spring 2010 FTA releases FY 2010 appropriations
- 9/22/2010 TCC receives FFY 2010 appropriation & updated schedule for 2010 Call for Projects.
- 10/13/2010 TAC receives updated schedule for 2010 Call for Projects.
- 11/10/10 TAC approve application package and request LPA staff begins project solicitations.
- 12/10/10 – 2/28/11 Solicitation for applications
- 1/19/11 Application Workshop
  Time: 10am – noon
  Location: Transportation Conference Room, 4th Floor
  Durham City Hall
  101 City Hall Plaza
  Come to hear a brief presentation on the JARC/NF application process, discuss your application with staff, and get your questions answered.
- 2/28/11 Application deadline
- 3/1/11 – 3/31/11 Review Committee reviews and scores proposals
- 3/31/11 – 4/15/11 Review Committee selects CPT-HSTP projects for recommendation to the TCC
- 4/27/2011 TCC action on Review Committee recommendations
- 5/11/2011 TAC action on TCC recommendations
- 5/31/2011 Funding recipients receive notification
- 6/30/2011 FTA Application Deadline for obligation 2010 program of projects.
- 09/23/2011 FY 2009 funds lapse if not obligated

Program Management Plan

A Program Management Plan (PMP) is required by FTA to document and describe the methods or processes used by the City of Durham, the designated recipient of the Job Access Reverse Commute (JARC) and New Freedom (NF) funds, to solicit, select, award and administer both JARC and NF funds. The MPO developed a PMP and submitted it to FTA. The PMP was approved by FTA on July 30, 2008. The MPO will submit the new Program of Projects (POP) with the FY 2010 JARC and NFP applications.

TCC Action: Recommend the TAC approve the proposed 2010 Call for Projects updated schedule.

PROGRAM OF PROJECTS
JARC (5316)

TCC 9/22/2010 Attachment 6A

MPO Approval Date	Sub-Recipient	Agency Type	Project Status	Project Description	Project Type	FTA PROJECT ID#	PROJECT COSTS Total Cost	Federal Share	Program Admin.
6/14/2006	DATA	Public Transit	COMPLETE	Downtown Durham to the Brier Creek	Operating	NC-37-X010-00	$ 193,752	$ 96,876	$ -
9/13/2006	TTA	Public Transit	Not-Applicable	Administrative Costs	Administration	NC-37-X010-00	$ 22,433	$ 22,433	$ 22,433
6/13/2007	DATA	Public Transit	Not-Applicable	Administrative Costs	Administration	NC-37-X017-00	$ 12,856	$ 14,463	$ 14,463
6/13/2007	DATA	Public Transit	COMPLETE	Evening service extension	Operating	NC-37-X017-00	$ 203,138	$ 100,000	$ -
6/13/2007	CHT	Public Transit	COMPLETE	Evening service extension	Operating	NC-37-X017-00	$ 101,098	$ 50,549	$ -
5/14/2008	DURHAM	Public Transit	Not-Applicable	Administrative Costs	Administration	NC-37-X017-01	$ 13,928	$ 13,928	$ 13,928
5/14/2008	CHT	Public Transit	In-Progress	Rogers Road Project	Operating	NC-37-X017-01	$ 169,936	$ 84,968	$ -
5/14/2008	DATA	Public Transit	COMPLETE	New Hope Commons Project	Operating	NC-37-X017-01	$ 145,986	$ 72,993	$ -
5/13/2009	DATA	Public Transit	ON HOLD	Continuation of Downtown to Brier Creek Service	Operating	NC-37-X017-01	$ 188,566	$ 94,283	$ -
5/13/2009	CHT	Public Transit	In-Progress	Continuation of NS&G (night service)	Operating	NC-37-X017-01	$ 118,534	$ 59,267	$ -
5/13/2009	DURHAM	Governmental	Not-Applicable	Administrative Costs	Administration	NC-37-X017-01	$ 16,347	$ 16,347	$ 16,347
5/19/2010	DURHAM	Governmental	Not-Applicable	Administrative Costs	Administration	NC-37-X017-01	$ -	$ -	$ -

MPO Approved Funding		Total:	$ 626,107
DCHC MPO Appropriations	FY 2006		$ 152,453
	FY 2007		$ 160,702
	FY 2008		$ 174,094
	FY 2009		$ 204,341
	FY 2010		$ 195,374
		Appropriations Total:	$ 886,964
		Prior Balance (FY 2009)	$ 72,671
		DATA Project Cancelled/Deobligation:	$ 94,283
		FY 2010 Appropriation:	$ 195,374
		Remaining Balance :	$ 362,328

Designated Recipient: DCHC-MPO

PROGRAM OF PROJECTS
NEW FREEDOM (5317)

MPO Approval Date	Sub-Recipient	Agency Type	Project Status	Project Description	Project Type	FTA PROJECT ID#	PROJECT COSTS		
							Total Cost	Federal Share	Planning & Administrative
6/13/2007	DURHAM	Governmental	Not-Applicable	Administrative	Administration	NC-57-X006-02	$ 5,745	$ 5,745	$ 5,745
6/13/2007	DATA/TTA/CHT	Public Transit	In-Progress	Paratransit Eligibility Assessment	Operating	NC-57-X006-02	$ 35,000	$ 17,500	$ -
5/14/2008	DURHAM	Governmental	Not-Applicable	Administrative	Administration	NC-57-X006-02	$ 6,206	$ 6,206	$ 6,206
5/14/2008	CHT & OPT	Public Transit	In-Progress	Elderly population feeder service	Operating	NC-57-X006-02	$ 97,600	$ 48,800	$ -
5/13/2009	DATA	Public Transit	In-Progress	Taxicab service to supplement ACCESS service	Operating	NC-57-X006-02	$ 140,760	$ 70,380	$ -
5/13/2009	DURHAM	Public Transit	Not-Applicable	Administrative	Administration	NC-57-X006-02	$ 7,153	$ 7,153	$ 7,153
5/13/2009	DCCSC	Non-profit	In-Progress	Travel Training / Mobility Manager	Capital	NC-57-X006-02	$ 31,357	$ 20,000	$ -
5/13/2009	CHT	Public Transit	In-Progress	Go Triangle Regional Transit Information Center	Capital	NC-57-X006-02	$ 50,614	$ 40,491	$ -
5/14/2009	CHT	Public Transit	In-Progress	Mobility Manager	Capital	NC-57-X006-02	$ 70,000	$ 35,000	
5/13/2009	DURHAM	Governmental	Not-Applicable	Administrative	Administration	NC-57-X006-02	$ -	$ -	$ -

MPO Approved Funding			Total: $ 251,275
DCHC MPO Appropriations	FY 2006		$ 71,878
	FY 2007		$ 71,810
	FY 2008		$ 77,573
	FY 2009		$ 89,416
	FY 2010		$ 87,757
		Appropriations Total:	$ 398,434
		Lapsed funds (FY 2006):	$ (48,633)
		Remainging Balance :	$ 98,526

Federal Financial Reporting (FFR)

JARC (5316)

DR FY	MPO Approval Date	Sub-Recipient	Project Description NC-37-X0017-01	Project Costs Total Cost	Project Costs Federal Share	1stQtr2010 Total Cost	1stQtr2010 Federal Share	2ndQtr2010 Total Cost	2ndQtr2010 Federal Share	3rd Qtr2010 Total Cost	3rd Qtr2010 Federal Share	4thQtr2010 Total Cost	4thQtr2010 Federal Share	Year To Date Expenditures Total Cost	Year To Date Expenditures Federal Share	Percent Of Cost Expended To Date
2009	5/14/2008	CHT	Rogers Road community	$ 169,936	$ 84,968	$ 15,551	$ 7,776	$ 35,874	$ 17,937	$ 35,874	17,937.16	$ 37,013	$ 18,507	$ 124,313	$ 62,156	73%
2010	5/13/2009	CHT	NS Route Expansion (service to Rogers Rd.)	$ 118,534	$ 59,267	$ 6,536	$ 3,268	$ 14,494	$ 7,247	$ 14,494	7,247.16	$ 14,954	$ 7,477	$ 50,479	$ 25,239	43%
2009	5/14/2008	DATA	New Hope Commons.	$ 145,986	$ 72,993	$ 145,986	$ 72,993	Project Complete						$ 145,986	$ 72,993	100%
2010	5/13/2009	DATA	Downtown Durham to Brier Creek.	$ 188,566	$ 94,283	Project Cancelled										
TOTAL OPERATING COST - NC-37-4017				**$ 623,022**	**$ 311,511**	**$ 168,073**	**$ 84,036**	**$ 50,369**	**$ 25,184**	**$ 50,369**	**25,184.32**	**$ 51,968**	**$ 25,984**	**$ 320,778**	**$ 160,389**	
2009	5/14/2008	City of Durham	Administrative - FY08	$ 13,928	$ 13,928	$ 11	$ 11	$ 196	$ 196	$ 2,846	2,845.92	$ 5,612	$ 5,612	$ 8,664	$ 8,664	62%
2010	5/13/2009	City of Durham	Administrative - FY09	$ 16,347	$ 16,347	$ -	$ -	$ -	$ -	$ 2,882	2,882.34	$ 6,636	$ 6,636	$ 9,518	$ 9,518	58%
TOTAL ADMINITRATIVE EXPENDITURES - NC-37-6017				**$ 30,275**	**$ 30,275**	**$ 11**	**$ 11**	**$ 196**	**$ 196**	**$ 5,728**	**5,728.26**	**$ 12,247**	**$ 12,247**	**$ 18,182**	**$ 18,182**	
			TOTALS $:			$ 11,055	$ 50,564	$ 25,380	$ 56,097	30,912.58	$ 64,215	$ 38,231	**$ 338,960**	**$ 178,571**	

Federal Financial Reporting (FFR)

NEW FREEDOM (5317)

DR FY	MPO Approval Date	Sub-Recipient	Project Description	PROJECT COSTS Total Cost	PROJECT COSTS Federal Share	1stQtr2010 Expenditures Total Cost	1stQtr2010 Expenditures Federal Share	2ndQtr2010 Expenditures Total Cost	2ndQtr2010 Expenditures Federal Share	3rd Qtr2010 Expenditures Total Cost	3rd Qtr2010 Expenditures Federal Share	4th Qtr2010 Expenditures Total Cost	4th Qtr2010 Expenditures Federal Share	Year To Date Expenditures Total Cost	Year To Date Expenditures Federal Share	Percent Of Cost Expended To Date
2008	6/13/2007	DATA	Paratransit Eligibility	$ 35,000	$ 17,500	-	-	-	-	-	-	1,800	900	1,800	900	5%
2010	5/13/2009	DATA	ACCESS Taxi cab supplement service	$ 140,760	$ 70,380	-	-	-	-	-	-	79,138	39,569	79,138	39,569	56%
2009	5/14/2008	CHT & OPT	Cross Town Shuttle	$ 97,600	$ 48,800	-	-	-	-	-	-	-	-	-	-	0%
TOTAL OPERATING COST - NC-57-4006				**$ 273,360**	**$ 136,680**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 80,938**	**$ 40,469**	**$ 80,938**	**$ 40,469**	
2010	5/13/2009	CHT	Call Center (capital)	$ 50,614	$ 40,491	-	-	-	-	20,038	16,030	10,019	8,015	30,057	24,046	59.4%
2010	5/13/2009	CHT	Mobility Manager (capital)	$ 70,000	$ 35,000	-	-	3,860	3,088	14,722	11,778	17,313	13,850	35,896	28,716	51.3%
2010	5/13/2009	DCCSC	Senior Travel Training	$ 31,357	$ 20,000	-	-	-	-	-	-	-	-	-	-	0.00%
TOTAL CAPITAL EXPENDITURES - NC-57-0006				**$ 151,971**	**$ 95,491**	**$ -**	**$ -**	**$ 3,860**	**$ 3,088**	**$ 34,760**	**$ 27,808**	**$ 27,332**	**$ 21,866**	**$ 65,953**	**$ 52,762**	
2008	6/13/2007	DATA	Administrative - FY07	$ 5,745	$ 5,745	-	-	-	-	-	-	-	-	-	-	0.0%
2009	5/14/2008	DATA	Administrative - FY08	$ 6,206	$ 6,206	-	-	328	328	1,094	1,094	2,864	2,864	4,286	4,286	69.1%
2010	5/13/2009	City of Durham	Administrative - FY09	$ 7,153	$ 7,153	-	-	-	-	1,261	1,261	3,200	3,200	4,461	4,461	62.4%
TOTAL ADMINITRATIVE EXPENDITURES - NC-57-6006				**$ 19,104**	**$ 19,104**	**$ -**	**$ -**	**$ 328**	**$ 328**	**$ 2,355**	**$ 2,355**	**$ 6,064**	**$ 6,064**	**$ 8,747**	**$ 8,747**	
			TOTALS $:			**$ -**	**$ -**	**$ 4,188**	**$ 3,416**	**37,115**	**30,163**	**114,334**	**68,399**	**155,638**	**101,978**	

RESOLUTION TO MODIFY THE
2009-2015 TRANSPORTATION IMPROVEMENT PROGRAM
FOR THE DURHAM-CHAPEL HILL-CARRBORO URBAN AREA

AMENDMENT #17
October 13, 2010

A motion was made by TAC Member _____ and seconded by TAC Member _____ for the adoption of the following resolution, and upon being put to a vote, was duly adopted.

WHEREAS, the Metropolitan Transportation Improvement Program (MTIP) is a staged multiple year listing of all federally funded transportation projects scheduled for implementation within the Durham-Chapel Hill-Carrboro Urban Area which have been selected from a priority list of projects; and

WHEREAS, the document provides the mechanism for official endorsement of the program of projects by the Transportation Advisory Committee (TAC); and

WHEREAS, the inclusion of the TIP in the transportation planning process was first mandated by regulations issued jointly by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) and no project within the planning area will be approved for funding by these federal agencies unless it appears in the officially adopted TIP; and

WHEREAS, the procedures for developing the MTIP have been modified in accordance with certain provisions of the SAFETEA-LU Federal Transportation Act and guidance provided by the State; and

WHEREAS, projects listed in the MTIP are also included in the State TIP (STIP) and balanced against anticipated revenues as identified in the STIP; and

WHEREAS, the North Carolina Department of Transportation and the Transportation Advisory Committee have determined it to be in the best interest of the Urban Area to amend the FY 2009-2015 Metropolitan Transportation Improvement Program as described in the attached sheet; and

WHEREAS, there has been no change in the MTIP project schedule or project design concept and scope with regard to the air quality conformity finding made by the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization Transportation Advisory Committee on August 13, 2008; and

WHEREAS, the DCHC MPO certifies that this MTIP amendment is consistent with the intent of the DCHC MPO 2035 LRTP; and

BE IT THEREFORE RESOLVED that the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization Transportation Advisory Committee hereby amends the FY 2009-2015 Metropolitan Transportation Improvement Program of the Durham-Chapel Hill-Carrboro Urban Area, as approved by the TAC on August 13, 2008, and as described in the "Attachment to Resolution for Amendment #17 to DCHC 2009-2015 MTIP" provided here on this, the 13th day of October, 2010.

_____

J. Michael Woodard, TAC Chair

Durham County, North Carolina

I certify that J. Michael Woodard personally appeared before me this day acknowledging to me that he signed the forgoing document.

Date: October 13, 2010

_____

_____, Notary Public

My commission expires: _____

Attachment to Resolution for Amendment #17 to DCHC 2009-2015 MTIP

New Projects

TIP	Location	Description	Funding	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
I-5205	I-40, I-85, I-540	Interstate maintenance preservation (Division 5)	IMPM	1,542,000	1,542,000	1,542,000	1,542,000	1,542,000
I-5207	I-40, I-85	Interstate maintenance preservation (Division 7)	IMPM	1,155,000	1,155,000	1,155,000	1,155,000	1,155,000
I-5145	I-85	North of US t70 in Durham County to north of NC 56 in Granville County. 12.9 miles, pavement preservation	IM	8,500,000	-	-	-	-

Triangle Regional Transit Program

Transitional Analysis Report

DRAFT

Prepared for: Triangle Transit
Prepared by: URS Team
September 2, 2010

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EXECUTIVE SUMMARY

PURPOSE

The primary purpose of the Transitional Analysis is to define the corridor(s) for inclusion in the Alternatives Analysis studies. The starting point for defining corridors is the adopted Long Range Transportation Plans (LRTPs) of the region's two Metropolitan Planning Organizations (MPOs). In this region, the two MPOs have adopted a joint LRTP, and the transit element of that LRTP is considered the system plan for transit in the region. The Transitional Analysis acts as the bridge between the system plan in the LRTP and the more focused and detailed study performed in an Alternatives Analysis.

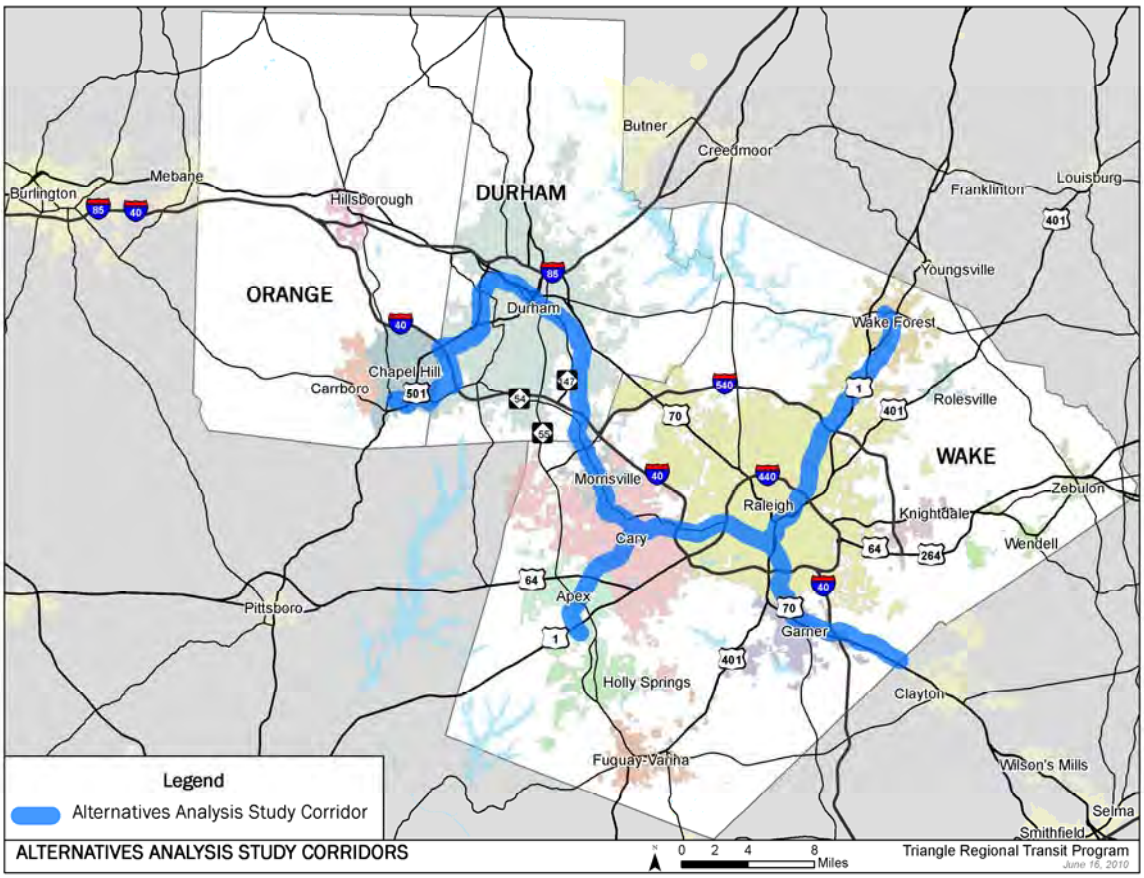
For the Transitional Analysis, the system plan has been broken down into a set of smaller corridors that have been evaluated in order to recommend a limited number of priority corridors to move forward into the Alternatives Analysis process. This Transitional Analysis applies a set of evaluation criteria and measures to each corridor for evaluation and prioritization of the corridors moving forward into the Alternatives Analysis process. For the purposes of this analysis, a corridor consists of a relatively wide band up to one mile wide with major activity centers identified. Typical activity centers include the Northeast Regional Center (NERC), Downtown Raleigh, NC State Fairgrounds, Cary, Research Triangle Park (RTP), Downtown Durham, and Gateway East. This is not an inclusive list of the centers but provides examples for illustration. In the detailed Alternatives Analysis, the exact number and locations of stations will be identified and an activity center may contain one or more stations.

CORRIDORS

Eighteen corridors were evaluated in this study. Using the 2035 Joint LRTP for both the Capital Area MPO and the Durham-Chapel Hill-Carrboro MPO (see Figure ES.1) as well as input from Triangle Transit, both MPO's, and other stakeholders, eighteen corridors were created for screening: 11 for Wake County, 6 for Durham and Orange Counties, and 1 commuter rail-style corridor alternative for Durham and Wake Counties. This corridor, which extends from the Johnston County Line to the vicinity of Hillandale Road in Durham, however is not evaluated in this Transitional Analysis. The entire corridor will be studied in a subsequent Alternative Analysis, comparing both light rail and commuter rail technologies. A region-wide corridor is included as a Wake Alternative and a Durham-Orange Alternative for comparative analysis, though the corridors (Wake 1 and Durham-Orange 1) differ only by nomenclature.

The study corridors were presented to the Capital Area Metropolitan Planning Organization (CAMPO), the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO or DCHC) and to elected officials. The identification of corridors was also widely communicated to various cities and organizations including the Town of Cary, Town of Chapel Hill and University of North Carolina representatives, the owners and tenants of the Research Triangle Park, the Wake County Municipalities, the Wake County Technical Committee, the Durham-Orange County Technical Committee and the Public Involvement Steering Committee set up for this project. All known stakeholders attended one of these presentations. Comments received from stakeholders have been considered and incorporated into this Transitional Analysis.

Figure ES.1 Transitional Analysis Study Corridors (Derived from 2035 LRTP)



EVALUATION CRITERIA

The corridors were evaluated by the consulting team using the following criteria, which were developed in consultation with Triangle Transit, DCHC-MPO and CAMPO. Where applicable, the evaluation year is noted in parentheses.

Mobility

- Number of daily total trips in corridor (2035)
- Number of daily transit trips in corridor (2035)
- Transit passenger miles traveled (PMT) for rail (2035)
- Relative peak hour corridor travel times for rail and highway travel (2035)

Socioeconomic

- Population and density within a mile-wide corridor (2005 and 2035)
- Number and density of low-income households within a mile-wide corridor (2000)
- Number and density of minority households within a mile-wide corridor (2000)

- Number and density of jobs within a mile-wide corridor (2005 and 2035)

Land Use

- Supports Transit Oriented Development (TOD) (Existing master plans consistent with TOD concepts, level of public sector support and private interest)
- Activity centers served (employment, retail, major institutions, mixed use, special attractions)
- Planned developments in corridor (pipeline development and private sector development plans)

Financial

- Total capital cost (2010 Dollars)
- Capital cost per mile (2010 Dollars)
- Capital cost per weekday transit trip
- Capital cost per weekday transit passenger mile traveled
- Total Operating and Maintenance (O&M) cost (2010 Dollars)
- O&M cost per weekday transit trip
- Annual O&M cost per weekday transit passenger mile traveled

RESULTS

Wake County

Eleven corridors in Wake County were evaluated, the results of which can be seen in Table ES.1. A summary of the findings and a recommendation are provided below.

Table ES.1 Evaluation Criteria Summary (Wake County)

		Mobility	Socioeconomic				Land Use			Financial		
Study Corridor	Corridor Length (mi)	Rail Trips/Mile	Population Density	Employment Density	Low Income Population Density	Minority Population Density	Supports Transit Oriented Development	Activity Centers Served	Development Potential	Capital Cost per Mile	Capital Cost/ Weekday Transit Trip	Operating & Maintenance Cost/ Weekday Transit Trip
Wake Alternative 1 UNC Hospitals to Wake Forest	59	◐	○	○	◐	◐	●	●	○	●	●	●
Wake Alternative 2 Triangle Metro Center to Wake Forest	33	◐	◐	○	○	○	●	●	◐	●	◐	◐
Wake Alternative 3 Veredia to Wake Forest	33	◐	◐	○	○	○	●	●	◐	●	◐	◐
Wake Alternative 4 Downtown Cary to Wake Forest	25	○	◐	◐	◐	◐	●	●	◐	●	○	◐
Wake Alternative 5 State Fairgrounds to Wake Forest	20	○	◐	◐	◐	○	●	◐	◐	●	○	○
Wake Alternative 6 Downtown Raleigh to Wake Forest	17	○	◐	◐	○	○	●	◐	◐	◐	○	○
Wake Alternative 7 Triangle Metro Center to NERC	24	◐	◐	◐	◐	◐	◐	●	●	●	●	●
Wake Alternative 8 Northwest Cary to NERC	18	◐	●	◐	◐	◐	●	◐	●	◐	●	●
Wake Alternative 9 Downtown Cary to NERC	16	●	●	●	◐	◐	●	◐	●	◐	●	●
Wake Alternative 10 State Fairgrounds to NERC	11	●	●	●	◐	◐	●	◐	●	○	●	●
Wake Alternative 11 Downtown Raleigh to NERC	8	◐	●	●	◐	◐	●	○	●	○	○	◐

● = High Performer ◐ = Average Performer ○ = Low Performer = Highest Overall Performing Corridors

Conclusions

Results of the analysis indicate that Wake Alternatives 9 (from Downtown Cary to the Northeast Regional Center) and 10 (from the State Fairgrounds to the Northeast Regional Center) are the overall highest performers. Primary discriminators between the alternatives include mobility and cost-effectiveness, as discussed here:

- Wake Alternatives 9 and 10 have the highest daily rail trip estimates on a per mile basis, with 394 and 402 rail trips per mile respectively. The comparatively stronger ridership is a reflection of the large concentrations of people living within the vicinity of the corridors and the number of dense employment nodes – including downtown Raleigh, NERC, and Cary – that are served by both corridors.

- From a cost perspective, Wake Alternatives 9 and 10 are relatively expensive to build when compared to other corridors on a cost per mile basis. Wake Alternatives 9 and 10 would cost $65M per mile and $67M per mile respectively. The higher cost, as compared with other corridors, can be attributed to more expensive infrastructure needs related to limited right-of-way and required infrastructure improvements, particularly in the vicinity of downtown Raleigh. On a per mile basis, longer corridors can spread out the costs associated with these infrastructure upgrades. Unlike other corridors however, Wake Alternative 9, which is 16 miles and Wake Alternative 10, which is 12 miles, are not long enough to spread out the costs of the infrastructure improvements required in the vicinity of downtown Raleigh.

- Although they are higher on a capital cost per mile basis than other corridors, Wake Alternatives 9 and 10 perform relatively well in terms of cost effectiveness due to their strong ridership. The capital cost per transit trip for Wake Alternative 9 is approximately $54 per trip and the capital cost per transit trip for Wake Alternative 10 is approximately $55 per trip.

While Wake Alternatives 9 and 10 are the overall strongest performers among the Wake corridors, it is recommended that Wake Alternative 8, which extends the transit line an additional 2 miles from downtown Cary to NW Cary, be considered for more detailed study. A terminal station in downtown Cary would be problematic due to limited property available for locating an end-of-line park and ride and a potential transit maintenance or layover facility. A relatively short extension to NW Cary, therefore, would improve the feasibility of this corridor by providing more opportunities to locate a park-and-ride and related transit infrastructure and potentially increasing ridership.

Given these considerations, it is initially recommended that Wake Alternative 8, which travels between Northwest Cary and the Northeast Regional Center, be advanced to a detailed Alternatives Analysis.

Durham-Orange Counties

The project team evaluated a total of six corridors in Durham and Orange counties, the results of which can be seen in Table ES.2. A summary of the findings and a recommendation are provided below.

Table ES.2 Evaluation Criteria Summary (Durham-Orange Counties)

		Mobility	Socioeconomic				Land Use			Financial		
Study Corridor	Corridor Length (mi)	Rail Trips/Mile	Population Density	Employment Density	Low Income Population Density	Minority Population Density	Supports Transit Oriented Development	Activity Centers Served	Development Potential	Capital Cost per Mile	Capital Cost/ Weekday Transit Trip	Operating & Maintenance Cost/ Weekday Transit Trip
Durham-Orange Alternative 1 UNC Hospitals to Wake Forest	59	◐	○	○	◐	◐	●	●	○	●	●	●
Durham-Orange Alternative 2 Duke Medical to Downtown Raleigh	29	○	◐	◐	◐	◐	◐	●	●	●	○	◐
Durham-Orange Alternative 3 UNC Hospitals to Triangle Metro Center	26	◐	○	○	●	●	◐	◐	○	◐	◐	◐
Durham-Orange Alternative 4 UNC Hospitals to Alston Ave	17	●	○	◐	●	●	○	◐	○	○	●	●
Durham-Orange Alternative 5 UNC Hospitals to Gateway	7	●	○	○	◐	○	◐	◐	○	◐	●	◐
Durham-Orange Alternative 6 Gateway to Alston Ave	10	◐	◐	●	●	●	◐	○	○	○	○	○

● = High Performer ◐ = Average Performer ○ = Low Performer ▭ = Highest Overall Performing Corridors

Conclusions

Results of the analysis indicate that Durham-Orange Alternatives 4 (from UNC Hospitals to Alston Avenue), 5 (from UNC Hospitals to Gateway) and 6 (from Gateway to Alston Avenue) are the overall highest performers (note that Alternatives 5 and 6 are subsets of Alternative 4). Primary discriminators between the alternatives include mobility, socio-economics and cost-effectiveness, as discussed here:

- Durham-Orange Alternatives 4 and 5 have the highest daily rail trip estimates on a per mile basis, with 394 and 399 rail trips per mile respectively. This primarily reflects the high employment at UNC and UNC Hospitals, Duke University and Duke Medical Center, and downtown Durham. Several significant mixed-use developments also exist or are planned within the corridor.

- Durham-Orange Alternatives 4 and 6, both of which terminate at Alston Avenue, are the most effective at reaching transit dependent populations.

- From a cost perspective, Durham-Orange Alternatives 4 and 5 are relatively more expensive to build compared to other corridors ($68M per mile and $66M per mile respectively). This is because these corridors are primarily on new alignment that requires more right-of-way acquisition and infrastructure improvements than alternative corridors that use existing railroad right-of-way (e.g., Durham-Orange Alternatives 1 and 2).

- Although they are higher on a capital cost per mile basis than other corridors, Durham-Orange Alternatives 4 and 5 perform better in terms of cost effectiveness due to their strong ridership. The capital cost per transit trip for Durham-Orange Alternative 4 and 5 is approximately $55 and $53 per transit trip, respectively.

Since Durham-Orange Alternative 4 is the combination of Durham-Orange Alternatives 5 and 6, it is recommended that Durham-Orange Alternative 4 be advanced to a detailed Alternatives Analysis.

Durham-Orange Alternative 2 (from Duke Medical Center to downtown Raleigh) was average in terms of socio-economic and strong in land-use factors, but not strong in terms of mobility and costs. Cost-effectiveness would improve if costs could be reduced. The ridership may have been low in part because the ridership model assumed light rail-type service rather than commuter rail-type service, which may be more appropriate for this corridor. For this initial

study, costs assumed light rail transit, which is significantly more expensive than commuter rail, which uses primarily existing infrastructure. For these reasons, it is recommended that the Durham to Raleigh connection be studied as part of a regional rail service that could extend as far east as the Johnston County line.

Other Considerations

With this recommendation, rail transit extensions to the Research Triangle Park, Wake Forest, Apex, and points beyond are not carried forward for further consideration in the more detailed Alternatives Analysis studies. This initial recommendation does not, however, mean that service to these areas would be eliminated; it simply recognizes that they will be studied in greater detail at a later time. These extensions are truly noteworthy as the system expands, but the purpose of this first set of Alternative Analysis studies is to focus on the most effective corridors for initial transit investment and implementation. This is the formula other cities have used to develop and implement system-wide extensions.

Therefore, for those areas of the region that are not directly considered for initial detailed study in the Alternatives Analysis, the project team recommends the following:

- Extension of LRT to Garner: Technical memorandum detailing the future extension of the rail transit service from Raleigh to Garner.

- Extensions of commuter rail to Wake Forest and Apex: Technical memorandums analyzing implementation of commuter rail service to Wake Forest and Apex. (This has been suggested by CAMPO as a viable alternative). Considerations could include the following: termini, freight alignments, operations, and cost.

- Extension to Carboro: Technical memorandum analyzing the immediate needs of the Town of Carrboro. It is recommended that a separate study be conducted on potential route alignment extension(s) including order of magnitude costs for an initial phase extension (i.e. possibly Franklin Street) along with discussions how this alignment will operate in conjunction with the initial segment of the light rail corridor in the Alternatives Analysis.

- Extension of commuter rail service to Hillsboro and Zebulaon: There have been requests for extensions to both Hillsboro and to Zebulon to be included in the study. The purpose of the Transitional Analysis is to determine the priority corridors for early implementation, but not preclude future extensions. White papers further discussing these two extensions are included as Appendix A and B.

When completed, the memorandums will be included as Appendices to this Transitional Analysis before it is finalized. These memorandums, along with the results of the Alternatives Analysis process can be used by both the Capital Area MPO and the Durham-Chapel Hill-Carrboro MPO as input to the updates of their respective long range transportation plans.

NEXT STEPS

On September 29, 2010 there will be a special joint meeting of the Durham-Chapel Hill-Carrboro MPO and the Capital Area MPO to review this study and endorse corridors for study in the Alternatives Analysis.

CHAPTER 1. INTRODUCTION

Triangle Transit has commissioned a major study to initiate fixed-guideway transit service within Wake, Durham, and Orange counties. The Triangle Regional Transit Program (TRTP) is a collaborative framework for developing an efficient and sustainable regional transportation system that addresses the Triangle's critical need for improved connectivity and mobility choices while promoting its economic prosperity, job growth, and an enhanced quality of life. While previous transportation plans for the region have recommended the introduction of fixed-guideway transit, this study is significant due to the passage of HB 148 by the North Carolina General Assembly, which authorizes Durham, Orange, and Wake counties to hold referendums that, if passed, would allow each county to levy a ½ percent sales tax increase to fund improvements in public transportation.

1.1 STUDY PROCESS

The studies being conducted over the next year will recommend which transit corridors should initially be built. Planning work being undertaken includes two phases:

Phase 1: A system-level Transitional Analysis, which is the subject of this report, will define and prioritize up to three transit corridors from the adopted 2035 Joint Long Range Transportation Plan (LRTP) to be studied in further detail in the Phase 2 Alternatives Analysis process. Given the geography of the region, including three counties and two Metropolitan Planning Organizations (MPOs), it is anticipated that one corridor within each of the MPO areas will be carried forward into the Alternatives Analysis process. A third commuter rail corridor spanning the region is possible as an early implementation project, with potential collaboration with the North Carolina Railroad and NCDOT.

Phase 2: Triangle Transit will conduct Alternatives Analysis studies for up to three priority corridors to evaluate and screen alternative alignments, modes and station locations within each corridor. The Alternatives Analysis process will conclude with the selection and MPO adoption of a Locally Preferred Alternative for each of the priority corridors. The Alternatives Analysis process is a requirement of the Federal Transit Administration (FTA) for a fixed-guideway project to be eligible for federal funds.

It is unlikely that all fixed-guideway transit corridors in the LRTP can be implemented in the near-term, even with a sales tax increase. It is expected that corridors not included in the Phase 2 Alternatives Analysis studies would be implemented in later phases. Fixed-guideway transit projects would also be complemented by improvements and expansion to regional and local bus services so that all communities in the region have improved transit access. Improvements to bus service could begin soon after the referendum if voters approve a ½ percent sales tax increase.

1.1.1 PUBLIC AND STAKEHOLDER INVOLVEMENT

Triangle Transit has developed a comprehensive Public Involvement Plan (PIP) for the project development process. The PIP details how the public and stakeholders will be involved in project development, including:

- **Public Workshops -** Three series of public workshops are planned throughout the project's duration in localities throughout the region (six workshops will be held in each of the workshop series). The first set of workshops was held at the end of June and beginning of July 2010, the second will be in September 2010, and the third set of workshops is planned for February 2011.

- **MPO Coordination -** The Technical Advisory Committees (TAC) and the Technical Coordinating Committees (TCC) of each of the two MPOs are functioning as the technical and policy committees for the project. These committees will be consulted on a regular basis to provide feedback and input on project development.

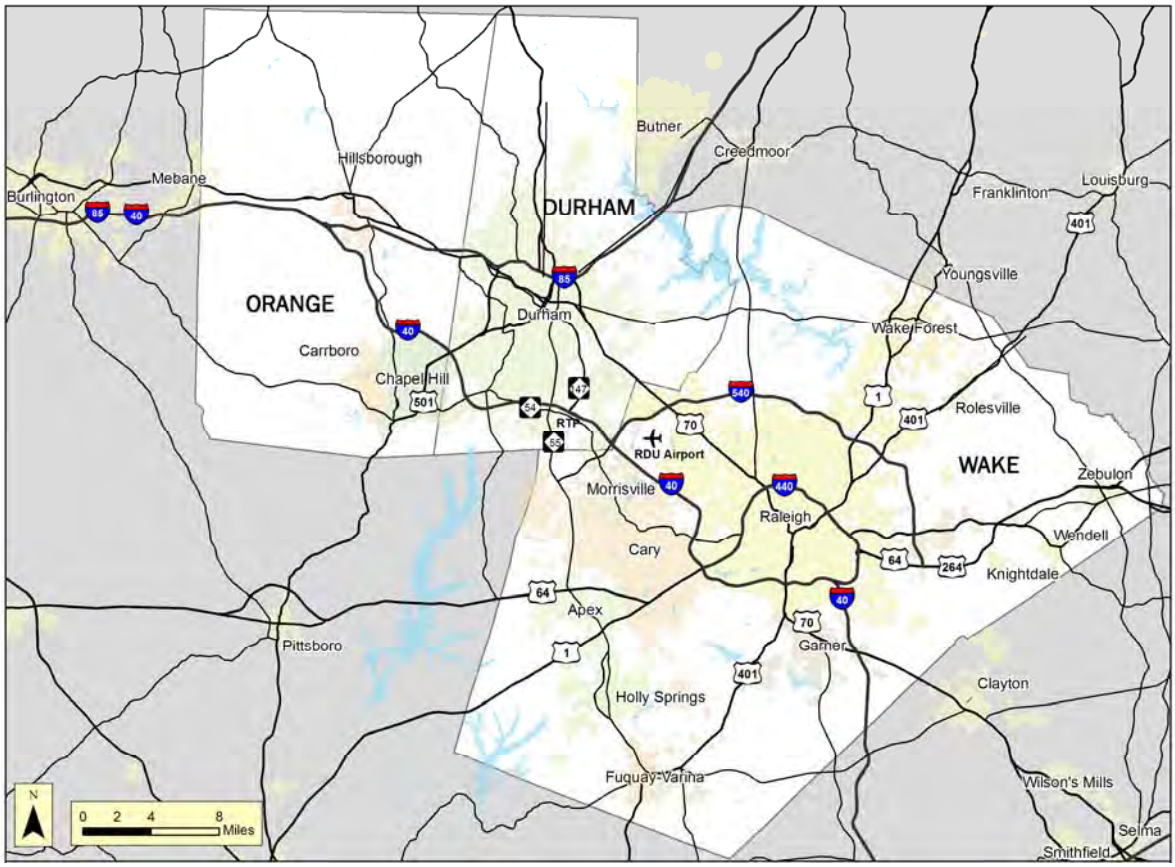
- **Elected Officials Coordination -** A group comprised of the mayors of the region's four largest cities, County Commissioners of the region's three counties, representatives of the region's two MPOs, and the chair of the Triangle Transit Board of Trustees meet on a regular basis to collect information and provide feedback. These elected officials will be consulted on a regular basis to provide feedback and input on project development.

- **Other Outreach -** The public will have many ways to gather information and provide input on the project outside of the public workshops, including through the project website (www.ourtransitfuture.com), a call-in number (800-816-7817), an e-mail inbox dedicated to the project (info@ourtransitfuture.com), and a mailing address (PO Box 530, Morrisville, NC 27560).

1.2 BACKGROUND

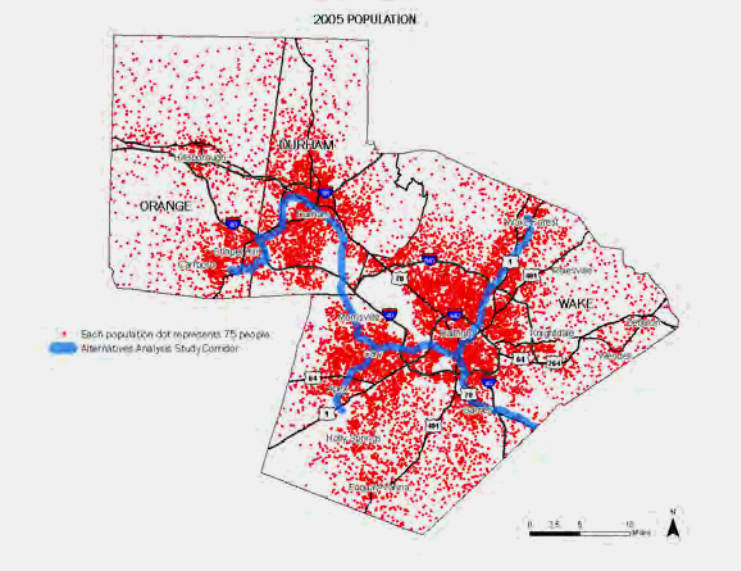
The Triangle Region is unique and complex, with a polycentric urban pattern that includes several sizeable downtowns, four major universities, three major medical centers, and many satellite communities, with travel and economic patterns that link them to the region's core counties of Durham, Orange and Wake (see Figure 1.1). Raleigh-Durham International Airport (RDU) and the Research Triangle Park (RTP) draw traffic to the center of the region.

Figure 1.1 The Triangle Region



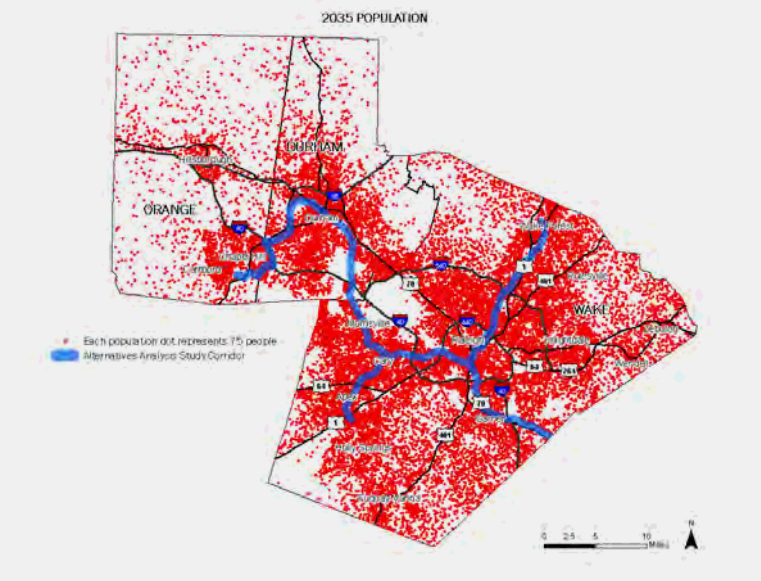
The Triangle Region has experienced tremendous growth over the last few decades. The region is now home to 1.5 million people, and the population is expected to increase to 2.5 million people by 2035, as illustrated in Figures 1.2 and 1.3. While this growth has yielded many benefits to residents and visitors, it has also strained the region's transportation system. High levels of congestion are now common-place and are anticipated to worsen with time. Significantly increasing highway capacity, in order to accommodate the surge in travel demand, is no longer an option for environmental, financial, and community reasons. Many elected officials and the general public have come to recognize that a multi-modal transportation system, including improved transit and rail service, is needed if the Triangle is to continue to attract quality jobs and maintain the high quality of life it now enjoys.

Figure 1.2 Triangle Region 2005 Population



Source: Triangle Region Travel Demand Model

Figure 1.3 Triangle Region Projected Population (2035)



Source: Triangle Region Travel Demand Model

CHAPTER 2. RELATIONSHIP TO PREVIOUS PLANS AND INITIATIVES

Planning for fixed-guideway transit in the Triangle Region began twenty years ago and a number of transit studies have been conducted to advance major transit investments in the area. The Phase 1 Transitional Analysis and Phase 2 Alternatives Analysis studies build on these previous plans and initiatives, as described below.

2.1.1 REGIONAL RAIL PROJECT

The most advanced planning to date was the Regional Rail Project. In 1998, the FTA authorized Preliminary Engineering (PE) and preparation of an Environmental Impact Statement (EIS) for the Regional Rail Project.

The Regional Rail Project planned for the Triangle Region included 35 miles of separate double track and 16 stations, extending from Duke Medical Center through Durham, Morrisville, Cary, Raleigh and terminating at Spring Forest Road in north Raleigh. The proposed vehicle was an FRA compliant Diesel Multiple Unit (DMU) technology operating in existing freight corridors [North Carolina Railroad (NCRR) and CSX]. The Final EIS and Preliminary Engineering were concluded in 2003, with the FTA issuing the environmental Record of Decision (ROD), and subsequently authorizing Triangle Transit to enter the Final Design phase in February 2003.

Midway through the Final Design phase, construction cost estimates dramatically increased and ridership modeling did not reach a level of maturity that would meet the FTA criteria for funding. As a result, the project was scaled back to a 28 mile, 12 station alignment in an attempt to maintain the desired cost-effectiveness for the project. The revised alignment did not include the segment between Duke Medical Center and 9th Street in Durham and the segment north of the Government Center in downtown Raleigh. After numerous attempts to right-size the project, it became apparent that the project would not qualify for a federal Full Funding Grant Agreement (FFGA), and there was not sufficient local funding available to support the project.

Based on the inability to meet FTA's revised project cost-effectiveness and issues with the overall financial plan, Triangle Transit withdrew the Regional Rail Project from the FTA New Starts program in August 2006.

2.1.2 REGIONAL TRANSIT VISION PLAN

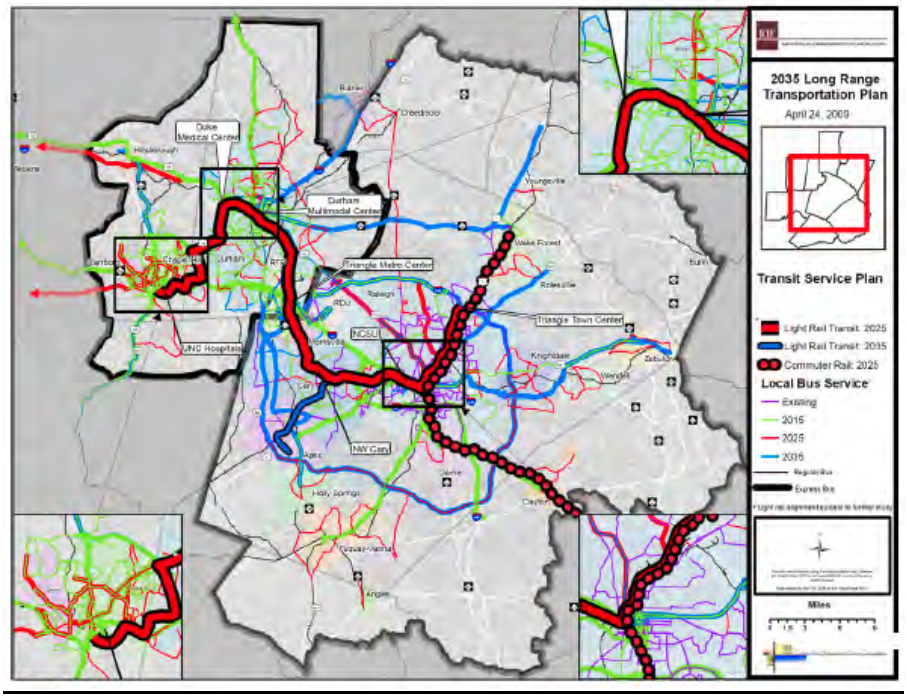
In early 2007, in anticipation of the preparation of the Triangle Region's LRTP, a Special Transit Advisory Commission (STAC) was convened to make recommendations on the future of regional transit in the Triangle. This was a cooperative regional effort of a broad-based citizen group with representatives from throughout the region. In addition to providing the basis for the plan ultimately adopted by the region's two MPOs, the group also considered additional corridors within and beyond the Triangle (including extending service to Raleigh Durham International Airport, commuter rail to Hillsborough and farther west, Fayetteville to the south, and other locations. The conclusion was that these corridors are not immediate priorities for the region as they have poor ridership potential, are dependent on a core system, and are not affordable in the near term in absence of such a core system.

The STAC evaluated updated planning data in a series of 16 meetings over 13 months. Their recommendations to the MPOs included enhanced bus service, local circulators, and 62 miles of fixed-guideway projects. The STAC also recommended that the region pursue a ½ percent sales tax local funding option in order to advance the implementation of these major transit capital investments. The STAC reported their findings in the Regional Transit Vision Plan, published in May 2008. This became the baseline for the transit element of the MPO's Joint 2035 LRTP.

2.1.3 JOINT LONG RANGE TRANSPORTATION PLAN

The current transit plan is one element of the LRTP prepared by the region's two MPOs. This joint LRTP was adopted by the Durham-Chapel Hill-Carrboro MPO, representing Durham and Orange counties, on May 13, 2009, and by the Capital Area MPO, representing Wake County, on May 20, 2009. The MPOs' plan has identified a phased implementation of the adopted plan through 2035, but this implementation is not based on detailed analysis or funding availability. Fixed-guideway and bus transit service from the 2035 LRTP is shown below in Figure 2.1.

Figure 2.1 2035 Joint LRTP Transit Service Plan



2.1.4 NC HOUSE BILL 148

In August of 2009, the NC Legislature passed House Bill 148 that established the Congestion Relief and Intermodal 21st Century Transportation Fund, enabling the six counties in North Carolina with the highest rate of population growth (including the Triangle) to hold referenda for a local ½ percent sales tax option to help fund local public transportation projects. Annual vehicle registrations may also be increased up to $10 to fund such projects without a referendum.

CHAPTER 3. TRANSITIONAL ANALYSIS PROCESS

The primary purpose of the Transitional Analysis is to define the corridor(s) for inclusion in the Alternatives Analysis studies. The starting point for defining corridors is the adopted LRTPs of the region's two MPOs. In this region, the two MPOs have adopted a joint LRTP, and the transit element of that LRTP is considered the system plan for transit in the region. The Transitional Analysis acts as the bridge between the system plan in the LRTP and the more focused and detailed study performed in an Alternatives Analysis.

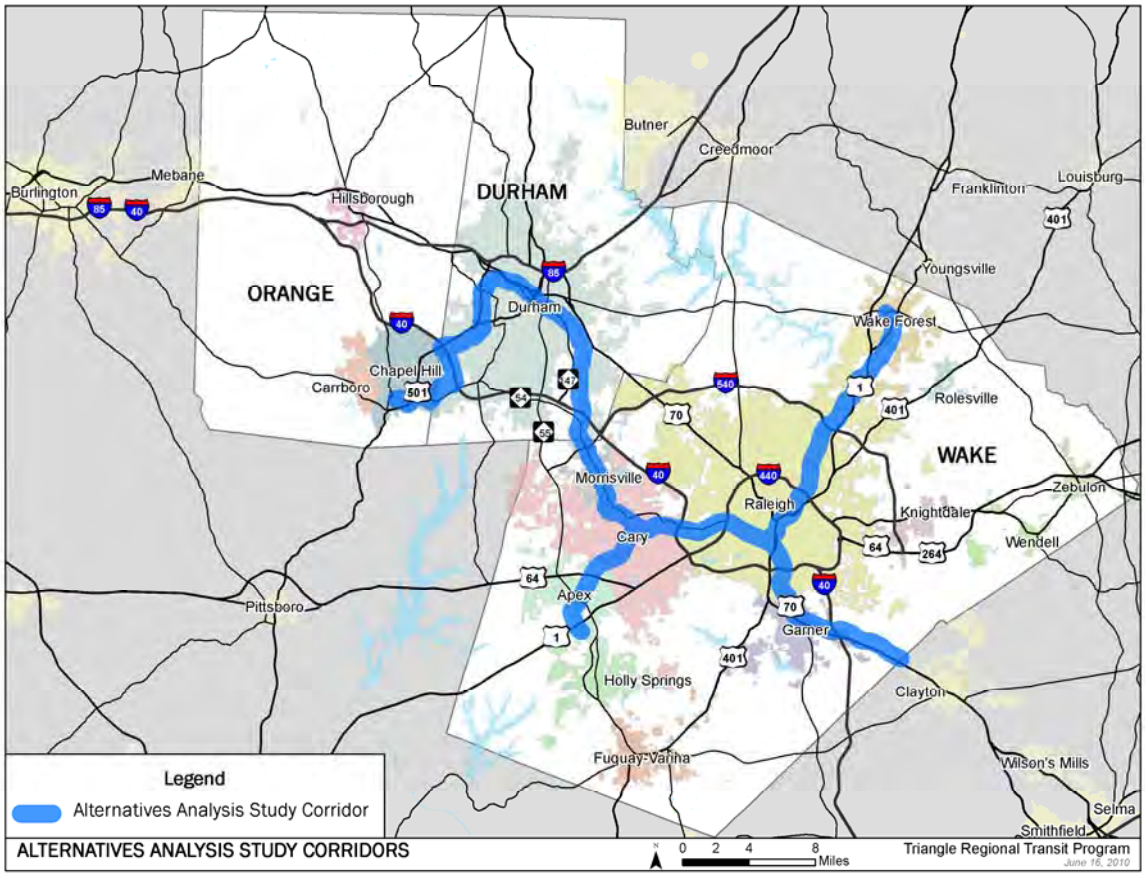
The current LRTP for each MPO contains a rail system plan (shown in Figure 2.1 with planned bus service) that extends from Wake Forest to Downtown Raleigh, Cary, the RTP, Downtown Durham, Duke Medical Center, Gateway East (Orange/Durham County line), Leigh Village, and the UNC Hospitals. Additional corridors extend from downtown Raleigh to Clayton and from Cary through Apex to the proposed Veridea development located south of US 1 and west of NC 55.

For the Transitional Analysis, this system plan has been broken down into a set of smaller corridors that have been evaluated in order to recommend a limited number of priority corridors to move forward into the Alternatives Analysis process. This Transitional Analysis applies a set of evaluation criteria and measures to each corridor for evaluation and prioritization of the corridors moving forward into the Alternatives Analysis process. For the purposes of this analysis, a corridor consists of a relatively wide band up to one mile wide with major activity centers identified. Typical activity centers include the Northeast Regional Center (NERC), Downtown Raleigh, NC State Fairgrounds, Cary, RTP, Downtown Durham, and Gateway East. This is not an inclusive list of the centers but provides examples for illustration. In the detailed Alternatives Analysis, the exact number and locations of stations will be identified and an activity center may contain one or more stations.

CHAPTER 4. CORRIDORS CONSIDERED

This section describes the eighteen corridors that were evaluated in this study. Using the 2035 Joint LRTP for both the Capital Area MPO and the Durham-Chapel Hill-Carrboro MPO (see Figure 4.1) as well as input from Triangle Transit, both MPO's, and other stakeholders, eighteen corridors were created for screening: 11 for Wake County, 6 for Durham and Orange Counties, and 1 commuter rail-style corridor alternative for Durham and Wake Counties. This corridor, which extends from the Johnston County Line to the vicinity of Hillandale Road in Durham, is not evaluated in this Transitional Analysis. The entire corridor will be studied in a subsequent Alternative Analysis, comparing both light rail and commuter rail technologies. A region-wide corridor is included as a Wake Alternative and a Durham-Orange Alternative for comparative analysis, though the corridors (Wake 1 and Durham-Orange 1) differ only by nomenclature.

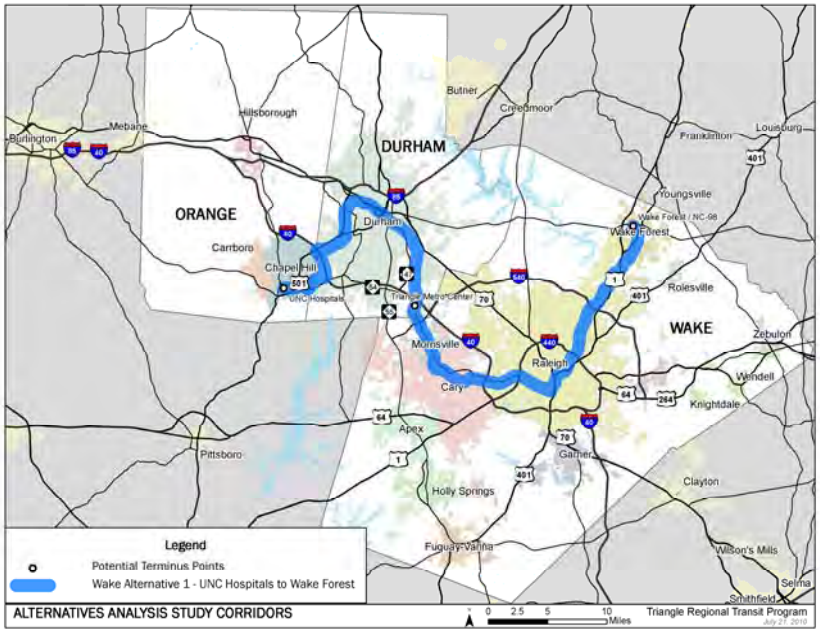
Figure 4.1 Transitional Analysis Study Corridors (Derived from 2035 LRTP)



4.1 WAKE CORRIDOR ALTERNATIVES

4.1.1 WAKE ALTERNATIVE 1 – UNC HOSPITALS TO WAKE FOREST

Figure 4.2 Wake Alternative 1 – UNC Hospitals to Wake Forest



This 59 mile corridor extends from UNC Hospitals in Chapel Hill north to Durham, then south through the Research Triangle Park to Morrisville, Cary, and Raleigh before turning north to Wake Forest. This corridor would serve the region's four largest cities, the Research Triangle Park, and the region's major research universities. This corridor assumes the construction of rail transit in Durham and Orange Counties, from UNC Hospitals to the Triangle Metro Center (TMC), and is used as a baseline comparison to the other Wake alternatives.

Major Activity Centers

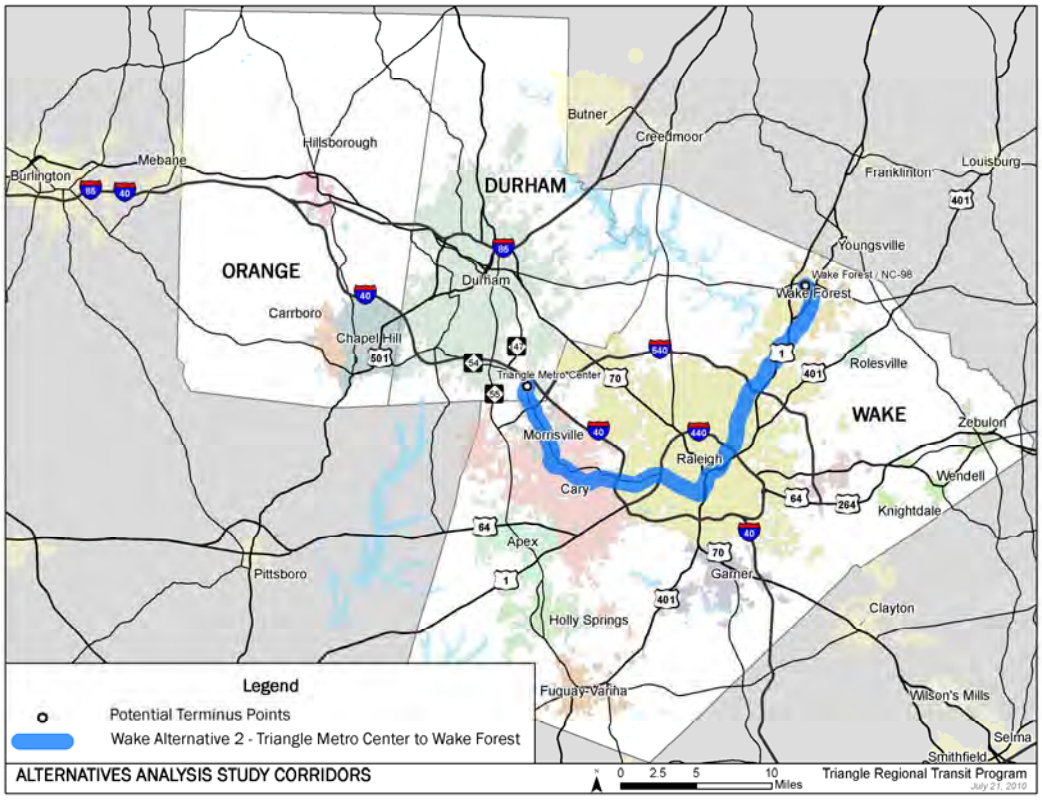
- Urban Centers: Downtown Chapel Hill, Durham, Cary, Raleigh, and Wake Forest
- Colleges and Universities: UNC, Duke University, NC Central University, Meredith College, NC State University, and Peace College
- Suburban Employment Areas and Special Activity Centers: UNC Hospitals, the NC 54 Corridor (including Glenn Lennox, East 54, UNC's Friday Center, Meadowmont, and Leigh Village), Development around I-40 and US 15-501 (including Gateway East, Patterson Place, and South Square), Duke Hospitals, Research Triangle Park, State Fairgrounds Complex, State Government Offices, and the Northeast Regional Center

Bus Transit Integration

- The corridor is served by CAT, Wolfline, C-Tran, DATA, Chapel Hill Transit, and Triangle Transit.

4.1.2 WAKE ALTERNATIVE 2 – TRIANGLE METRO CENTER TO WAKE FOREST

Figure 4.3 Wake Alternative 2 – Triangle Metro Center to Wake Forest



This 33 mile corridor extends from the Triangle Metro Center adjacent to I-40 and Miami Blvd south to Cary before heading east to downtown Raleigh, then turning north and traveling through North Raleigh to downtown Wake Forest. This corridor assumes a complete buildout of rail transit from the Research Triangle Park to Wake Forest. This alternative does not include or assume a rail connection to Durham.

Major Activity Centers

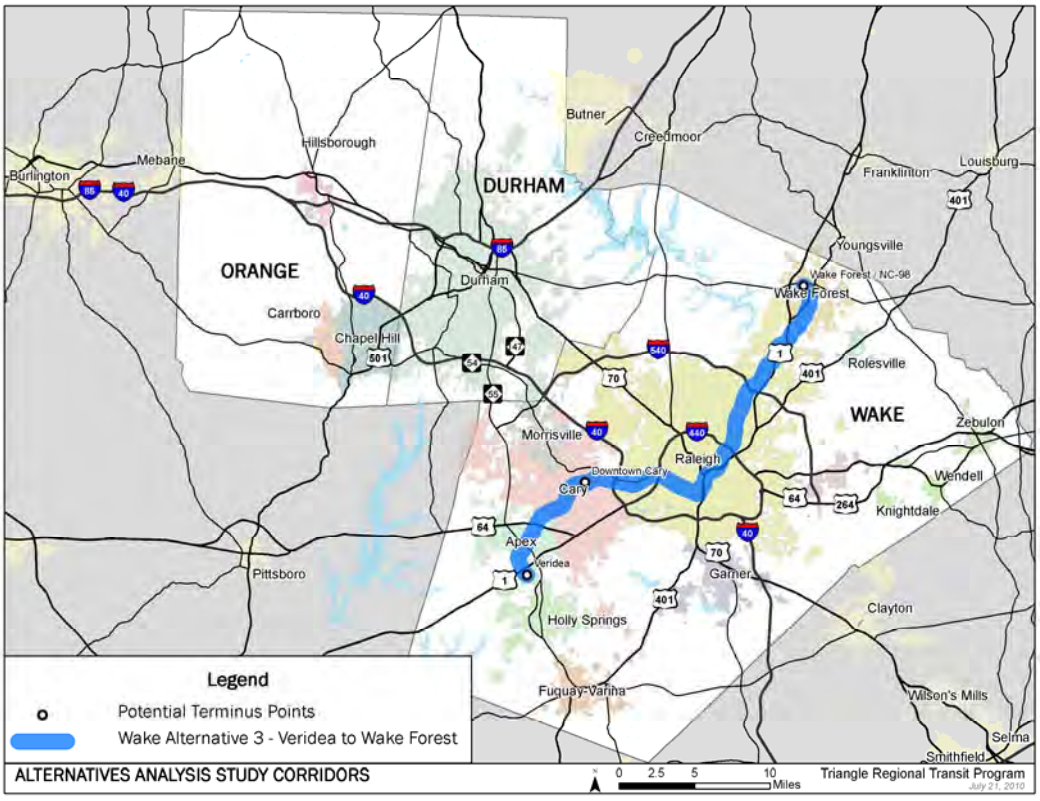
- Urban Centers: Downtown Cary, Raleigh, and Wake Forest
- Colleges and Universities: Meredith College, NC State University, and Peace College
- Suburban Employment Areas and Special Activity Centers: Research Triangle Park, State Fairgrounds Complex, State Government Offices, and the Northeast Regional Center

Bus Transit Integration

This corridor is served by CAT, Wolfline, C-Tran, and Triangle Transit

4.1.3 WAKE ALTERNATIVE 3 – VERIDEA TO WAKE FOREST

Figure 4.4 Wake Alternative 3 – Veridea to Wake Forest



This 33 mile corridor serves Apex, Cary, Raleigh, and Wake Forest. This corridor extends from Veridea (a proposed mixed-use development south of central Apex) to Apex, Cary, Raleigh, and Wake Forest.

Major Activity Centers

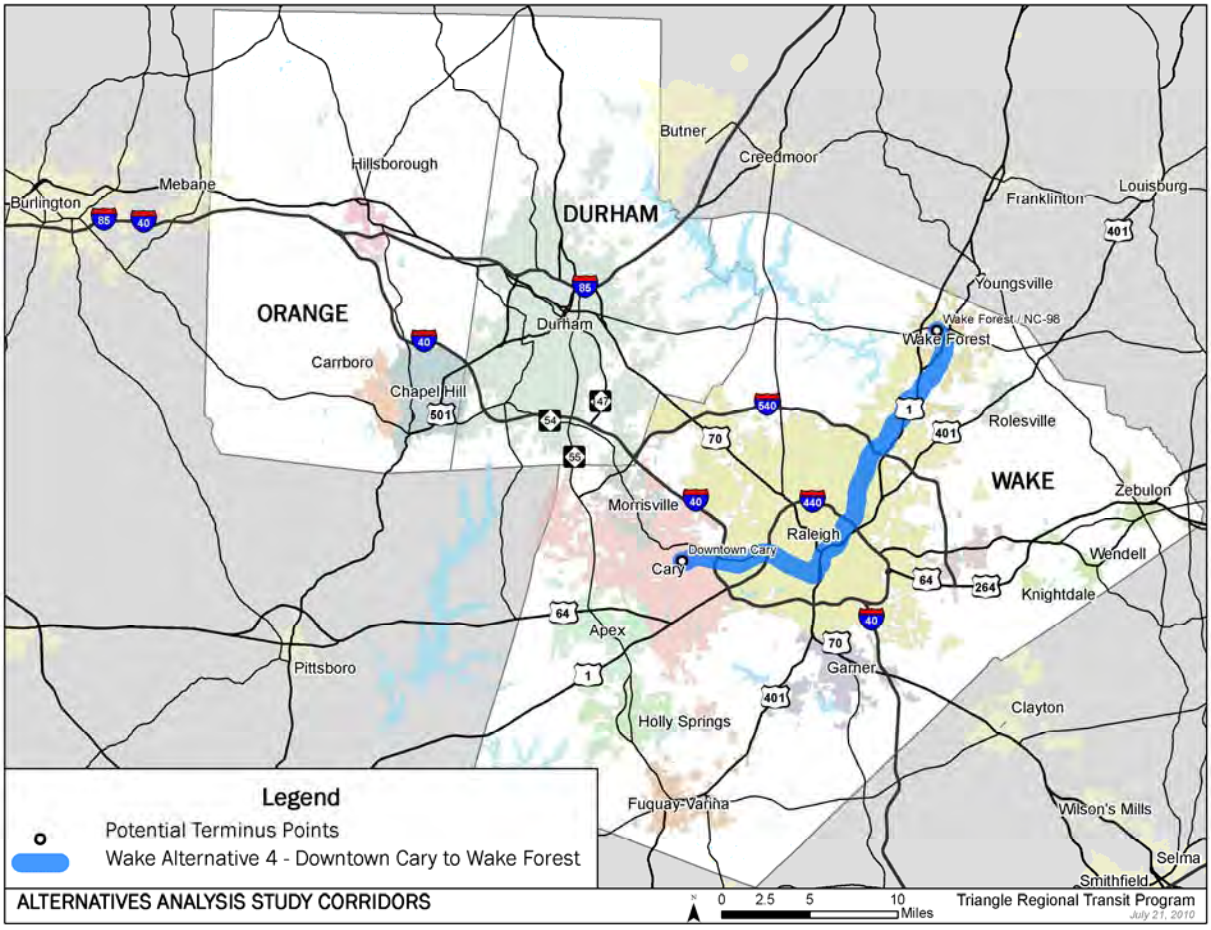
- Urban Centers: Downtown Apex, Cary, Raleigh, and Wake Forest
- Colleges and Universities: Meredith College, NC State University, and Peace College
- Suburban Employment Areas and Special Activity Centers: The State Fairgrounds Complex, State Government Offices, and the Northeast Regional Center

Bus Transit Integration

- This corridor is served by CAT, Wolfline, C-Tran, and Triangle Transit.

4.1.4 WAKE ALTERNATIVE 4 – DOWNTOWN CARY TO WAKE FOREST

Figure 4.5 Wake Alternative 4 – Downtown Cary to Wake Forest



This 25 mile corridor extends east from Downtown Cary to Downtown Raleigh before heading north through the Northeast Regional Center to Wake Forest.

Major Activity Centers

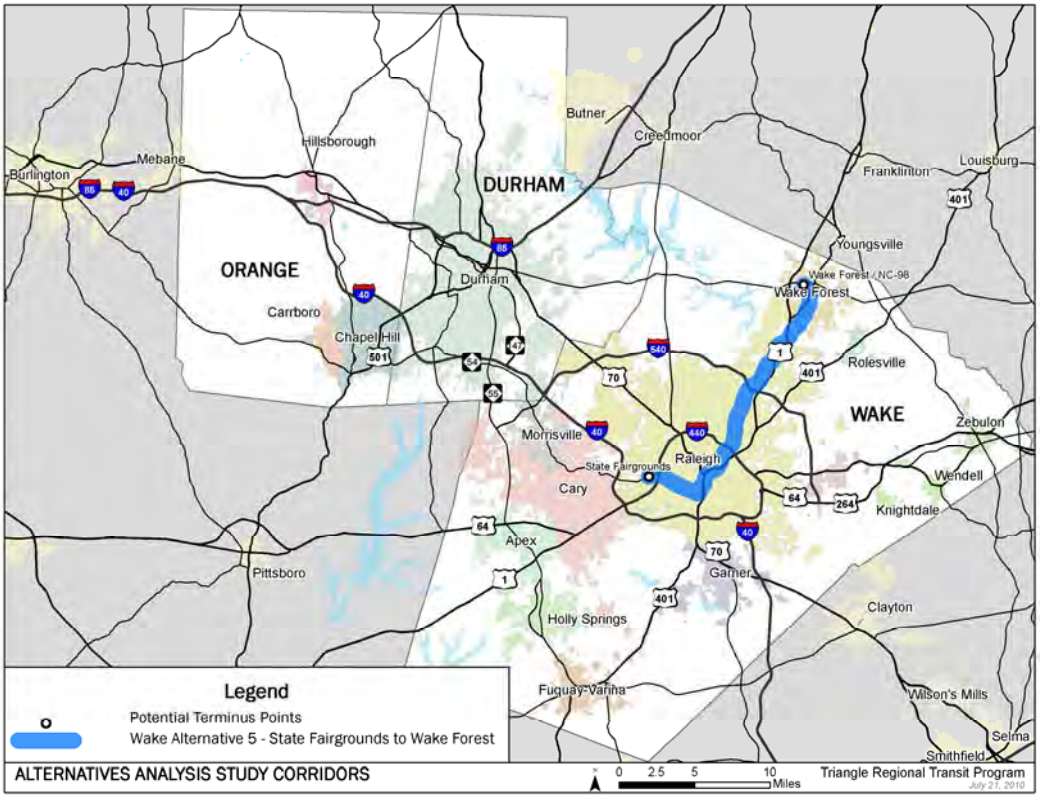
- Urban Centers: Downtown Cary, Raleigh, and Wake Forest
- Colleges and Universities: Meredith College, NC State University, and Peace College
- Suburban Employment Areas and Special Activity Centers: The State Fairgrounds Complex, State Government Offices, and the Northeast Regional Center

Bus Transit Integration

- This corridor is served by CAT, Wolfline, C-Tran, and Triangle Transit.

4.1.5 WAKE ALTERNATIVE 5 – STATE FAIRGROUNDS TO WAKE FOREST

Figure 4.6 Wake Alternative 5 – State Fairgrounds to Wake Forest



This 20 mile corridor extends from the State Fairgrounds in West Raleigh through Downtown Raleigh, then north to Wake Forest.

Major Activity Centers

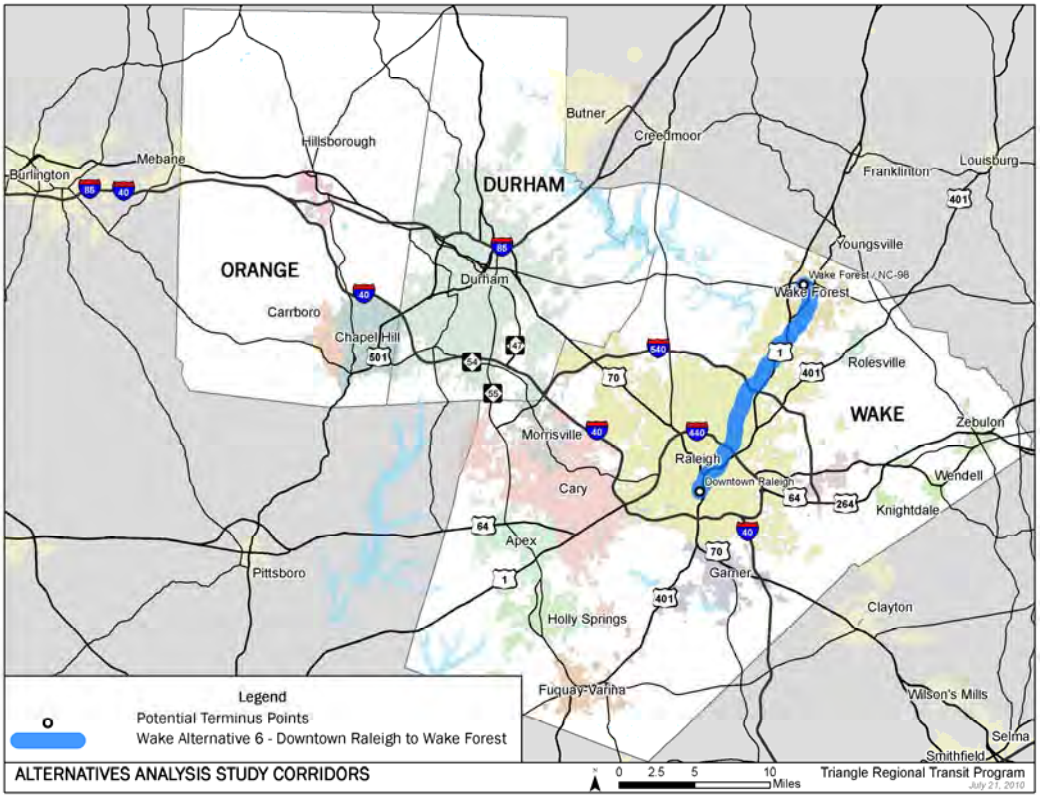
- Urban Centers: Downtown Raleigh and Wake Forest
- Colleges and Universities: Meredith College, NC State University, and Peace College
- Suburban Employment Areas and Special Activity Centers: The State Fairgrounds Complex, State Government Offices, and the Northeast Regional Center

Bus Transit Integration

- This corridor is served by CAT, Wolfline, and Triangle Transit.

4.1.6 WAKE ALTERNATIVE 6 – DOWNTOWN RALEIGH TO WAKE FOREST

Figure 4.7 Wake Alternative 6 – Downtown Raleigh to Wake Forest



This 17 mile Corridor extends from Downtown Raleigh through the Northeast Regional Center (NERC), then North to Wake Forest.

Major Activity Centers

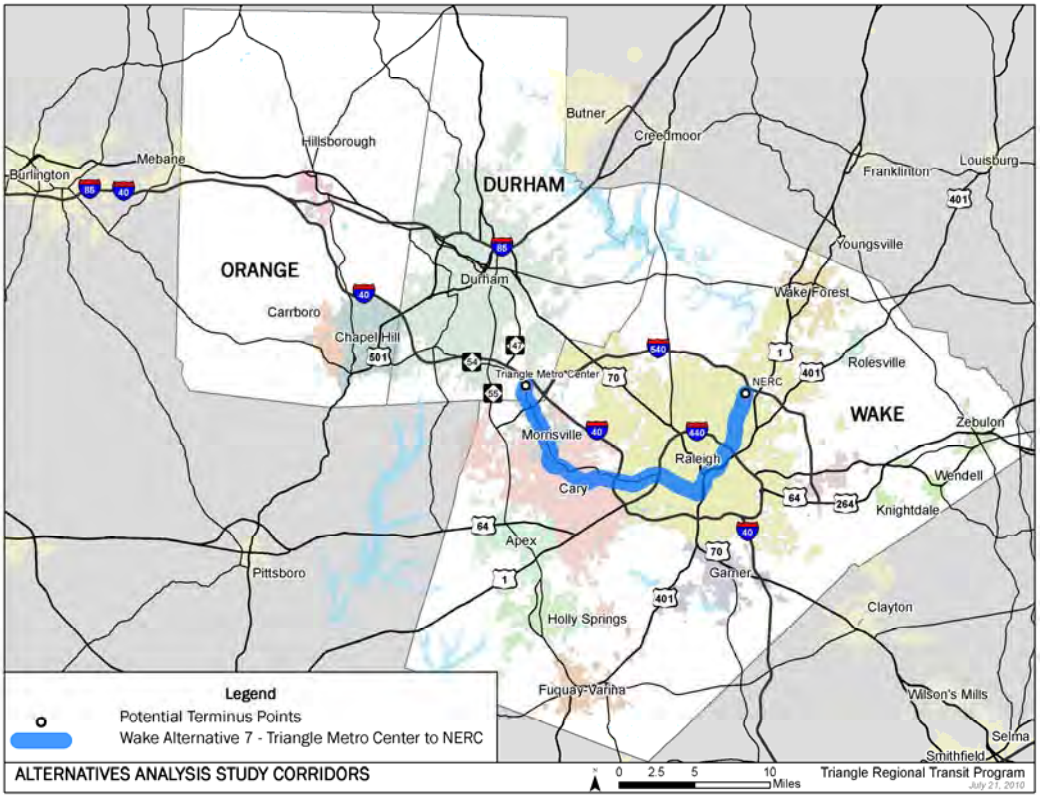
- Urban Centers: Downtown Raleigh and Wake Forest
- Colleges and Universities: Peace College
- Suburban Employment Areas and Special Activity Centers: State Government Offices and the Northeast Regional Center

Bus Transit Integration

- This corridor is served by CAT and Triangle Transit.

4.1.7 WAKE ALTERNATIVE 7 – TRIANGLE METRO CENTER TO NERC

Figure 4.8 Wake Alternative 7 – Triangle Metro Center to NERC



This 24 mile corridor extends from the Triangle Metro Center in the Research Triangle Park (RTP), south through Downtown Cary and Downtown Raleigh, turning north to the Northeast Regional Center adjacent to I-540.

Major Activity Centers

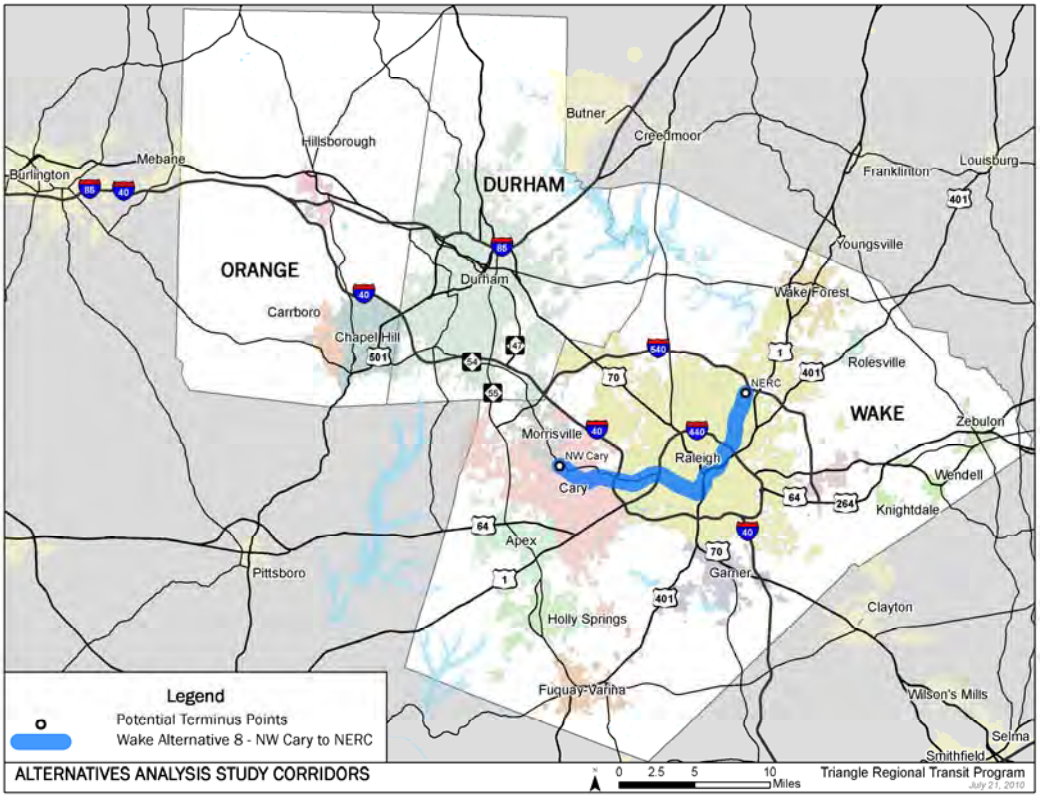
- Urban Centers: Downtown Cary and Raleigh
- Colleges and Universities: Meredith College, NC State University, and Peace College
- Suburban Employment Areas and Special Activity Centers: RTP, the State Fairgrounds Complex, State Government Offices, and the Northeast Regional Center.

Bus Transit Integration

- This corridor is served by CAT, C-Tran, Wolfline, and Triangle Transit.

4.1.8 WAKE ALTERNATIVE 8 – NORTHWEST CARY TO NORTHEAST REGIONAL CENTER (NERC)

Figure 4.9 Wake Alternative 8 – Northwest Cary to Northeast Regional Center (NERC)



This 18 mile corridor extends from Northwest Cary through Downtown Cary and Raleigh to the Northeast Regional Center adjacent to I-540.

Major Activity Centers

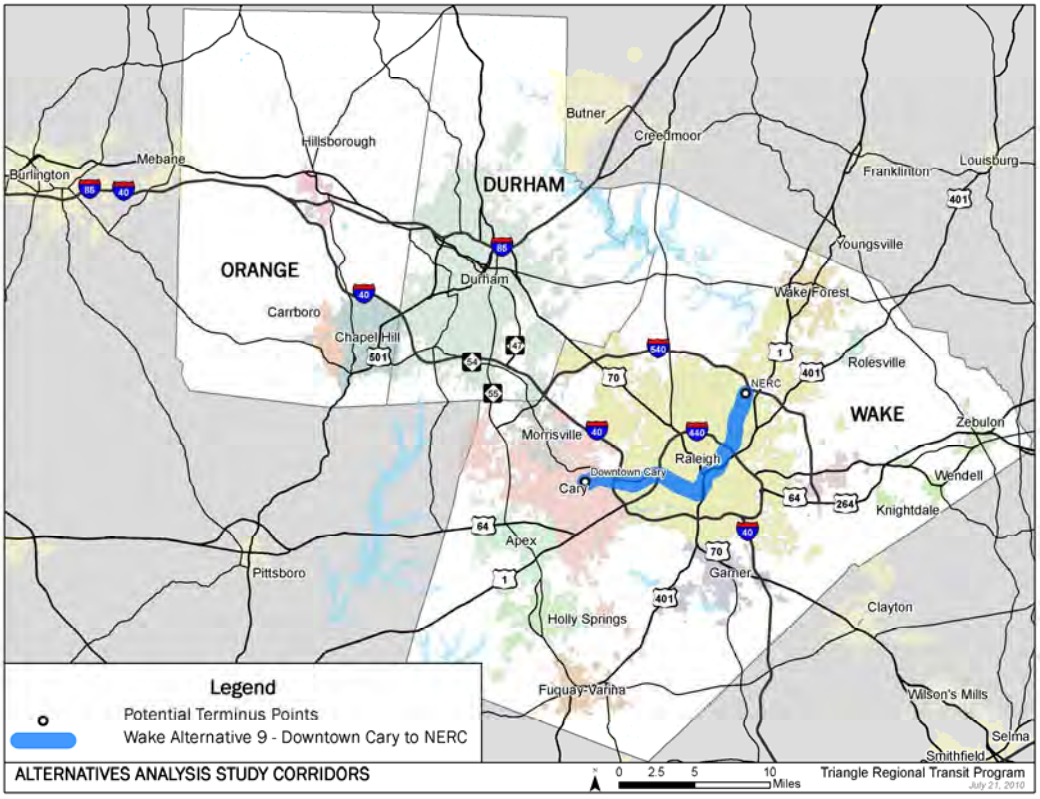
- Urban Centers: Downtown Cary and Raleigh
- Colleges and Universities: Meredith College, NC State University, and Peace College
- Suburban Employment Areas and Special Activity Centers: The State Fairgrounds Complex, State Government Offices, and the Northeast Regional Center

Bus Transit Integration

- This corridor is served by CAT, Wolfline, C-Tran, and Triangle Transit.

4.1.9 WAKE ALTERNATIVE 9 – DOWNTOWN CARY TO NERC

Figure 4.10 Wake Alternative 9 – Downtown Cary to NERC



This 16 mile corridor extends from downtown Cary to downtown Raleigh, then to the Northeast Regional Center adjacent to I-540.

Major Activity Centers

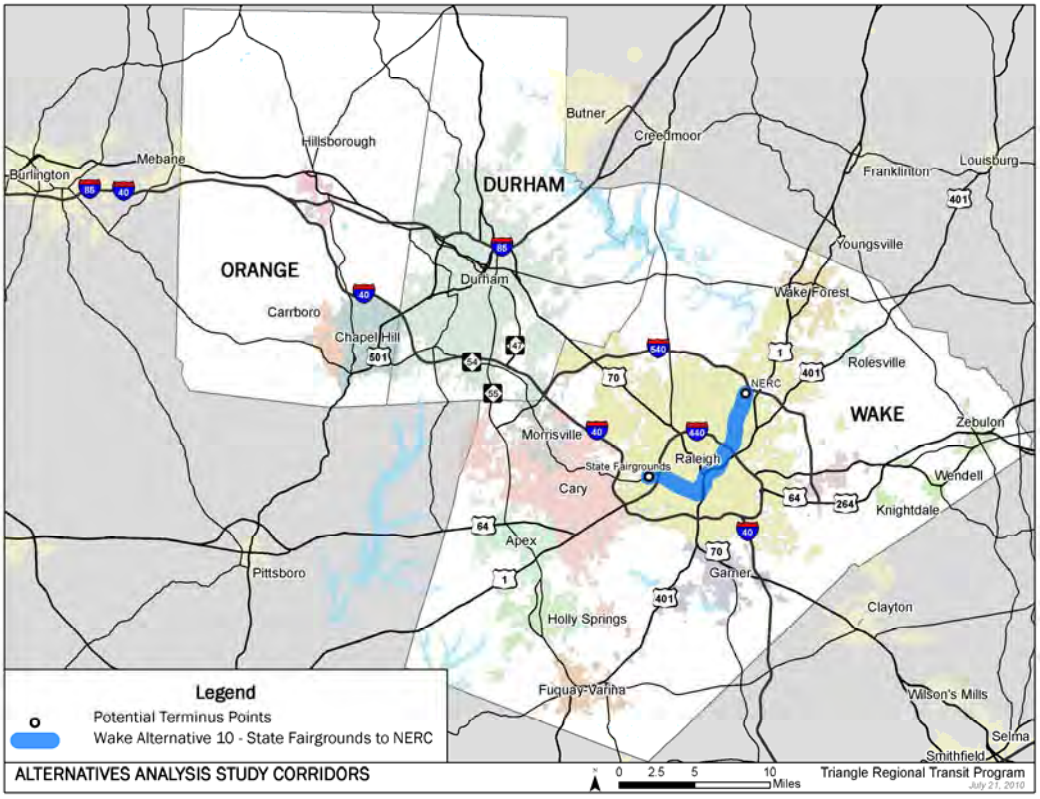
- Urban Centers: Downtown Cary and Raleigh
- Colleges and Universities: Meredith College, NC State University, and Peace College
- Suburban Employment Areas and Special Activity Centers: The State Fairgrounds Complex, State Government Offices, and the Northeast Regional Center

Bus Transit Integration

- This corridor is served by CAT, Wolfline, C-Tran, and Triangle Transit.

4.1.10 WAKE ALTERNATIVE 10 – STATE FAIRGROUNDS TO NERC

Figure 4.11 Wake Alternative 10 – State Fairgrounds to NERC



This 11 mile corridor extends from the State Fairgrounds through NC State University and Downtown Raleigh before turning north to the Northeast Regional Center adjacent to I-540.

Major Activity Centers

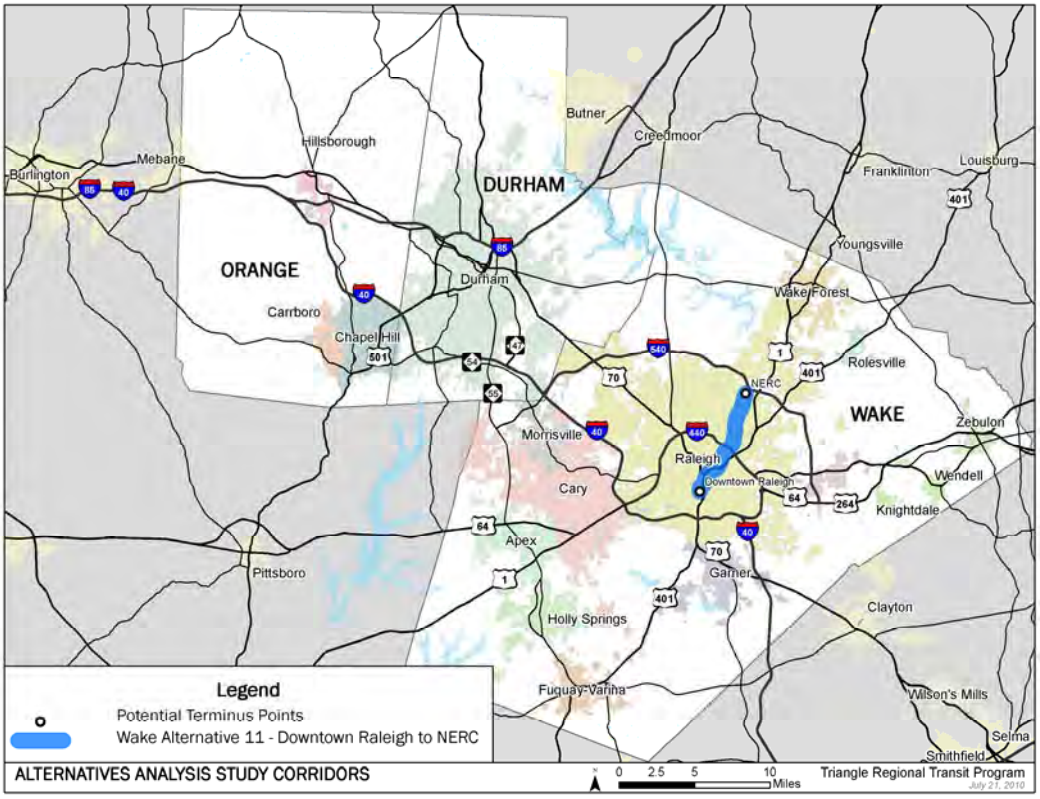
- Urban Centers: Downtown Raleigh
- Colleges and Universities: Meredith College, NC State University, and Peace College
- Suburban Employment Areas and Special Activity Centers: The State Fairgrounds Complex, State Government Offices, and the Northeast Regional Center

Bus Transit Integration

- This corridor is served by CAT, Wolfline, and Triangle Transit.

4.1.11 WAKE ALTERNATIVE 11 – DOWNTOWN RALEIGH TO NERC

Figure 4.12 Wake Alternative 11 – Downtown Raleigh to NERC



This 8 mile corridor extends from Downtown Raleigh through North Raleigh to the Northeast Regional Center adjacent to I-540.

Major Activity Centers

- Urban Centers: Downtown Raleigh
- Colleges and Universities: Peace College
- Suburban Employment Areas and Special Activity Centers: State Government Offices and the Northeast Regional Center

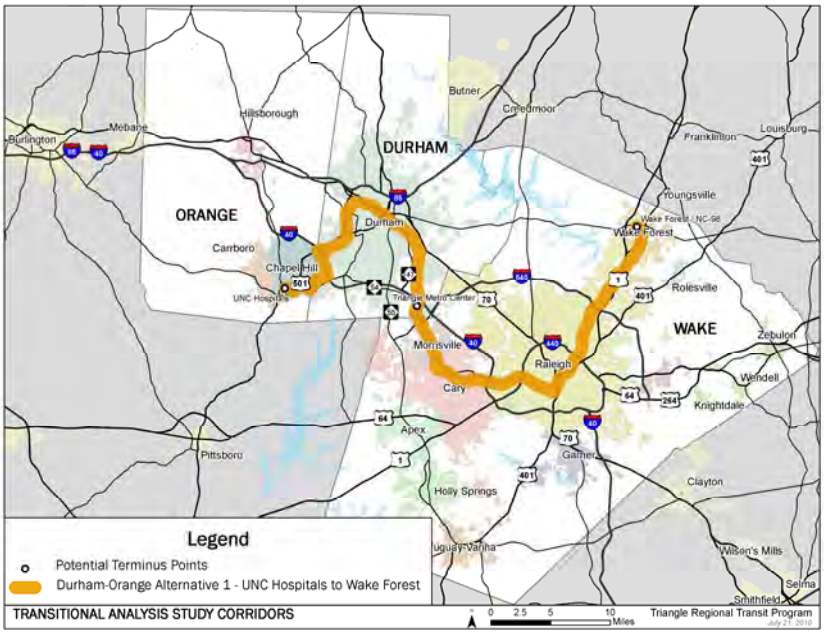
Bus Transit Integration

- This corridor is served by CAT and Triangle Transit.

4.2 DURHAM-ORANGE CORRIDOR ALTERNATIVES

4.2.1 DURHAM-ORANGE ALTERNATIVE 1 – UNC HOSPITALS TO WAKE FOREST

Figure 4.13 Durham-Orange Alternative 1 – UNC Hospitals to Wake Forest



This 59 mile corridor extends from UNC Hospitals in Chapel Hill north to Durham, then south through the Research Triangle Park, Morrisville, Cary, and Raleigh before turning north through Raleigh to Wake Forest. This corridor would serve the region's four largest cities, the Research Triangle Park, and the region's major research universities. This corridor assumes the construction of rail transit within Wake County from Wake Forest to the Triangle Metro Center and is used as a baseline comparison to the other Durham-Orange alternatives.

Major Activity Centers

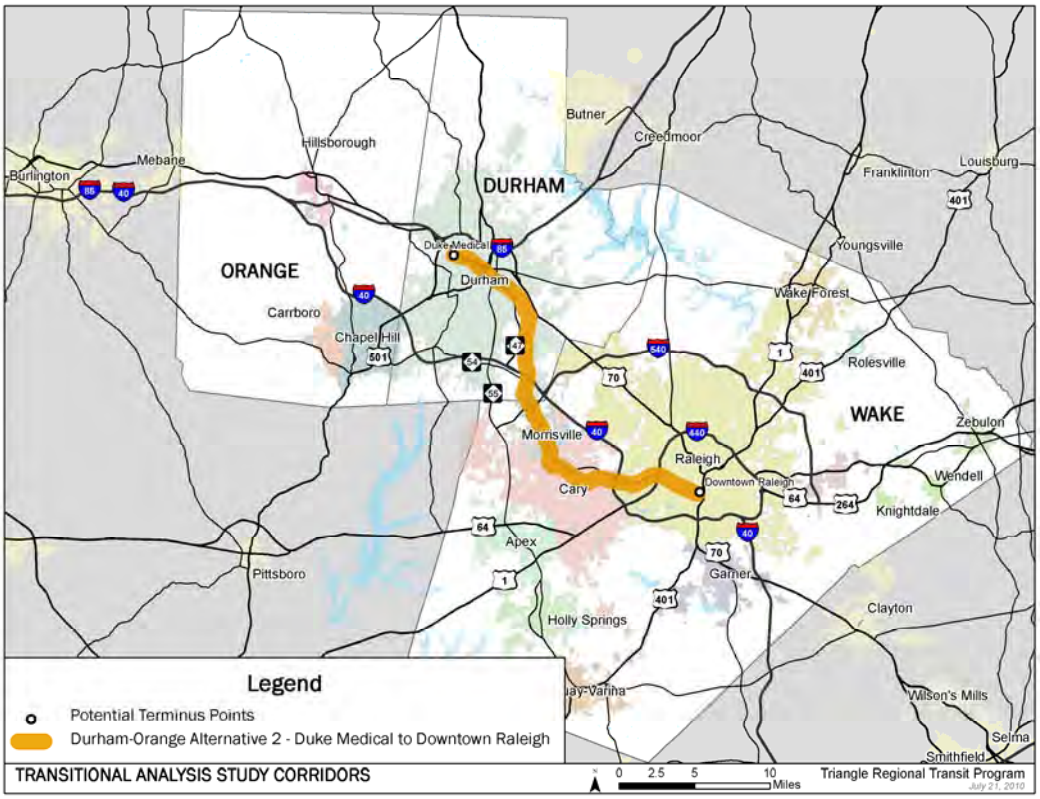
- Urban Centers: Downtown Chapel Hill, Durham, Cary, Raleigh, and Wake Forest
- Colleges and Universities: UNC Chapel Hill, Duke University, NC Central University, Meredith College, NC State University, and Peace College
- Suburban Employment Areas and Special Activity Centers: UNC Hospitals, the NC 54 Corridor (including Glenn Lennox, East 54, UNC's Friday Center, Meadowmont, and Leigh Village), Development around I-40 and US 15-501 (including Gateway East, Patterson Place, and South Square), Duke Hospitals, Research Triangle Park, State Fairgrounds Complex, State Government Offices, and the Northeast Regional Center

Bus Transit Integration

- The corridor is served by Chapel Hill Transit, DATA, C-Tran, Wolfline, CAT, and Triangle Transit

4.2.2 DURHAM-ORANGE ALTERNATIVE 2 – DUKE MEDICAL TO DOWNTOWN RALEIGH

Figure 4.14 Durham-Orange Alternative 2 – Duke Medical to Downtown Raleigh



This 29 mile corridor extends from Duke Hospitals and Duke University through Downtown Durham and south through the Research Triangle Park to Downtown Cary before turning east to Downtown Raleigh. This corridor assumes the construction of rail transit within Wake County from Raleigh to the Research Triangle Park.

Major Activity Centers

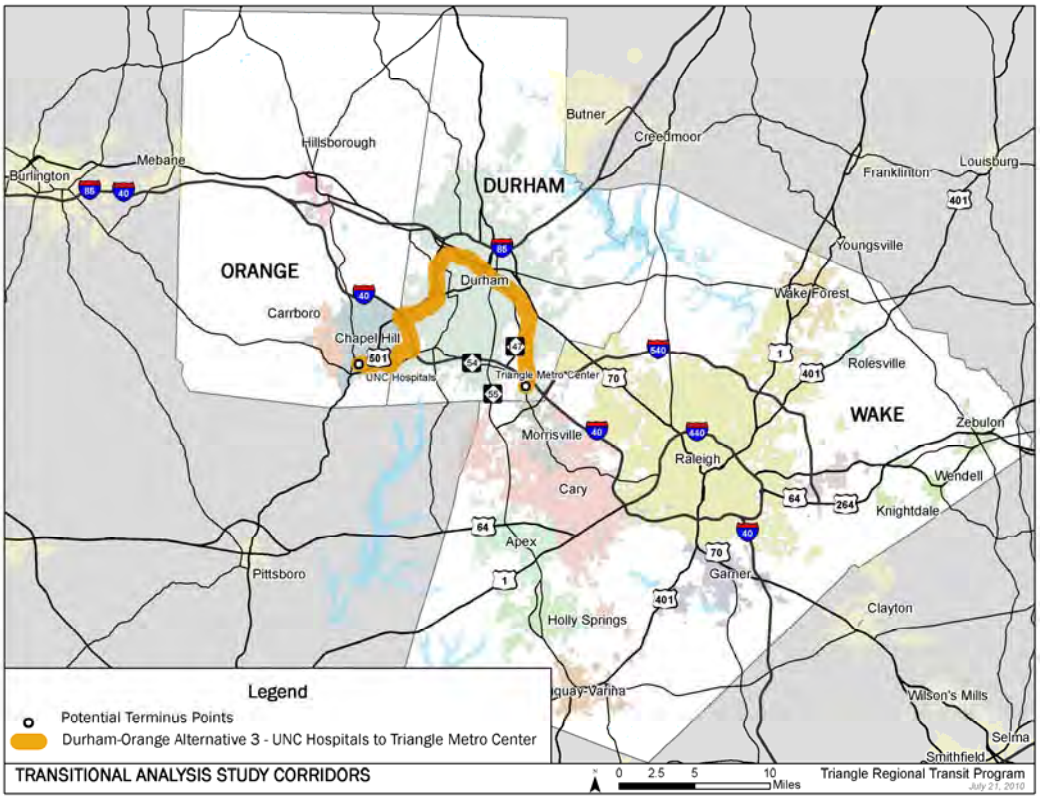
- Urban Centers: Downtown Durham, Cary, and Raleigh
- Colleges and Universities: Duke University, NC Central University, Meredith College, NC State University, and Peace College
- Suburban Employment Areas and Special Activity Centers: Duke Hospitals, Research Triangle Park, State Fairgrounds Complex, and State Government Offices

Bus Transit Integration

- This corridor is served by DATA, CAT, Wolfline, C-Tran, and Triangle Transit.

4.2.3 DURHAM-ORANGE ALTERNATIVE 3 – UNC HOSPITALS TO TRIANGLE METRO CENTER

Figure 4.15 Durham-Orange Alternative 3 – UNC Hospitals to Triangle Metro Center



This 26 mile corridor extends from UNC Hospitals east to NC 54, then North through Duke University to Downtown Durham and south to the Research Triangle Park. This corridor represents a complete buildout of the LRTP rail component within Durham and Orange counties, without a connection to Wake County.

Major Activity Centers

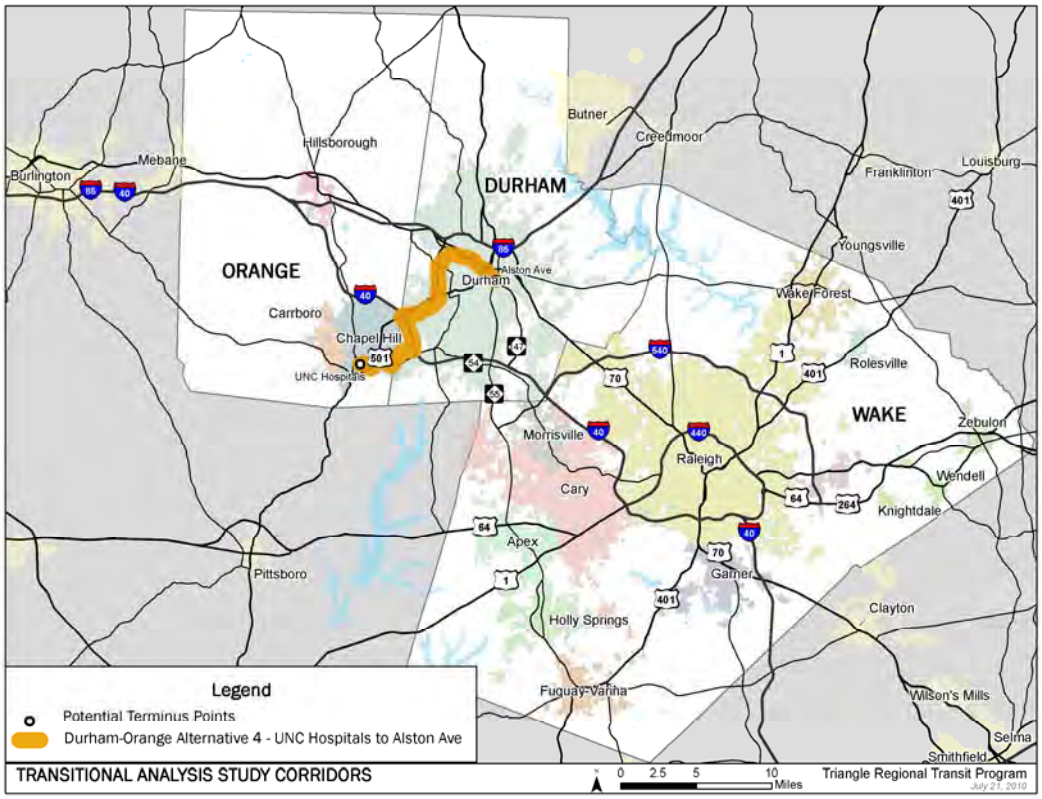
- Urban Centers: Downtown Chapel Hill and Durham
- Colleges and Universities: UNC Chapel Hill, Duke University, and NC Central University
- Suburban Employment Areas and Special Activity Centers: UNC Hospitals, the NC 54 Corridor (including Glenn Lennox, East 54, UNC's Friday Center, Meadowmont, and Leigh Village), Development around I-40 and US 15-501 (including Gateway East, Patterson Place, and South Square), Duke Hospitals, and the Research Triangle Park

Bus Transit Integration

- This corridor is served by Chapel Hill Transit, DATA, and Triangle Transit.

4.2.4 DURHAM-ORANGE ALTERNATIVE 4 – UNC HOSPITALS TO ALSTON AVENUE

Figure 4.16 Durham-Orange Alternative 4 – UNC Hospitals to Alston Avenue



This 17 mile corridor extends from UNC Hospitals through the NC 54 corridor, Duke University Hospitals, and Downtown Durham to Alston Avenue.

Major Activity Centers

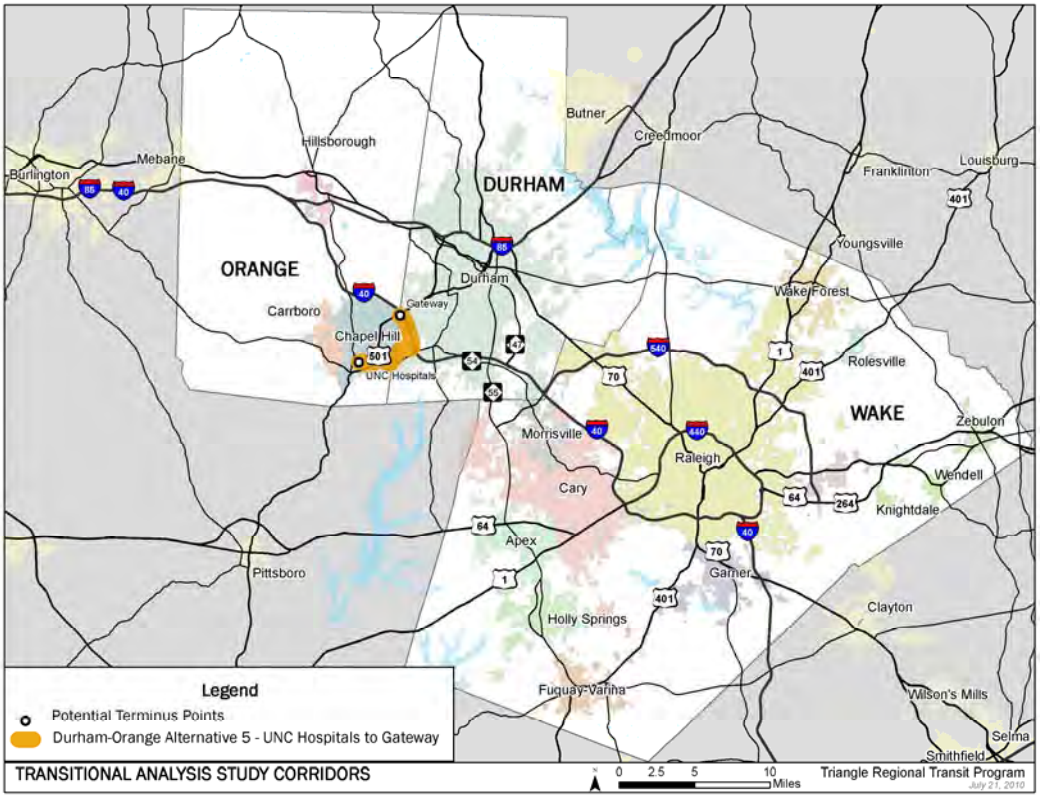
- Urban Centers: Downtown Chapel Hill and Durham
- Colleges and Universities: UNC Chapel Hill, Duke University, and NC Central University
- Suburban Employment Areas and Special Activity Centers: UNC Hospitals, the NC 54 Corridor (including Glenn Lennox, East 54, UNC's Friday Center, Meadowmont, and Leigh Village), Development around I-40 and US 15-501 (including Gateway East, Patterson Place, and South Square), and Duke Hospitals

Bus Transit Integration

- This corridor is served by Chapel Hill Transit, DATA, and Triangle Transit.

4.2.5 DURHAM-ORANGE ALTERNATIVE 5 – UNC HOSPITALS TO GATEWAY

Figure 4.17 Durham-Orange Alternative 5 – UNC Hospitals to Gateway



This 7 mile corridor extends east from UNC Hospitals along the NC 54 corridor then north to the US 15/501 and I-40 interchange at the Gateway developments.

Major Activity Centers

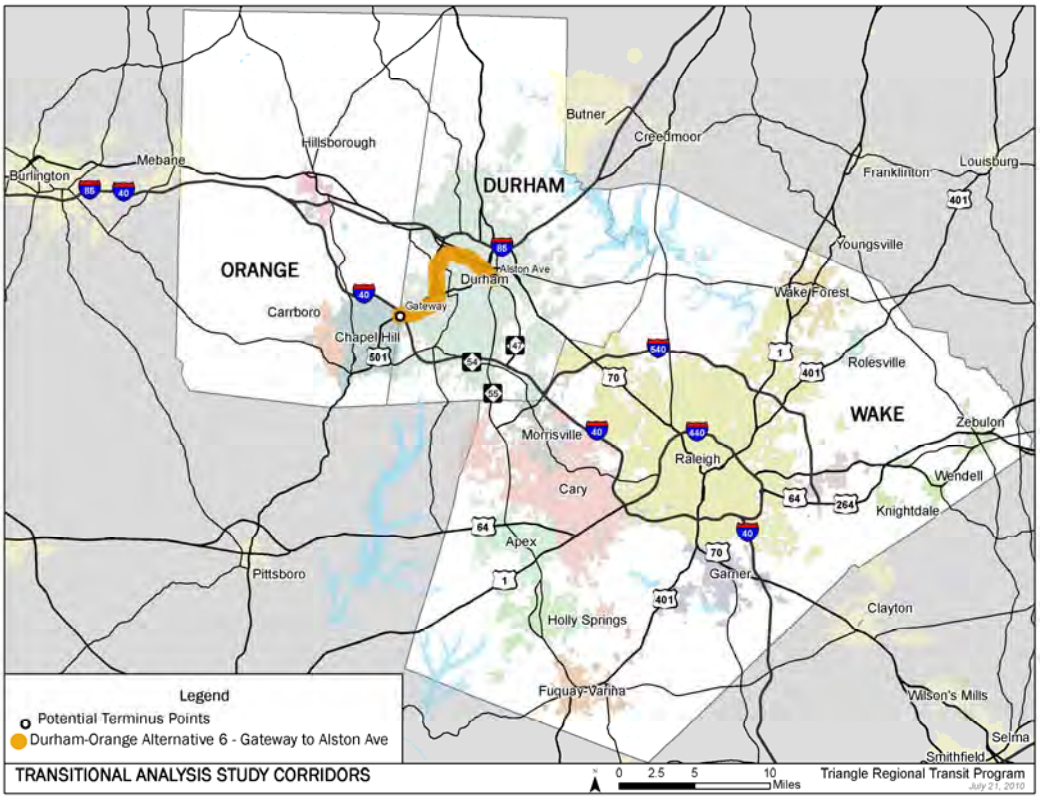
- Urban Centers: Downtown Chapel Hill
- Colleges and Universities: UNC Chapel Hill
- Suburban Employment Areas and Special Activity Centers: UNC Hospitals, the NC 54 Corridor (including Glenn Lennox, East 54, UNC's Friday Center, Meadowmont, and Leigh Village), and Gateway East

Bus Transit Integration

- This corridor is served by Chapel Hill Transit, DATA, and Triangle Transit.

4.2.6 DURHAM-ORANGE ALTERNATIVE 6 – GATEWAY TO ALSTON AVENUE

Figure 4.18 Durham-Orange Alternative 6 – Gateway to Alston Avenue



This 10 mile corridor extends from the I-40 and US 15/501 interchange north through Duke University to Downtown Durham and Alston Avenue.

Major Activity Centers

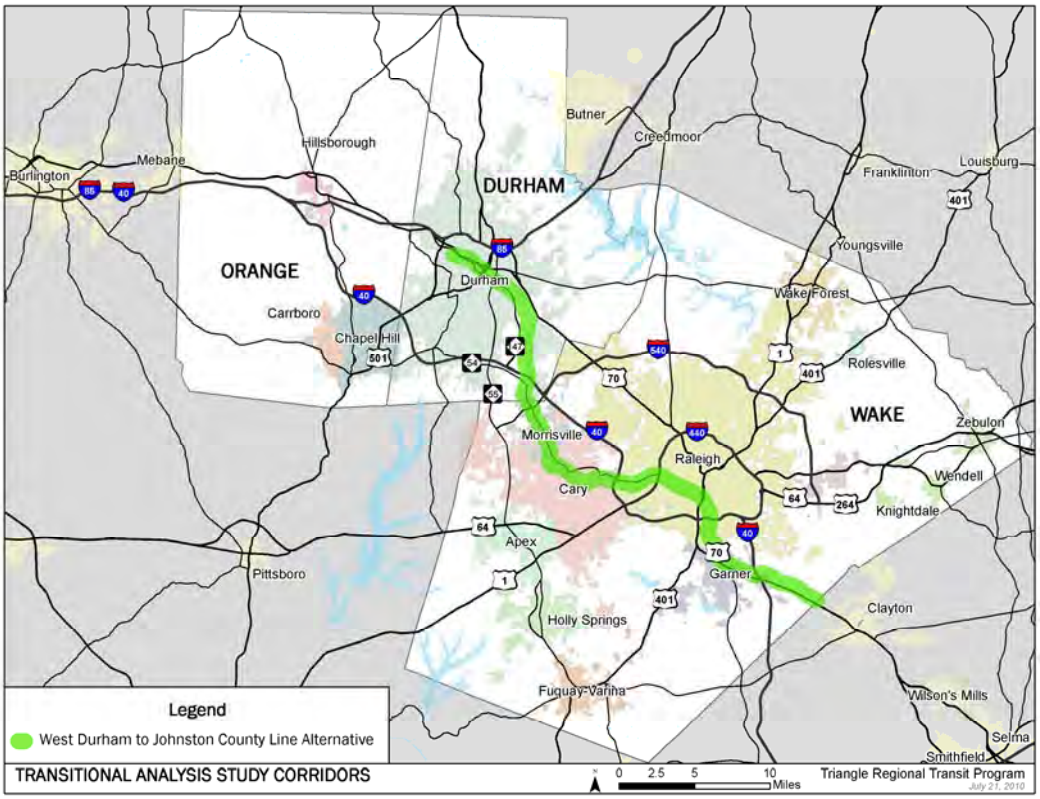
- Urban Centers: Downtown Durham
- Colleges and Universities: Duke University and NC Central University
- Suburban Employment Areas and Special Activity Centers: Development around I-40 and US 15-501 (including Gateway East, Patterson Place, and South Square) and Duke Hospitals

Bus Transit Integration

- This corridor is served by Chapel Hill Transit, DATA, and Triangle Transit.

4.3 REGIONAL CORRIDOR ALTERNATIVE – WEST DURHAM TO JOHNSTON COUNTY LINE

Figure 4.19 Regional Corridor Alternative – West Durham to Johnston County Line



This 40 mile corridor would consist of commuter rail-type service operating along the NCRR corridor from West Durham to the Wake-Johnston County Line. This service would run at peak hours Monday-Friday only with the intent of serving work-based trips to and from the Research Triangle Park as well as Raleigh and Durham.

Major Activity Centers

- Urban Centers: Downtown Durham, Cary, and Raleigh
- Colleges and Universities: Duke University, NC Central University, Meredith College, NC State University, and Peace College
- Suburban Employment Areas and Special Activity Centers: Duke Hospitals, Research Triangle Park, the State Fairgrounds Complex, and State Government Offices

Bus Transit Integration

- This corridor is served by DATA, CAT, Wolfline, C-Tran, and Triangle Transit.

CHAPTER 5. CORRIDOR EVALUATION CRITERIA

The corridors described in Chapter 4 will be evaluated by the consulting team using the following criteria, which were developed in consultation with Triangle Transit, DCHC-MPO and CAMPO. Where applicable, the evaluation year is noted in parentheses.

5.1 MOBILITY

- Number of daily total trips in corridor (2035)
- Number of daily transit trips in corridor (2035)
- Transit passenger miles traveled (PMT) for rail (2035)
- Relative peak hour corridor travel times for rail and highway travel (2035)

5.2 SOCIOECONOMIC

- Population and density within a mile-wide corridor (2005 and 2035)
- Number and density of low-income households within a mile-wide corridor (2000)
- Number and density of minority households within a mile-wide corridor (2000)
- Number and density of jobs within a mile-wide corridor (2005 and 2035)

5.3 LAND USE

- Supports Transit Oriented Development (TOD) (Existing master plans consistent with TOD concepts, level of public sector support and private interest)
- Activity centers served (employment, retail, major institutions, mixed use, special attractions)
- Planned developments in corridor (pipeline development and private sector development plans)

5.4 FINANCIAL

- Total capital cost (2010 Dollars)
- Capital cost per mile (2010 Dollars)
- Capital cost per weekday transit trip
- Capital cost per weekday transit passenger mile traveled
- Total Operating and Maintenance (O&M) cost (2010 Dollars)
- O&M cost per weekday transit trip (2010 Dollars)
- Annual O&M cost per weekday transit passenger mile traveled (2010 Dollars)

CHAPTER 6. SCREENING OF CORRIDORS AND SELECTION OF PRIORITY CORRIDORS

6.1 MOBILITY

The Triangle Regional Model (TRM) is a four-step model that utilizes socio-economic data aggregated at a Traffic Analysis Zone (TAZ) geography to estimate travel demand. For this analysis, the TRM was used to estimate future travel demand within each of the study corridors for the year 2035. The four criteria used to evaluate each corridor are number of daily person trips in each corridor, number of daily rail transit trips in each corridor, rail transit passenger miles traveled (PMT), and the peak hour corridor travel times for rail and highway travel.

6.1.1 PERSON TRIPS IN CORRIDOR

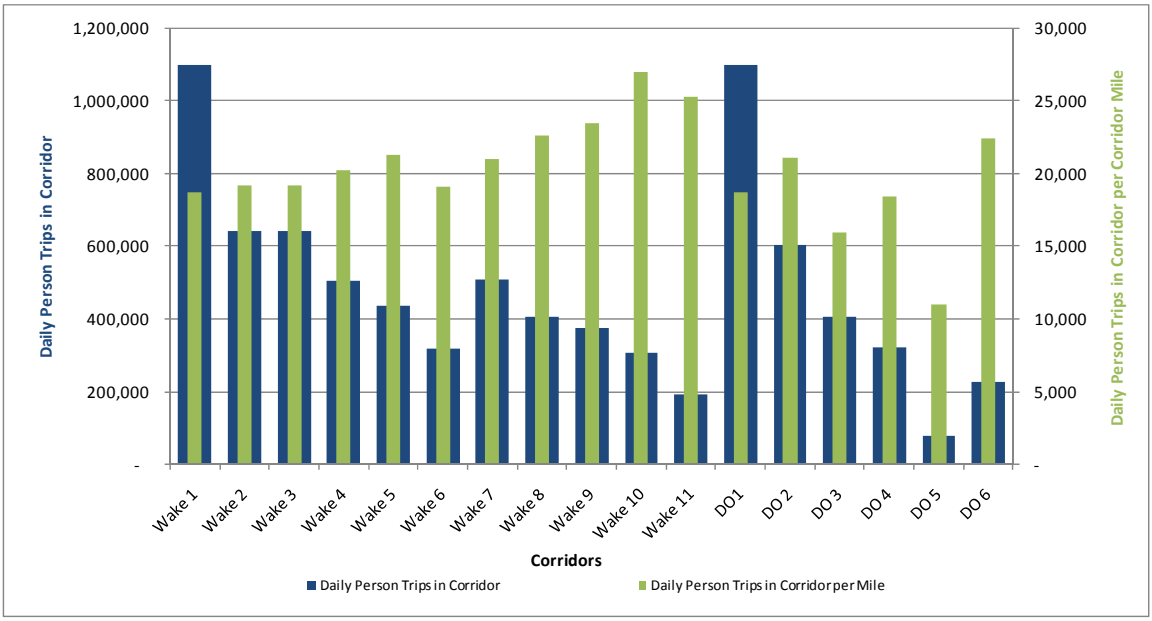
The number of total daily person trips in each corridor represents the level of activity within each corridor, which can be used to make relative comparisons regarding the potential for rail transit ridership in each corridor. Total daily person trips include all trips made within the corridor for all purposes and by all travel modes. For the purpose of this analysis, the corridors are defined as all Traffic Analysis Zones (TAZs) that are partially or wholly within a ½ mile radius of the rail alignment used for the TRM. The four corridors with the highest daily person trips per mile of modeled rail are W8-W11, which are most focused around NCSU and downtown Raleigh.

Table 6.1 Daily Person Trips in Corridor

Corridors	Termini	Length (Miles)	Daily Person Trips in Corridor	Daily Person Trips in Corridor per Mile
Wake 1	UNC Hospitals - Wake Forest	59	1,098,547	18,653
Wake 2	TMC - Wake Forest	33	640,569	19,209
Wake 3	Veridea - Wake Forest	33	639,723	19,162
Wake 4	Downtown Cary - Wake Forest	25	503,279	20,172
Wake 5	State Fairgrounds - Wake Forest	20	435,784	21,299
Wake 6	Downtown Raleigh - Wake Forest	17	319,810	19,110
Wake 7	TMC - NERC	24	508,823	20,946
Wake 8	NW Cary - NERC	18	403,853	**22,602**
Wake 9	Downtown Cary - NERC	16	373,236	**23,484**
Wake 10	State Fairgrounds - NERC	11	307,082	**26,927**
Wake 11	Downtown Raleigh - NERC	8	194,093	**25,275**
DO1	UNC Hospitals - Wake Forest	59	1,098,547	18,653
DO 2	Duke Medical - Downtown Raleigh	29	604,028	21,024
DO 3	UNC Hospitals - TMC	26	407,259	15,942
DO 4	UNC Hospitals - Alston Ave	17	319,870	18,439
DO 5	UNC Hospitals - Gateway	7	79,935	11,030
DO 6	Gateway - Alston Ave	10	226,526	22,429

Note: The data listed in emboldened red are top performers for each respective evaluation criteria.

Figure 6.1 Daily Person Trips in Corridor



6.1.2 RAIL TRIPS IN CORRIDOR

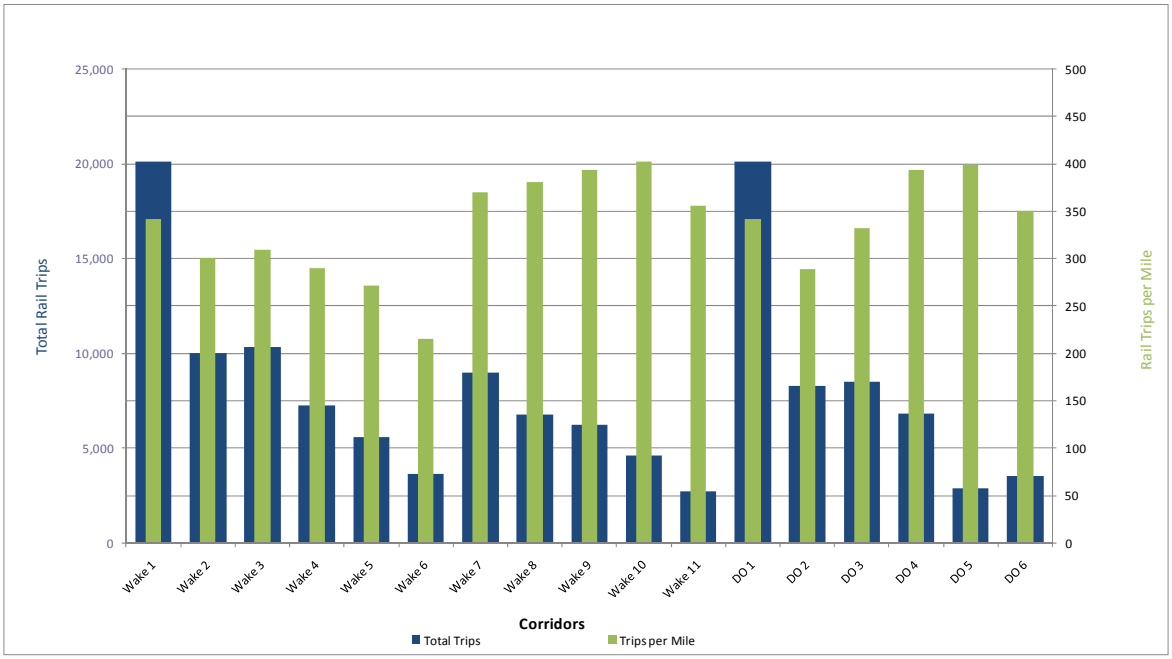
Potential rail station locations were used in the TRM to estimate the demand for rail travel in each corridor. The three corridors with the highest daily rail trip estimates are the longest corridors, as shown in Table 6.2. Thus, the number of daily rail trips per mile is a more informative measure for comparing corridors, as the number of trips is normalized by length. The four corridors with the highest trips per mile are the State Fairgrounds to the NERC (W10), UNC Hospitals to Gateway (DO5), UNC Hospitals to Alston Avenue (DO4), and Downtown Cary to the NERC (W9), as shown in Table 6.2 and on Figure 6.2.

Table 6.2 Daily Rail Transit Total Trips and Trips per Mile

Corridors	Termini	Length (Miles)	Rail Trips	Rail Trips per Mile
Wake 1	UNC Hospitals - Wake Forest	59	20,105	341
Wake 2	TMC - Wake Forest	33	10,010	300
Wake 3	Veridea - Wake Forest	33	10,325	309
Wake 4	Downtown Cary - Wake Forest	25	7,236	290
Wake 5	State Fairgrounds - Wake Forest	20	5,562	272
Wake 6	Downtown Raleigh - Wake Forest	17	3,611	216
Wake 7	TMC - NERC	24	8,986	370
Wake 8	NW Cary - NERC	18	6,791	380
Wake 9	Downtown Cary - NERC	16	6,257	**394**
Wake 10	State Fairgrounds - NERC	11	4,586	**402**
Wake 11	Downtown Raleigh - NERC	8	2,732	356
DO 1	UNC Hospitals - Wake Forest	59	20,105	341
DO 2	Duke Medical - Downtown Raleigh	29	8,288	288
DO 3	UNC Hospitals - TMC	26	8,491	332
DO 4	UNC Hospitals - Alston Ave	17	6,831	**394**
DO 5	UNC Hospitals - Gateway	7	2,889	**399**
DO 6	Gateway - Alston Ave	10	3,541	351

Note: The data listed in emboldened red are top performers for each respective evaluation criteria.

Figure 6.2 Daily Rail Transit Total Trips and Trips per Mile



6.1.3 RAIL PASSENGER MILES

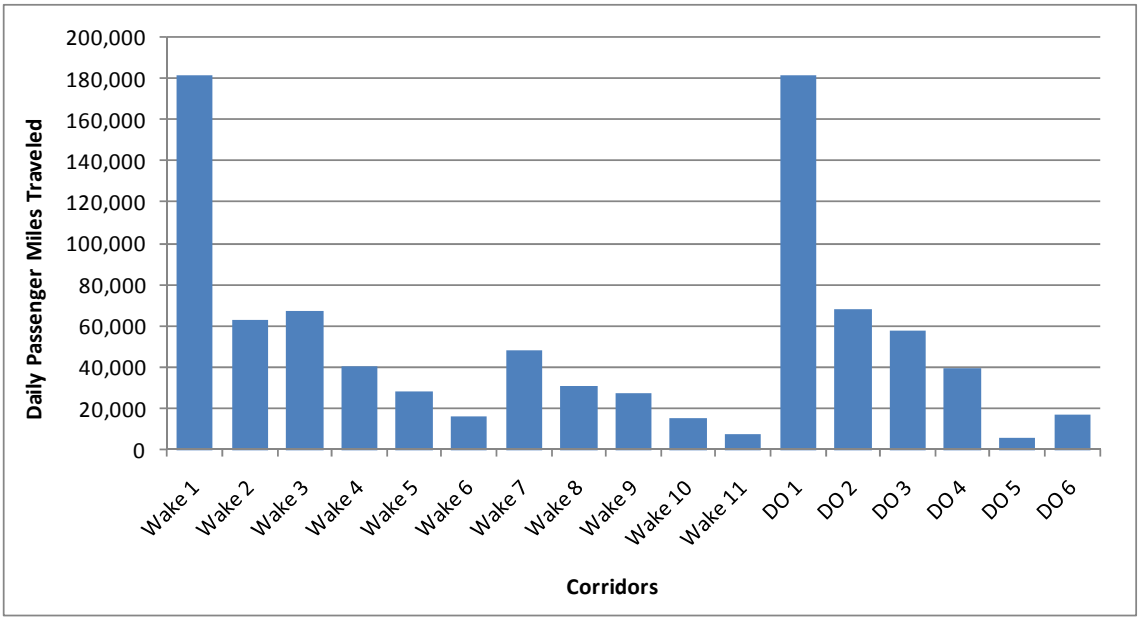
The number of daily rail passenger miles traveled (PMTs) estimated for each corridor provides some indication of the potential for reducing private vehicle miles traveled (VMTs) on roadways. The four corridors with the highest PMTs coincide with the longest corridors, as shown in Table 6.3.

Table 6.3 Rail Transit Passenger Miles Traveled

Corridors	Termini	Length (Miles)	Rail Transit PMT
Wake 1	UNC Hospitals - Wake Forest	59	**181,253**
Wake 2	TMC - Wake Forest	33	**62,886**
Wake 3	Veridea - Wake Forest	33	**66,950**
Wake 4	Downtown Cary - Wake Forest	25	40,353
Wake 5	State Fairgrounds - Wake Forest	20	27,913
Wake 6	Downtown Raleigh - Wake Forest	17	15,856
Wake 7	TMC - NERC	24	48,160
Wake 8	NW Cary - NERC	18	30,389
Wake 9	Downtown Cary - NERC	16	27,195
Wake 10	State Fairgrounds - NERC	11	15,155
Wake 11	Downtown Raleigh - NERC	8	7,056
DO 1	UNC Hospitals - Wake Forest	59	**181,253**
DO 2	Duke Medical - Downtown Raleigh	29	**67,600**
DO 3	UNC Hospitals - TMC	26	57,691
DO 4	UNC Hospitals - Alston Ave	17	39,173
DO 5	UNC Hospitals - Gateway	7	6,126
DO 6	Gateway - Alston Ave	10	16,555

Note: The data listed in emboldened red are top performers for each respective evaluation criteria.

Figure 6.3 Rail Transit Passenger Miles Traveled



6.1.4 PEAK HOUR CORRIDOR TRAVEL TIMES

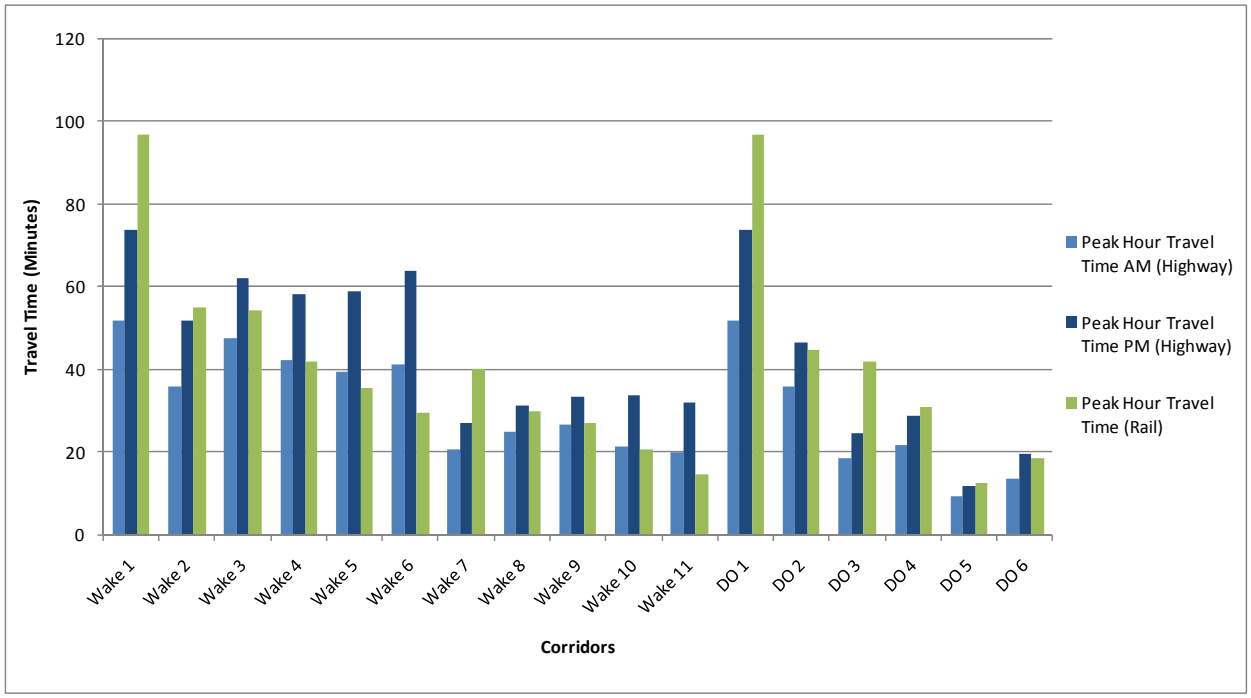
The peak hour travel time between the termini of each corridor was calculated for rail and highway travel to provide a relative comparison between corridors, as shown in Table 6.4 and on Figure 6.4. This measure provides an indication of travel time benefit for rail (if any) when traveling the entire length of the corridor. The four corridors that provide the greatest rail travel time benefit between termini are Downtown Raleigh to Wake Forest (W6), Downtown Raleigh to NERC (W11), State Fairgrounds to Wake Forest (W5), and State Fairgrounds to NERC (W10).

Table 6.4 Peak Hour Travel Times

Corridors	Termini	Length (Miles)	Peak Hour Travel Time (Rail)	Peak Hour Travel Time AM (Roadway)	Percent Travel Time Savings (AM)	Peak Hour Travel Time PM (Roadway)	Percent Travel Time Savings (PM)
Wake 1	UNC Hospitals - Wake Forest	59	97	52	-87%	74	-32%
Wake 2	TMC - Wake Forest	33	55	36	-52%	52	-6%
Wake 3	Veridea - Wake Forest	33	54	48	-14%	62	13%
Wake 4	Downtown Cary - Wake Forest	25	42	42	1%	58	28%
Wake 5	State Fairgrounds - Wake Forest	20	36	39	**10%**	59	**39%**
Wake 6	Downtown Raleigh - Wake Forest	17	29	41	**29%**	64	**54%**
Wake 7	TMC - NERC	24	40	20	-96%	27	-48%
Wake 8	NW Cary - NERC	18	30	25	-20%	31	4%
Wake 9	Downtown Cary - NERC	16	27	27	-2%	33	19%
Wake 10	State Fairgrounds - NERC	11	21	21	**3%**	34	**39%**
Wake 11	Downtown Raleigh - NERC	8	14	20	**27%**	32	**55%**
DO 1	UNC Hospitals - Wake Forest	59	97	52	-87%	74	-32%
DO 2	Duke Medical - Downtown Raleigh	29	45	36	-25%	46	3%
DO 3	UNC Hospitals - TMC	26	42	18	-127%	24	-72%
DO 4	UNC Hospitals - Alston Ave	17	31	22	-43%	29	-7%
DO 5	UNC Hospitals - Gateway	7	12	9	-37%	12	-5%
DO 6	Gateway - Alston Ave	10	18	13	-38%	20	6%

Note: The data listed in emboldened red are top performers for each respective evaluation criteria.

Figure 6.4 Peak Hour Travel Times



6.2 SOCIO-ECONOMIC

As an additional gauge of potential rail ridership in each corridor, an analysis of population, employment, and income was conducted using socio-economic data aggregated at a Traffic Analysis Zone (TAZ) geography for years 2005 and 2035. Similarly, data from the 2000 U.S. Census, aggregated at a Census Block Group (BG) geography, was used to determine the number and density of low-income and minority persons within each corridor. The number and density of low-income and minority persons can be an informative indicator of potential ridership, as many among these populations are considered "transit dependent." That is, their access to private transportation modes, such as the automobile, is limited.

6.2.1 POPULATION

The four corridors with the highest population and number of households in 2005 are the longest corridors, as shown in Table 6.5. Thus, household density (households/acre) is a more appropriate measure for comparing corridors, as the number of households is normalized by area. In 2005, downtown Durham and downtown Raleigh had the highest household densities of the entire corridor study area, as shown on Figure 6.5. As a result, the corridors concisely focused on these two areas, including DO6, W11, DO4, W9, W10, and W8 had the highest household densities among all of the corridors. From 2005 to 2035, the highest percentage growth is projected between Downtown Raleigh and the Northeast Regional Center (NERC). As a result, by 2035 corridors W8, W9, W10, and W11 are projected to have the highest household densities among all of the corridors.

Table 6.5 Population Characteristics

Corridors	Termini	Length (Miles)	Population			Households			Density (Households/Acre)		
			2005	2035	% Change	2005	2035	% Change	2005	2035	% Change
Wake 1	UNC Hospitals - Wake Forest	59	124,467	274,667	121%	39,906	100,333	151%	1.06	2.66	151%
Wake 2	TMC - Wake Forest	33	70,822	178,991	153%	22,037	66,973	204%	1.01	3.08	204%
Wake 3	Veridea - Wake Forest	33	77,005	189,116	146%	24,138	70,633	193%	1.11	3.24	193%
Wake 4	Downtown Cary - Wake Forest	25	60,719	150,618	148%	18,071	55,596	208%	1.10	3.39	208%
Wake 5	State Fairgrounds - Wake Forest	20	50,627	126,797	150%	14,054	45,881	226%	1.04	3.40	**226%**
Wake 6	Downtown Raleigh - Wake Forest	17	29,535	95,836	224%	12,240	39,886	226%	1.10	3.57	226%
Wake 7	TMC - NERC	24	61,234	158,274	158%	18,499	58,842	218%	1.16	3.69	218%
Wake 8	NW Cary - NERC	18	54,667	139,059	154%	15,964	51,257	221%	1.35	**4.32**	221%
Wake 9	Downtown Cary - NERC	16	51,131	129,901	154%	14,533	47,465	227%	**1.37**	**4.48**	**227%**
Wake 10	State Fairgrounds - NERC	11	41,039	106,080	158%	10,516	37,750	259%	1.36	**4.88**	**259%**
Wake 11	Downtown Raleigh - NERC	8	19,947	75,119	277%	8,703	31,755	265%	**1.61**	**5.89**	**265%**
DO 1	UNC Hospitals - Wake Forest	59	124,467	274,667	121%	39,906	100,333	151%	1.06	2.66	151%
DO 2	Duke Medical - Downtown Raleigh	29	69,494	167,516	141%	19,487	58,788	202%	1.04	3.13	202%
DO 3	UNC Hospitals - TMC	26	53,681	98,891	84%	17,884	34,590	93%	1.09	2.10	93%
DO 4	UNC Hospitals - Alston Ave	17	48,497	84,113	73%	15,847	28,897	82%	**1.41**	2.57	82%
DO 5	UNC Hospitals - Gateway	7	15,783	30,374	92%	3,691	8,663	135%	0.75	1.75	135%
DO 6	Gateway - Alston Ave	10	34,769	57,756	66%	12,961	22,095	70%	**1.88**	3.21	70%

Note: The data listed in emboldened red are top performers for each respective evaluation criteria.

Figure 6.5 2005 Household Density (Households per Acre)

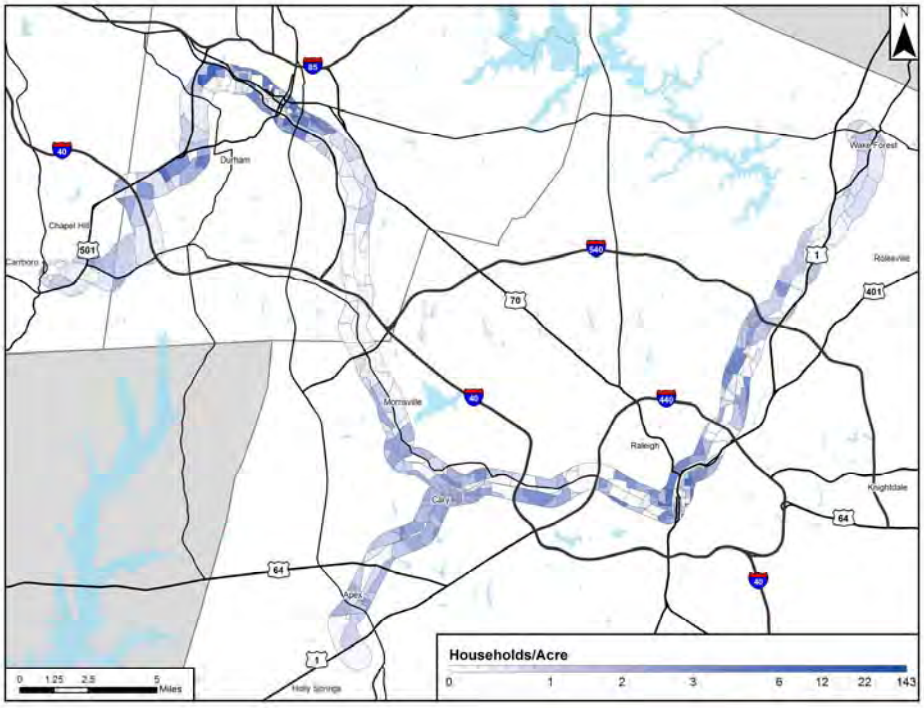


Figure 6.6 2035 Household Density (Households per Acre)

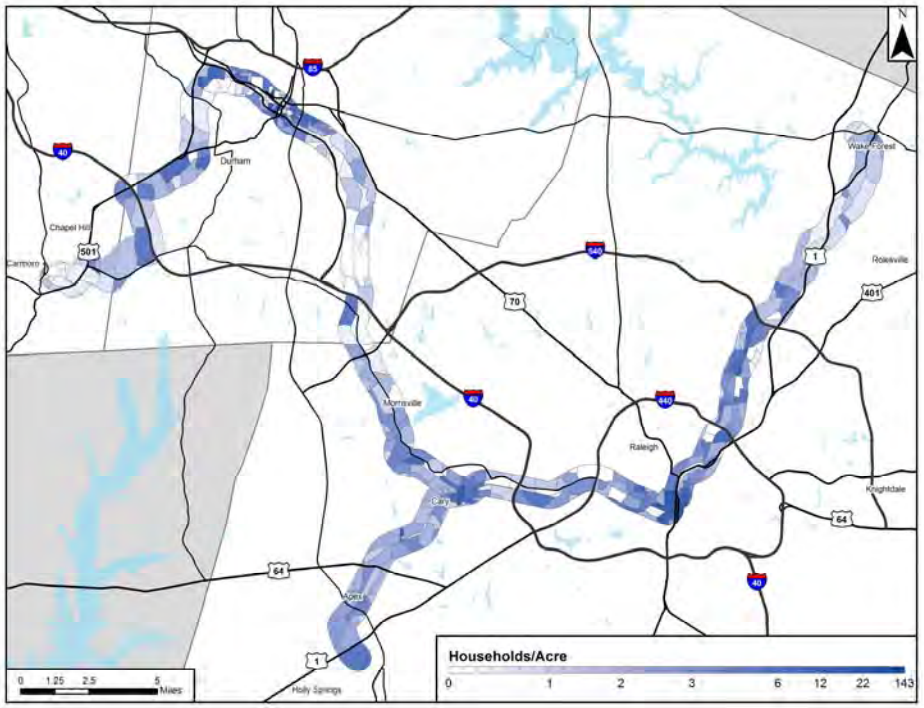
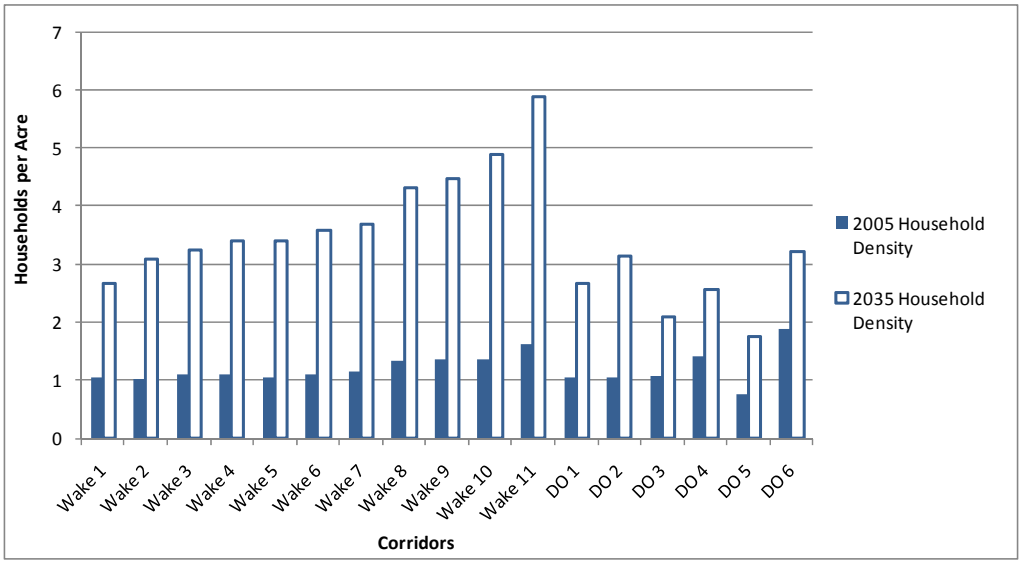


Figure 6.7 Household Density by Corridor (Households per Acre)



6.2.2 EMPLOYMENT

As with population, employment density is more appropriate than absolute employment numbers for comparing employment between the study corridors, as the corridors differ greatly in length and area. In 2005, the three corridors most centered on downtown Raleigh (W9, W10, and W11) and the corridor from Gateway to Alston Avenue (DO6) had the highest employment density (employees/acre) among the study corridors, as shown in Table 6.6 and on Figure 6.8. In 2035, these same four corridors are projected to remain highest in employment density, despite the highest percentage growth in the corridors from TMC to Wake Forest (W2), Downtown Raleigh Wake Forest (W6), UNC Hospitals to Alston Avenue (DO4), and UNC Hospitals to Gateway (DO5).

Table 6.6 Employment Characteristics

Corridors	Termini	Length (Miles)	Total Employment			Employment Density (Employees/Acre)		
			2005	2035	% Change	2005	2035	% Change
Wake 1	UNC Hospitals - Wake Forest	59	191,673	361,061	88%	5.1	9.6	88%
Wake 2	TMC - Wake Forest	33	106,579	207,024	94%	4.9	9.5	**94%**
Wake 3	Veridea - Wake Forest	33	99,095	190,746	92%	4.6	8.8	92%
Wake 4	Downtown Cary - Wake Forest	25	93,451	170,486	82%	5.7	10.4	82%
Wake 5	State Fairgrounds - Wake Forest	20	85,718	150,969	76%	6.3	11.2	76%
Wake 6	Downtown Raleigh - Wake Forest	17	61,897	120,126	94%	5.5	10.8	**94%**
Wake 7	TMC - NERC	24	101,124	187,575	85%	6.3	11.8	85%
Wake 8	NW Cary - NERC	18	90,466	159,174	76%	7.6	13.4	76%
Wake 9	Downtown Cary - NERC	16	87,997	151,037	72%	**8.3**	**14.2**	72%
Wake 10	State Fairgrounds - NERC	11	80,264	131,520	64%	**10.4**	**17.0**	64%
Wake 11	Downtown Raleigh - NERC	8	56,443	100,678	78%	**10.5**	**18.7**	78%
DO 1	UNC Hospitals - Wake Forest	59	191,673	361,061	88%	5.1	9.6	88%
DO 2	Duke Medical - Downtown Raleigh	29	127,830	234,467	83%	6.8	12.5	83%
DO 3	UNC Hospitals - TMC	26	88,340	158,426	79%	5.4	9.6	79%
DO 4	UNC Hospitals - Alston Ave	17	67,392	131,286	95%	6.0	11.7	**95%**
DO 5	UNC Hospitals - Gateway	7	17,988	38,131	112%	3.6	7.7	**112%**
DO 6	Gateway - Alston Ave	10	52,619	99,574	89%	**7.6**	**14.4**	89%

Note: The data listed in emboldened red are top performers for each respective evaluation criteria.

Figure 6.8 2005 Employment Density (Employees per Acre)

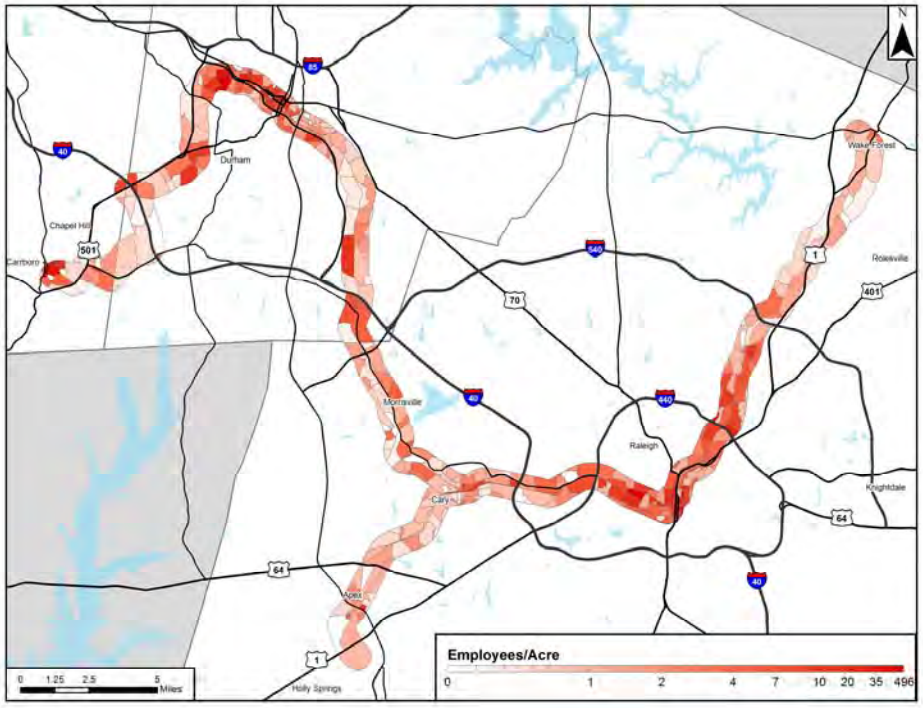


Figure 6.9 2035 Employment Density (Employees per Acre)

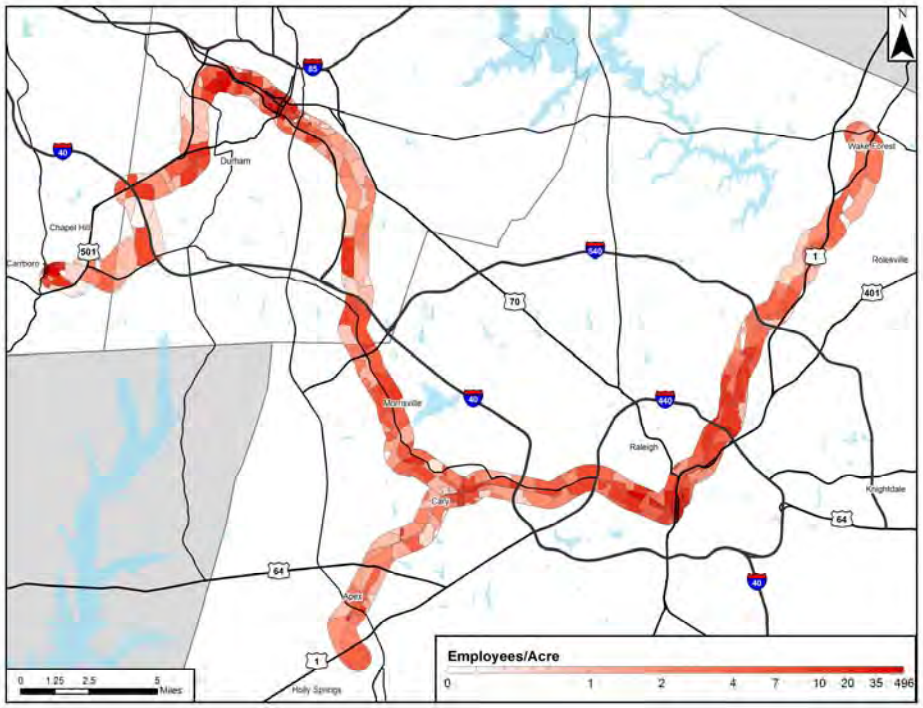
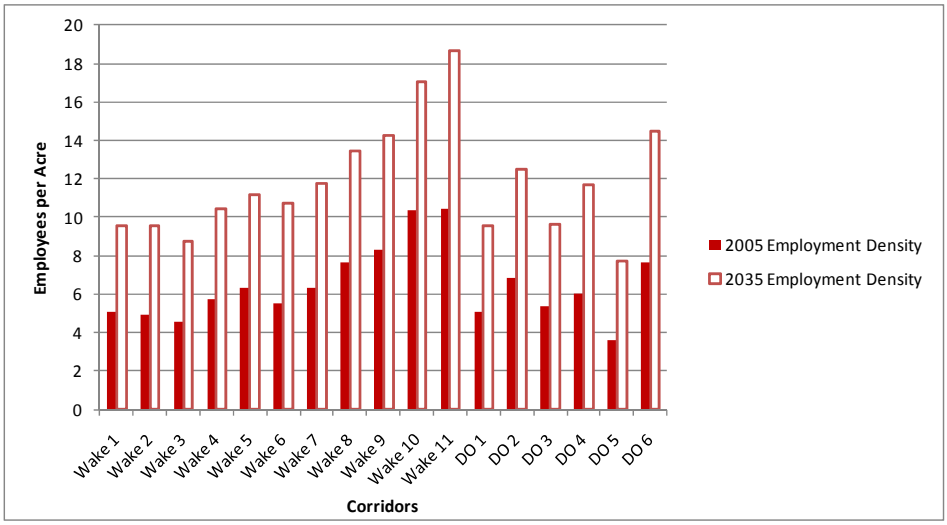


Figure 6.10 Employment Density by Corridor (Employees per Acre)



6.2.3 INCOME

Among all of the study corridors, the corridor between Gateway in Chapel Hill and Alston Avenue in Durham (DO6) had the highest percentage of the population below the poverty level in 2000, the lowest mean income in 2005, and is projected to have the lowest mean income in 2035. Corridors DO2, DO3, and DO4 were also among the four lowest mean incomes in both 2005 and 2035, as shown in Table 6.7. All four of these corridors include the section between Erwin/Morreene Roads and Alston Avenue, which has the most severe levels of poverty among the entire study area, as shown on Figure 6.13. Interestingly, the corridor from UNC Hospitals to Gateway (DO5) had the highest mean income in 2005 by a margin of nearly 30% over the next highest corridor, but ranked among the top four highest corridors in terms of percentage below poverty in 2000. This is likely explained by the large UNC student population within this corridor, with little or no income.

Table 6.7 Income Characteristics

Corridors	Termini	Length (Miles)	Mean Income			Below Poverty	% Below Poverty	Poverty Density (Persons per Acre)
			2005	2035	% Change	2000	2000	2000
Wake 1	UNC Hospitals - Wake Forest	59	$ 54,852	$ 56,258	3%	17,472	16%	0.46
Wake 2	TMC - Wake Forest	33	$ 61,991	$ 58,959	-5%	5,770	10%	0.27
Wake 3	Veridea - Wake Forest	33	$ 64,059	$ 61,092	-5%	5,986	10%	0.27
Wake 4	Downtown Cary - Wake Forest	25	$ 58,867	$ 57,711	-2%	5,470	11%	0.33
Wake 5	State Fairgrounds - Wake Forest	20	$ 57,969	$ 57,632	-1%	4,303	11%	0.32
Wake 6	Downtown Raleigh - Wake Forest	17	$ 59,238	$ 58,741	-1%	2,726	10%	0.24
Wake 7	TMC - NERC	24	$ 60,186	$ 57,848	-4%	5,398	11%	0.34
Wake 8	NW Cary - NERC	18	$ 58,091	$ 57,307	-1%	5,296	12%	0.45
Wake 9	Downtown Cary - NERC	16	$ 55,809	$ 56,121	1%	5,098	12%	0.48
Wake 10	State Fairgrounds - NERC	11	$ 53,442	$ 55,616	4%	3,931	12%	0.51
Wake 11	Downtown Raleigh - NERC	8	$ 54,283	$ 56,628	4%	2,354	11%	0.44
DO 1	UNC Hospitals - Wake Forest	59	$ 54,852	$ 56,258	3%	17,472	16%	0.46
DO 2	Duke Medical - Downtown Raleigh	29	$ 50,613	$ 53,042	5%	10,596	18%	**0.56**
DO 3	UNC Hospitals - TMC	26	$ 46,067	$ 50,084	9%	11,705	**23%**	**0.71**
DO 4	UNC Hospitals - Alston Ave	17	$ 46,989	$ 52,030	11%	10,015	**22%**	**0.89**
DO 5	UNC Hospitals - Gateway	7	$ 82,011	$ 80,635	-2%	2,437	**19%**	0.49
DO 6	Gateway - Alston Ave	10	$ 37,502	$ 41,063	9%	7,660	**23%**	**1.11**

Note: The data listed in emboldened red are top performers for each respective evaluation criteria.

Figure 6.11 Percentage below Poverty Level (2000)

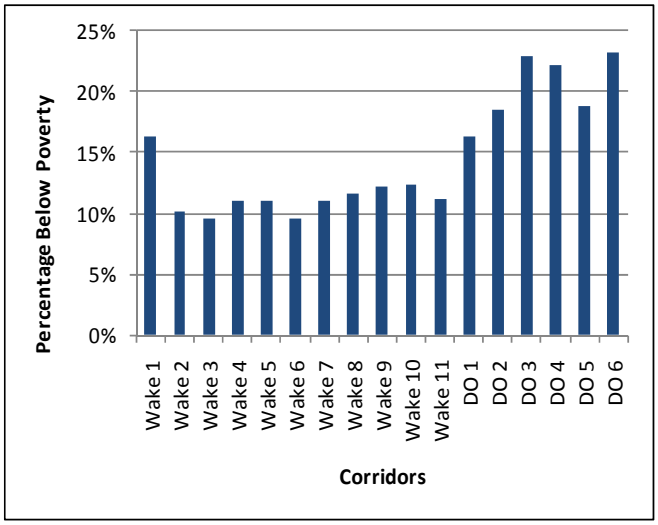


Figure 6.12 Density of Persons below Poverty Level (2000)

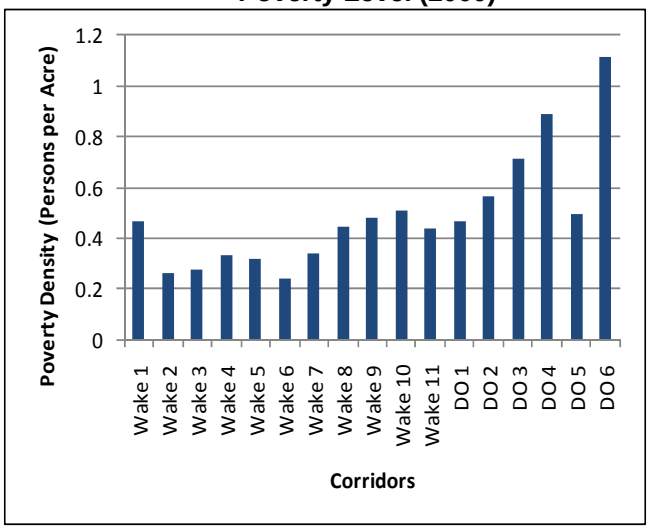


Figure 6.13 2000 Poverty Density (Persons per Acre)

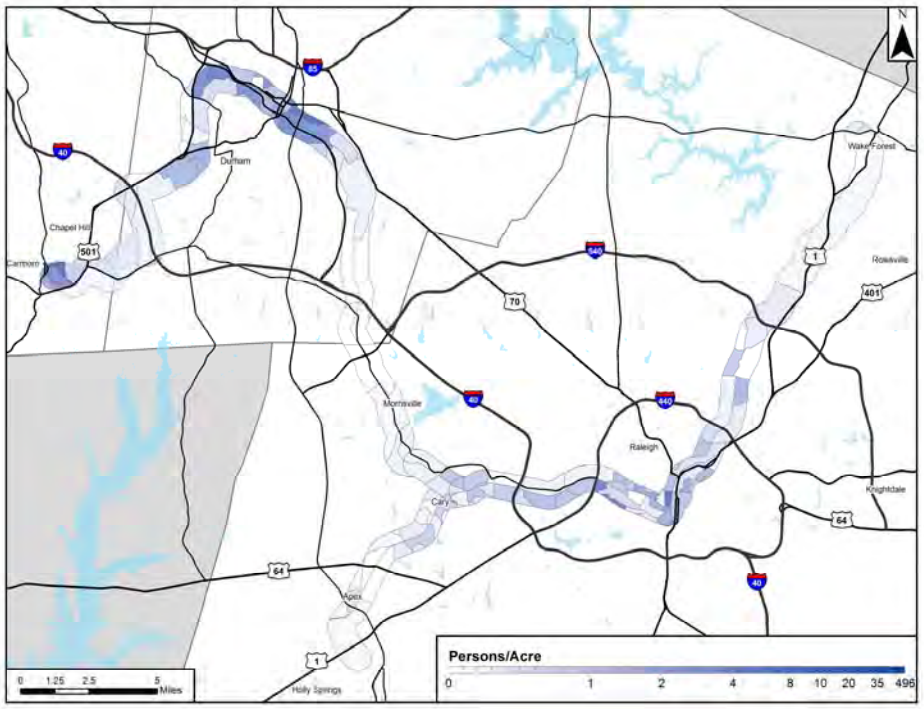
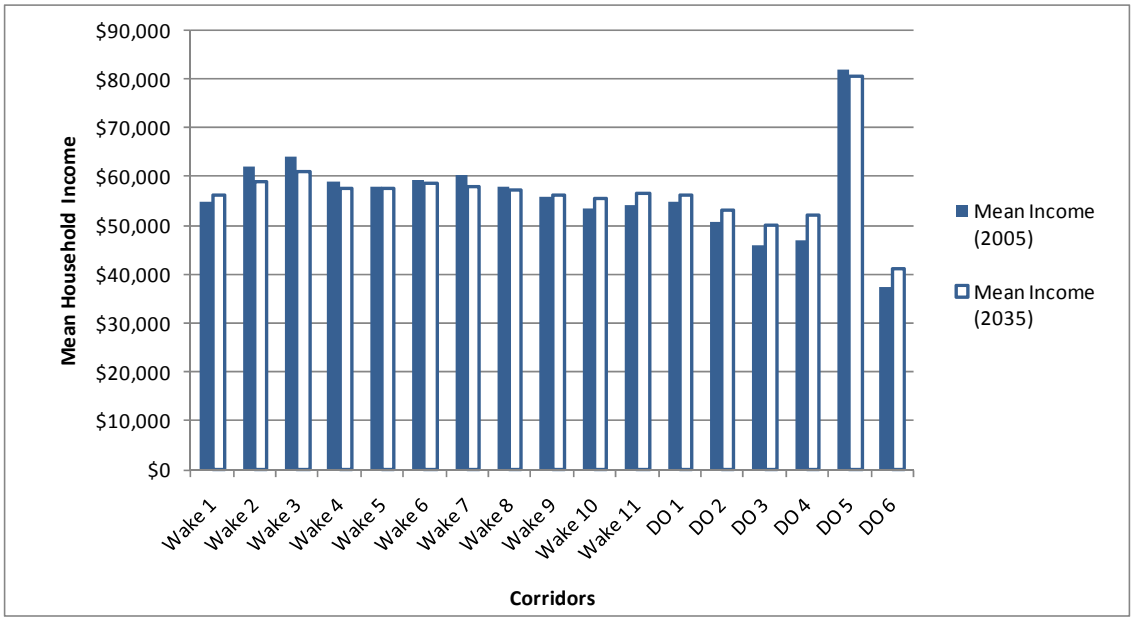


Figure 6.14 Mean Household Income by Corridor (Dollars)



6.2.4 MINORITY POPULATION

Among all of the study corridors, the corridor between Gateway in Chapel Hill and Alston Avenue in Durham (DO6) had the highest percentage minority population in 2000. Corridors DO2, DO3, and DO4 were also among the four corridors with the highest percentage minority population, as shown in Table 6.8. All four of these corridors include the section between Erwin/Moreene Roads and Alston Avenue, which has the highest minority population density among the entire study area, as shown on Figure 6.17.

Table 6.8 Minority Population

Corridors	Termini	Length (Miles)	Minority	% Minority	Minority Density (Persons per Acre)
			2000	2000	2000
Wake 1	UNC Hospitals - Wake Forest	59	46,165	43%	1.22
Wake 2	TMC - Wake Forest	33	18,010	32%	0.83
Wake 3	Veridea - Wake Forest	33	18,937	30%	0.87
Wake 4	Downtown Cary - Wake Forest	25	16,509	33%	1.01
Wake 5	State Fairgrounds - Wake Forest	20	12,694	32%	0.94
Wake 6	Downtown Raleigh - Wake Forest	17	9,434	33%	0.84
Wake 7	TMC - NERC	24	7,761	37%	1.44
Wake 8	NW Cary - NERC	18	16,337	33%	1.02
Wake 9	Downtown Cary - NERC	16	15,670	34%	1.32
Wake 10	State Fairgrounds - NERC	11	14,835	35%	1.40
Wake 11	Downtown Raleigh - NERC	8	11,021	35%	1.43
DO 1	UNC Hospitals - Wake Forest	59	46,165	43%	1.22
DO 2	Duke Medical - Downtown Raleigh	29	27,794	**48%**	**1.48**
DO 3	UNC Hospitals - TMC	26	28,184	**55%**	**1.71**
DO 4	UNC Hospitals - Alston Ave	17	23,827	**53%**	**2.12**
DO 5	UNC Hospitals - Gateway	7	3,067	24%	0.62
DO 6	Gateway - Alston Ave	10	20,989	**64%**	**3.05**

Note: The data listed in emboldened red are top performers for each respective evaluation criteria.

Figure 6.15 Percentage Minority (2000)

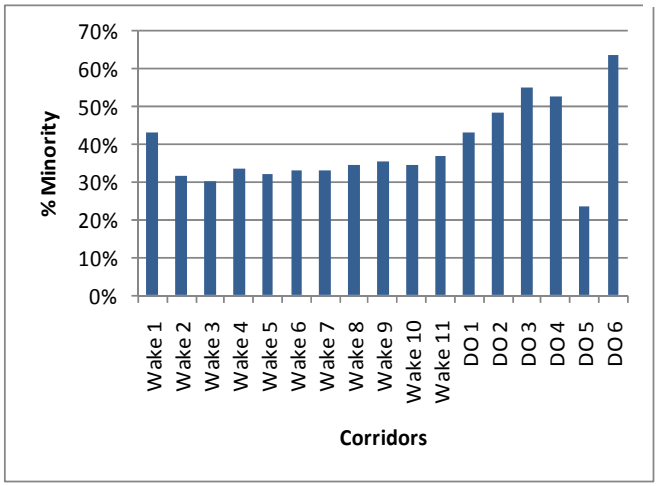


Figure 6.16 Minority Population Density (2000)

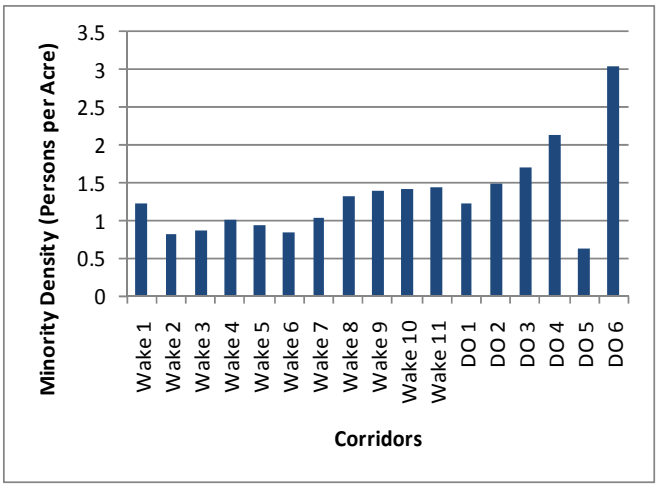
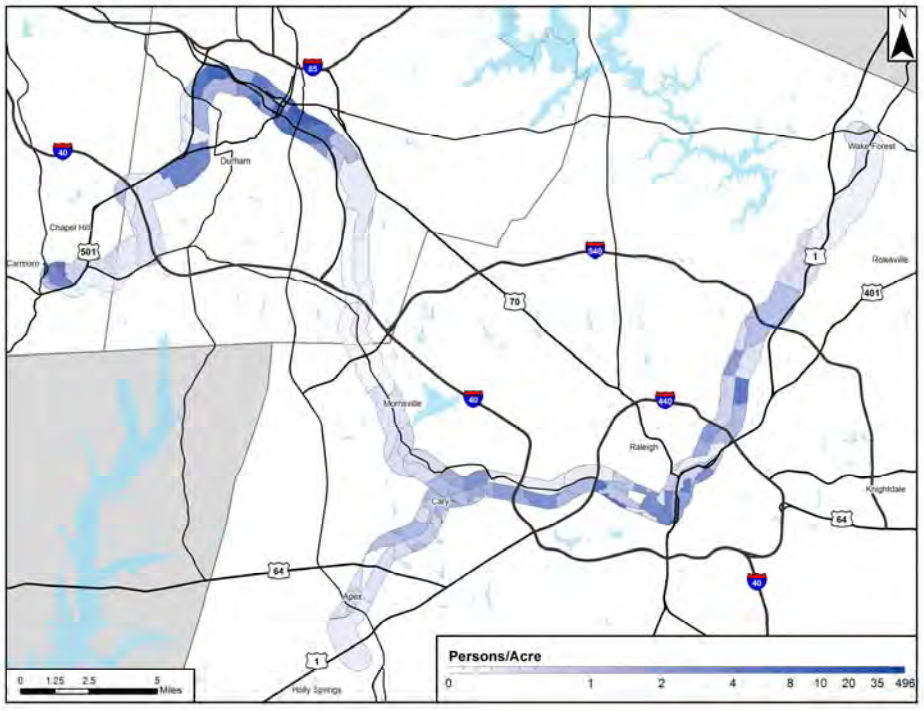


Figure 6.17 2000 Minority Population Density (Persons per Acre)



6.3 LAND USE

An analysis of land use within approximately ½ mile from the centerline of the proposed transit corridors was conducted to determine the degree to which current, proposed, and potential development patterns are supportive of transit. To help inform this analysis, interviews and/or correspondence with planning staff from most local jurisdictions and agencies were conducted to elicit information on the future development/redevelopment potential of affected land within their respective jurisdictions. Additionally, the most recent comprehensive and/or transportation plans for each jurisdiction were carefully reviewed.

The land use analysis for the 17 corridors was based on the following three key criteria:

- Public sector/regulatory support for Transit-Oriented Development (TOD)
    - Existing comprehensive plans consistent with TOD concepts
    - Level of public support for TOD
- Activity centers served
    - Urban centers: central business districts
    - Major activity centers: colleges and universities, employment centers
    - Special activity centers: fairgrounds, arenas, hospitals
- Development potential
    - Household and employment growth projections
    - Vacant developable land
    - Pipeline development
    - Small area plans
    - Level of potential value capture/public-private funding opportunities

6.3.1 PUBLIC SECTOR/REGULATORY SUPPORT FOR TRANSIT-ORIENTED DEVELOPMENT

To varying degrees, all of the jurisdictions within the Triangle Regional Transit Program acknowledge and recognize the potential for rail service and the implications for TOD in their most recent long range plans. Additional communication with planning staff in these jurisdictions confirms their respective commitments to TOD around transit stations and along transit corridors, and their intent to ensure land use regulations are transit supportive. In some cases, provisions have been made to prepare TOD supportive small area plans in the event a transit station should locate within a certain jurisdiction. The following criteria were used to evaluate the relative measures of public support for TOD:

- Comprehensive plans
- Zoning
- History of providing for TOD
- Other TOD policy tools

Table 6.9 contains excerpts from comprehensive and/or transportation plans pursuant to development around transit stations. In all cases, land use patterns with regard to transit are addressed, and transit supportive development is encouraged around stations. The results in Table 6.10 are based on a qualitative evaluation on the level of public sector support based on the consistency of comprehensive plans with TOD concepts, and the assessment of future land use provisions around proposed transit stations based on the criteria listed above.

Table 6.9 TOD Support from Plans

Planning Jurisdiction	Local Land Use	Transportation Plan
Town of Wake Forest	Increase the potential for transit ridership by indentifying and encouraging new development and redevelopment opportunities that support future transit plans.	"Promote future transit plans by encouraging transit-supportive design features in areas targeted (true compact mixed-use developments) for transit services such as likely station sites."[1]
City of Raleigh	"Highest density should occur…within close proximity to transit stations."[2] "Promote transit-oriented around planned transit stations through appropriate development regulation, education, station area planning, public-private partnerships, and regional cooperation."[3]	"Future land use should reflect the increasing use of and opportunities for mass transit over time."[2] "Sites within a half-mile of planned and proposed fixed guideway transit stations should be developed with intense residential and mixed-uses to take full advantage of and support the City and region's investment in transit infrastructure."[3]
Town of Cary	"Support multi-modal travel by facilitating imaginative planning for the Town's two station areas on the Triangle Transit Authority light rail line – focusing development at nodes instead of strip commercial development."[4]	"As Cary's population increases, a key to improving quality of life and reducing congestion lies in building home and jobs not just *near* transit, but *focused* on transit."[5]
Town of Apex	Apex Comprehensive Plan acknowledges the TTA regional rail transit system and the plans for a transit station in Apex.	N/A
Town of Morrisville	The Morrisville Land Use Plan has provisions for TOD at the proposed McCrimmon Parkway Station.	N/A
City of Durham/Durham County	"Development in Suburban Transit Areas shall…ensure that, at build-out, minimum required densities in a transit-supportive form shall be achieved."[6]	The City and County shall continue efforts to implement the Regional Rail Plan by designating Compact Neighborhoods around proposed regional rail transit stations and programming capital improvements that support mass transit in the vicinity of designated transit stations."[6]
Town of Chapel Hill	"a fixed guideway stop…should be combined with other civic, governmental, or mixed-use developments to provide alternatives to the use of the automobile and to enhance the pedestrian-oriented environment."[7]	"…a set of design guidelines to implement a TSD strategy is developed in this LRTP. The purpose of these TSD Design Guidelines is to ensure that new development around transit stops/stations/corridors supports transit use, encourages ridership, reduces auto dependency and leverages transit investment."[8]
Wake County	"The Board of Commissioners…endorsed an action agenda for regional public transportation, which included proposals to change land use patterns to support public transportation."[9]	Wake County Transportation Planning is coordinated with the Capital Area MPO planning program to plan for and guide transportation improvements in Wake County and public transportation in the Research Triangle Region.
Orange County	"Coordinate the location of higher intensity/density residential and non-residential developments with existing or planned locations of public transportation…" "Coordinate land use patterns to facilitate the expanded use of non-auto modes of travel…"[9]	"…expand the use of public transit (including bus and rail…"[10]
CAMPO/DCHCMPO	N/A	"Changes in development ordinances and policies encourage more population and employment development adjacent to future rail transit stations than Baseline, but overall regional growth is same as Baseline."[11]

[1]Wake Forest Transportation Plan; [2]Downtown Raleigh Comprehensive Plan; [3]City of Raleigh Comprehensive Plan; [4]Town of Cary Comprehensive Transportation Plan; [5]Town of Cary Comprehensive Plan; [6]Durham Comprehensive Plan; [7]Downtown Chapel Hill Small Area Plan; [8]Chapel Hill/Carrboro Long Range Transit Plan; [9]Wake County Comprehensive Plan; [10]Orange County Comprehensive Plan; [11]Research Triangle Region – 2035 Long Range Transportation Plan

Table 6.10 Public Sector/Regulatory Support for TOD

Alternatives	Termini	Impacted Jurisdictions	Public Sector Support
Wake 1	UNC Hospitals - Wake Forest	WF, R, C, M, W, D	High
Wake 2	TMC - Wake Forest	WF, R, C, M, W, D	High
Wake 3	Veridea - Wake Forest	WF, R, C, A, W	High/ Moderate
Wake 4	Downtown Cary - Wake Forest	WF, R, C, W	High/ Moderate
Wake 5	State Fairgrounds - Wake Forest	WF, R, W	High
Wake 6	Union Station - Wake Forest	WF, R, W	High
Wake 7	TMC - NERC	R, C, W, M, D	Moderate
Wake 8	NW Cary - NERC	R, C, W	High/ Moderate
Wake 9	Downtown Cary - NERC	R, C, W	High/ Moderate
Wake 10	State Fairgrounds - NERC	R, C, W	High/ Moderate
Wake 11	Union Station - NERC	R, C, W	High/ Moderate
DO 1	UNC Hospitals - Wake Forest	WF, R, C, M, W, D	High
DO 2	Duke Medical - Downtown Raleigh	R, C, M, D, W	High/ Moderate
DO 3	UNC Hospitals - TMC	D, CH, O	High/ Moderate
DO 4	UNC Hospitals - Alston Ave	D, CH, O	Moderate
DO 5	UNC Hospitals - Gateway	D, CH, O	High/ Moderate
DO 6	Gateway - Alston Ave	D	High/ Moderate

Key: WF-Wake Forest, R-Raleigh, C-Cary, A-Apex, M-Morrisville, D-Durham, CH-Chapel Hill, W-Wake County, O-Orange County

6.3.2 ACTIVITY CENTERS SERVED

Activity Centers are areas with mixed or multiple land uses or unique facilities that generate the inflow and outflow of people. For the purposes of this analysis, Activity Centers are grouped into three major categories:

- Urban Centers — comprised of the urban cores, or downtowns, of Chapel Hill, Durham, Apex, Cary, Raleigh and Wake Forest. Downtowns are typified by their high concentrations of employment and a daytime population that commutes into and out of the urban core on a daily basis, five days a week.
- Major Activity Centers
    - Colleges and universities: include UNC, Duke, NC Central, NC State, Meredith College, and Peace College. The two largest institutions in this group are UNC, with approximately 29,000 students and 7,000 faculty and staff, and NC State, with approximately 31,000 students and 8,000 faculty and staff. It is estimated that over half of the students commute to classes at each university.
    - Suburban employment nodes and corridors: include NC 54 Corridor, Glenn Lennox, East 54, Meadowmont, Leigh Village, Gateway East, I-40, Research Triangle Park, State Government Center, and the North East Regional Center
- Special Activity Centers
    - Hospitals: UNC, Duke
    - Event centers: State Fairgrounds, Carter Finley Stadium, RBC Center

Table 6.11 shows the number of Activity Centers within each of the 17 proposed transit corridor alternatives, and an evaluation of the level of transit support based on the absolute number of Activity Centers served within a given corridor.

Table 6.11 Activity Centers

Alternatives	Termini	Urban Centers	Major Activity	Special Activity	Total	Transit Supportive
Wake 1	UNC Hospitals - Wake Forest	4	10	3	17	High
Wake 2	TMC - Wake Forest	3	6	3	12	High/ Moderate
Wake 3	Veridea - Wake Forest	4	5	3	12	High/ Moderate
Wake 4	Downtown Cary - Wake Forest	3	5	3	11	High/ Moderate
Wake 5	State Fairgrounds - Wake Forest	2	4	3	9	Moderate
Wake 6	Union Station - Wake Forest	2	5	3	10	Moderate
Wake 7	TMC - NERC	2	6	3	11	High/ Moderate
Wake 8	NW Cary - NERC	2	5	3	10	Moderate
Wake 9	Downtown Cary - NERC	2	5	3	10	Moderate
Wake 10	State Fairgrounds - NERC	1	5	3	9	Moderate
Wake 11	Union Station - NERC	1	3	0	4	Low
DO 1	UNC Hospitals - Wake Forest	4	10	3	17	High
DO 2	Duke Medical - Downtown Raleigh	3	7	2	12	High/ Moderate
DO 3	UNC Hospitals - TMC	1	6	2	9	Moderate
DO 4	UNC Hospitals - Alston Ave	1	7	2	10	Moderate
DO 5	UNC Hospitals - Gateway	0	7	1	8	Moderate
DO 6	Gateway - Alston Ave	1	4	1	6	Low/Moderate

6.3.3 DEVELOPMENT POTENTIAL

Development potential for each proposed transit corridor alternative is categorized as high, moderate, or low, or a combination thereof (see Table 6.12), and is derived from a number of factors: amount of vacant land or opportunity sites near proposed transit stations; unit counts and square footages of improvements associated with projects in the development pipeline; regulatory support for TOD within affected jurisdictions; and MPO projections for increases in households and employment within the alternatives.

Table 6.12 Development Potential

Alternatives	Termini	Development Potential
Wake 1	UNC Hospitals - Wake Forest	Low/Moderate
Wake 2	TMC - Wake Forest	Moderate
Wake 3	Veridea - Wake Forest	Moderate
Wake 4	Downtown Cary - Wake Forest	Moderate
Wake 5	State Fairgrounds - Wake Forest	Moderate
Wake 6	Union Station - Wake Forest	Moderate
Wake 7	TMC - NERC	High
Wake 8	NW Cary - NERC	High/Moderate
Wake 9	Downtown Cary - NERC	High/Moderate
Wake 10	State Fairgrounds - NERC	High/Moderate
Wake 11	Union Station - NERC	High/Moderate
DO 1	UNC Hospitals - Wake Forest	Low/Moderate
DO 2	Duke Medical - Downtown Raleigh	High/ Moderate
DO 3	UNC Hospitals - TMC	Low/Moderate
DO 4	UNC Hospitals - Alston Ave	Low/Moderate
DO 5	UNC Hospitals - Gateway	Low
DO 6	Gateway - Alston Ave	Low/Moderate

6.4 FINANCIAL

An analysis of the capital costs as well as the operating and maintenance costs was conducted in order to determine the most cost-effective corridor segments in the overall rail plan.

6.4.1 CAPITAL COSTS

Total capital cost provides a basic assessment of the overall capital cost of each corridor. Among the 17 study corridors, the segments traveling from UNC Hospitals to Wake Forest (W1 and DO1) had the highest overall capital cost, as shown in Table 6.13. This is not surprising, as these two alternatives are the longest corridors under consideration. Likewise, the study corridor extending from UNC Hospitals to Gateway (DO5) had the lowest overall capital cost. The capital costs presented are in 2010 dollars and are fully loaded costs, including construction; maintenance facilities; right-of-way; and a 30% allocated contingency (design/estimating contingency); a 30% allocation for engineering, administrative, and construction management cost; and a 5% unallocated contingency (construction contingency).

Table 6.13 Capital Costs

Corridors	Termini	Length[1] (Miles)	Total Capital Cost (M$)	Capital Cost per Mile (M$)	Capital Cost[2] per Weekday Rail Trip ($)	Capital Cost[2] per Weekday Passenger Mile ($)
Wake 1	UNC Hospitals - Wake Forest	57	$ 3,502	**$ 61**	$ 56	**$ 6**
Wake 2	TMC - Wake Forest	32	$ 1,916	**$ 59**	$ 62	$ 10
Wake 3	Veridea - Wake Forest	32	$ 1,965	**$ 61**	$ 61	**$ 9**
Wake 4	Downtown Cary - Wake Forest	24	$ 1,477	$ 62	$ 66	$ 12
Wake 5	State Fairgrounds - Wake Forest	20	$ 1,211	$ 62	$ 70	$ 14
Wake 6	Downtown Raleigh - Wake Forest	16	$ 1,009	$ 64	$ 90	$ 21
Wake 7	TMC - NERC	24	$ 1,485	**$ 61**	**$ 53**	$ 10
Wake 8	NW Cary - NERC	18	$ 1,144	$ 64	**$ 54**	$ 12
Wake 9	Downtown Cary - NERC	16	$ 1,044	$ 65	**$ 54**	$ 12
Wake 10	State Fairgrounds - NERC	12	$ 784	$ 67	$ 55	$ 17
Wake 11	Downtown Raleigh - NERC	8	$ 582	$ 74	$ 69	$ 27
DO1	UNC Hospitals - Wake Forest	57	$ 3,502	**$ 61**	$ 56	**$ 6**
DO 2	Duke Medical - Downtown Raleigh	28	$ 1,677	**$ 59**	$ 65	**$ 8**
DO 3	UNC Hospitals - TMC	25	$ 1,621	$ 65	$ 61	**$ 9**
DO 4	UNC Hospitals - Alston Ave	17	$ 1,171	$ 68	$ 55	$ 10
DO 5	UNC Hospitals - Gateway	7	$ 470	$ 66	**$ 53**	$ 25
DO 6	Gateway - Alston Ave	10	$ 750	$ 74	$ 68	$ 15

1 Corridor lengths differ slightly from previous analysis sections due to rounding and design detail used for cost projections.

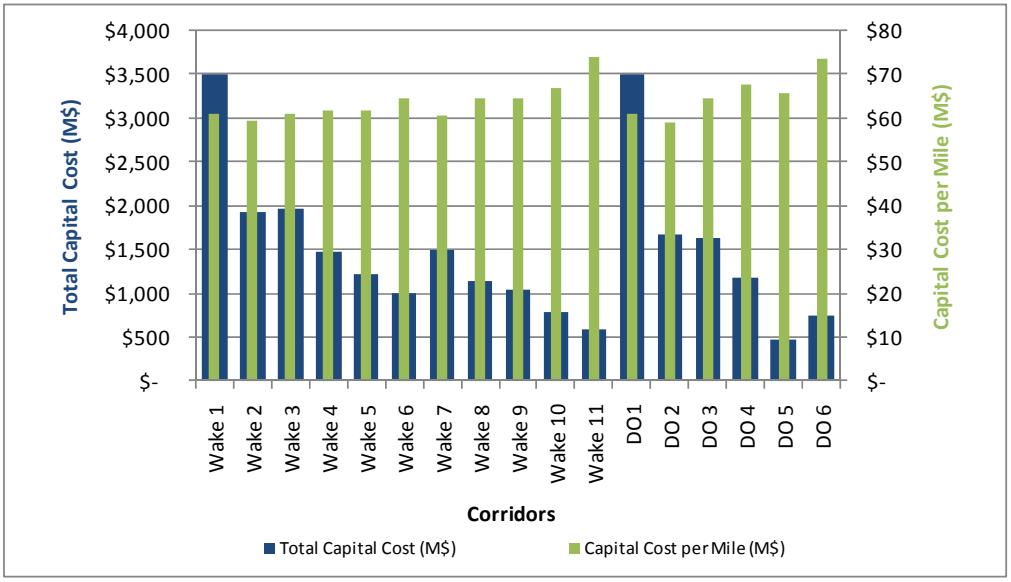
2 Annual amortized capital cost

Note: The data listed in emboldened red are top performers for each respective evaluation criteria.

Capital Cost per Mile

The total capital cost per mile provides a good indication of capital costs while controlling for the disparate lengths of each corridor. Among the 17 study corridors, the alternatives extending from the Triangle Metro Center to Wake Forest (W2), Veridea to Wake Forest (W3), TMC to NERC (W7), and Duke Medical to Downtown Raleigh (DO2) had the lowest capital cost per mile, as shown on Figure 6.18. The study corridors extending from Downtown Raleigh to NERC (W11) and Gateway to Alston Ave (DO6) had the highest capital cost per mile, as shown on Figure 6.18.

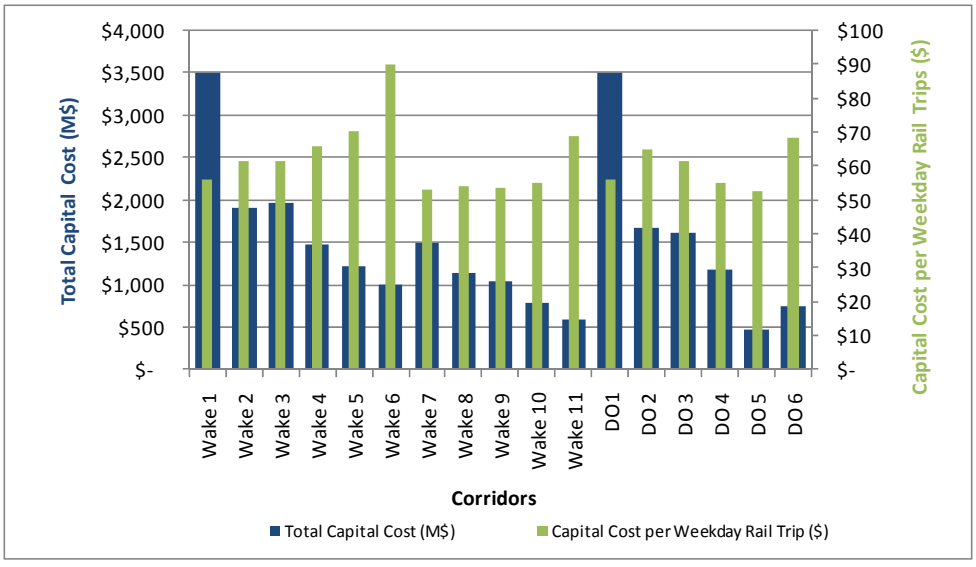
Figure 6.18 Capital Cost per Mile



Capital Cost per Rail Trip

Capital cost per rail trip is an important measure of cost effectiveness, allowing an evaluation of both ridership and capital cost. Annual capital costs were calculated by amortizing total capital costs over the useful life of each capital expense according to FTA guidelines. Among the 17 study corridors, the alternatives extending from western Wake County to NERC (W7, W8, and W9) and the alternative extending from UNC Hospitals to Gateway (DO5) had the lowest annual capital cost per weekday rail trip. Likewise, the study corridors extending from the State Fairgrounds and Downtown Raleigh to Wake Forest (W5 and W6) as well as the corridor extending from Gateway to Alston Ave (DO6) had the highest annual capital cost per weekday rail trip.

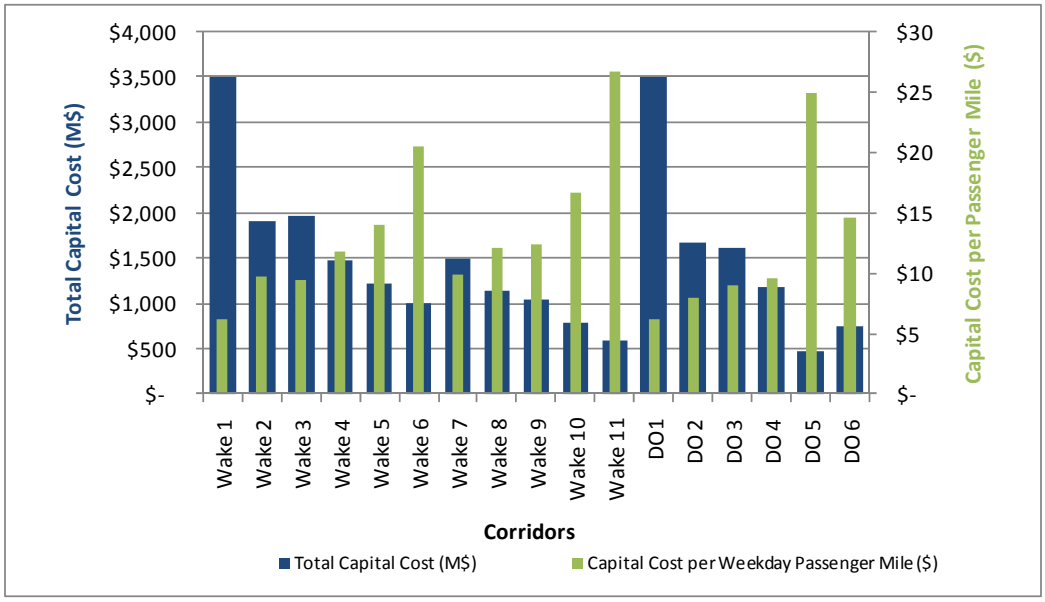
Figure 6.19 Capital Cost per Trip



Capital Cost per Rail Passenger Mile Traveled

This criterion allows an evaluation of cost vs. ridership while controlling for the lengths of passenger trips. Annual capital costs were calculated by amortizing total capital costs over the useful life of each capital expense according to FTA guidelines. Among the 17 study corridors, the alternatives extending from UNC Hospitals to Wake Forest (W1 and DO1), Duke Medical to Downtown Raleigh (DO2), and UNC Hospitals to Triangle Metro Center (DO3) had the lowest annual capital cost per rail mile traveled. The study corridors extending from UNC Hospitals to Gateway (DO5) and Downtown Raleigh to NERC (W11) had the highest annual capital cost per rail passenger mile traveled.

Figure 6.20 Capital Cost per Passenger Mile Traveled



6.4.2 Operating and Maintenance (O&M) Costs

This criterion provides a basic evaluation of each corridor's annual operating and maintenance costs. Among the 17 study corridors, the alternatives extending from UNC Hospitals to Gateway (DO5), Downtown Raleigh to NERC (DO11), Gateway to Alston Ave (DO6), and the State Fairgrounds to NERC (W10) had the lowest overall operating and maintenance costs. The study corridors extending from UNC Hospitals to Wake Forest (W1 and DO1) had the highest overall O&M costs.

Table 6.14 Operating and Maintenance Costs Fix the 1 at the top of the third column.

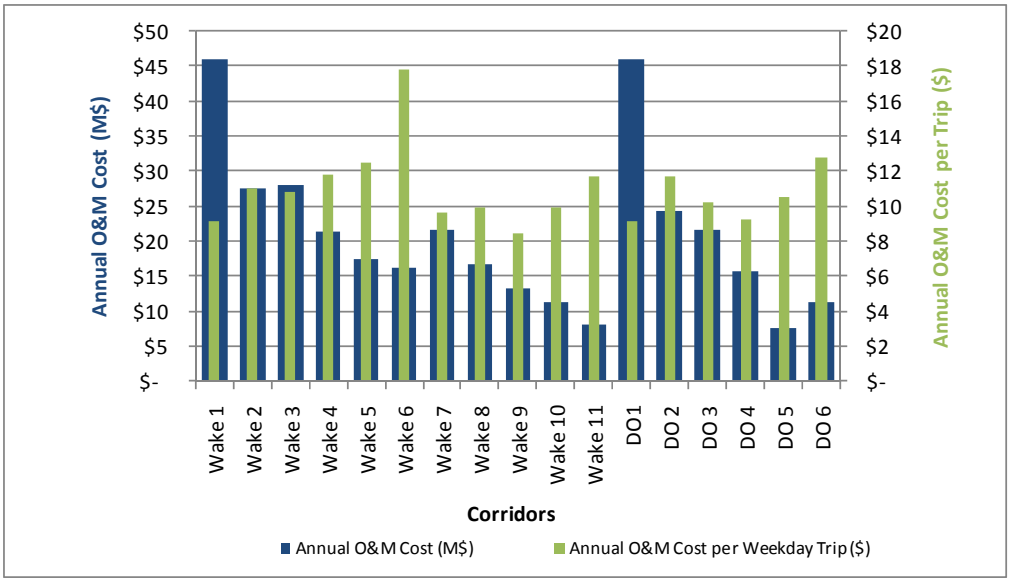
Corridors	Termini	Length (Miles)	O&M Cost per Year (M$) 1	Annual O&M Cost per Trip ($)	Annual O&M Cost per Passenger Mile ($)
Wake 1	UNC Hospitals - Wake Forest	57	$ 46	**$ 9**	**$ 1**
Wake 2	TMC - Wake Forest	32	$ 28	$ 11	$ 2
Wake 3	Veridea - Wake Forest	32	$ 28	**$ 11**	**$ 2**
Wake 4	Downtown Cary - Wake Forest	24	$ 21	$ 12	$ 2
Wake 5	State Fairgrounds - Wake Forest	20	$ 17	$ 13	$ 2
Wake 6	Downtown Raleigh - Wake Forest	16	$ 16	$ 18	$ 4
Wake 7	TMC - NERC	24	$ 22	$ 10	$ 2
Wake 8	NW Cary - NERC	18	$ 17	$ 10	$ 2
Wake 9	Downtown Cary - NERC	16	$ 13	**$ 9**	$ 2
Wake 10	State Fairgrounds - NERC	12	$ 11	$ 10	$ 3
Wake 11	Downtown Raleigh - NERC	8	$ 8	$ 12	$ 5
DO1	UNC Hospitals - Wake Forest	57	$ 46	**$ 9**	**$ 1**
DO 2	Duke Medical - Downtown Raleigh	28	$ 24	$ 12	**$ 1**
DO 3	UNC Hospitals - TMC	25	$ 22	$ 10	**$ 2**
DO 4	UNC Hospitals - Alston Ave	17	$ 16	**$ 9**	$ 2
DO 5	UNC Hospitals - Gateway	7	$ 8	$ 11	$ 5
DO 6	Gateway - Alston Ave	10	$ 11	$ 13	$ 3

Note: The data listed in emboldened red are top performers for each respective evaluation criteria.

Annual Operating and Maintenance Cost per Rail Trip

As with section 6.4.3, this criterion is an important measure of cost effectiveness, providing an evaluation of ridership vs. the annual cost necessary to operate and maintain each study corridor. Among the 17 study corridors, the alternatives extending from Downtown Cary to NERC (W9), UNC Hospitals to Wake Forest (W1 and DO1), and UNC Hospitals to Alston Ave (DO4) had the lowest O&M cost per rail trip. The study corridors extending from Downtown Raleigh to Wake Forest (W6) and Gateway to Alston Ave (DO6) had the highest O&M cost per rail trip.

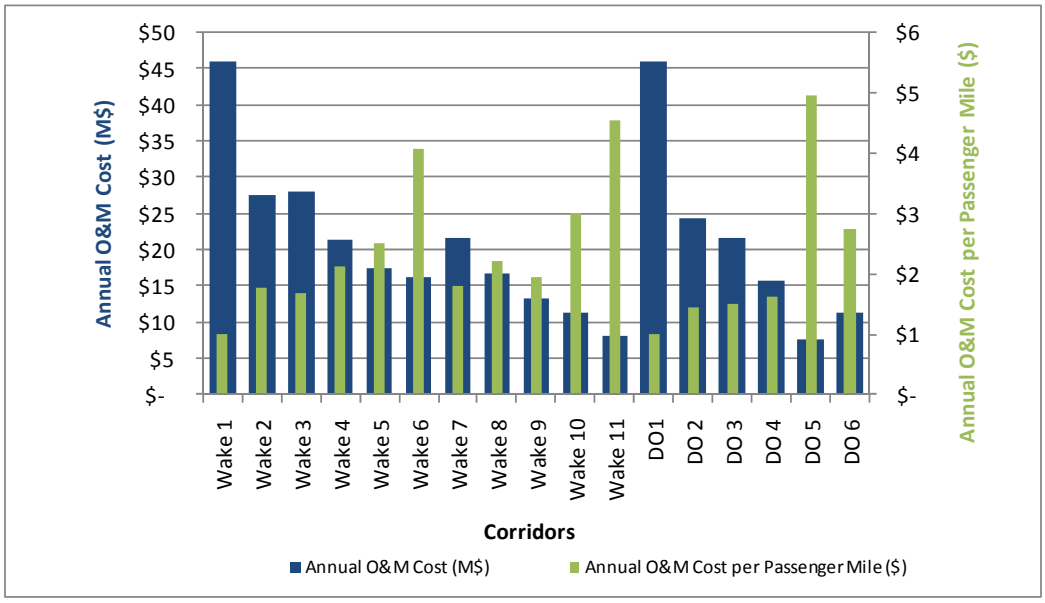
Figure 6.21 Operating and Maintenance Cost per Trip



Annual Operating and Maintenance Cost per Rail Passenger Mile Traveled

This criterion allows an evaluation of cost vs. ridership while controlling for the lengths of passenger trips. Among the 17 study corridors, the alternatives extending from UNC Hospitals to Wake Forest (W1 and DO1), Duke Medical to Downtown Raleigh (DO2), and UNC Hospitals to Triangle Metro Center (DO3) had the lowest O&M cost per rail passenger mile traveled. The study corridors extending from UNC Hospitals to Gateway (DO5) and Downtown Raleigh to NERC (W11) had the highest O&M cost per rail passenger mile traveled.

Figure 6.22 Operating and Maintenance Cost per Passenger Mile Traveled



CHAPTER 7. SELECTION OF PRIORITY CORRIDORS

7.1 PURPOSE

The purpose of the Transitional Analysis document is to identify two priority corridors (one in Wake County and one in Durham-Orange Counties) to study in more detail in the Alternatives Analysis. The corridors identified and described in Chapter 4 were analyzed, evaluating mobility, socio-economic conditions, land use, and costs. The results of the analysis are described in Chapter 6. This chapter summarizes the highest performing corridors in Wake and Durham-Orange Counties and recommends two priority corridors to carry forward to the Alternatives Analysis.

It is recommended that the regional alternative described in Chapter 4, from West Durham to the Johnston County line, be studied further for a possible commuter rail style service.

7.2 WAKE COUNTY

Eleven corridors in Wake County were evaluated, the results of which can be seen in Table 7.1. A summary of the findings and a recommendation are provided below.

Table 7.1 Evaluation Criteria Summary (Wake County)

		Mobility	Socioeconomic				Land Use			Financial		
Study Corridor	Corridor Length (mi)	Rail Trips/Mile	Population Density	Employment Density	Low Income Population Density	Minority Population Density	Supports Transit Oriented Development	Activity Centers Served	Development Potential	Capital Cost per Mile	Capital Cost/ Weekday Transit Trip	Operating & Maintenance Cost/ Weekday Transit Trip
Wake Alternative 1 UNC Hospitals to Wake Forest	59	◐	○	○	◐	◐	●	●	○	●	●	●
Wake Alternative 2 Triangle Metro Center to Wake Forest	33	◐	◐	○	○	○	●	●	◐	●	◐	◐
Wake Alternative 3 Veredia to Wake Forest	33	◐	◐	○	○	○	●	●	◐	●	◐	◐
Wake Alternative 4 Downtown Cary to Wake Forest	25	○	◐	◐	◐	◐	●	●	◐	●	○	◐
Wake Alternative 5 State Fairgrounds to Wake Forest	20	○	◐	◐	◐	○	●	◐	◐	●	○	○
Wake Alternative 6 Downtown Raleigh to Wake Forest	17	○	◐	◐	○	○	●	◐	◐	◐	○	○
Wake Alternative 7 Triangle Metro Center to NERC	24	◐	◐	◐	◐	◐	◐	●	●	●	●	●
Wake Alternative 8 Northwest Cary to NERC	18	◐	●	◐	◐	◐	●	◐	●	◐	●	●
Wake Alternative 9 Downtown Cary to NERC	16	●	●	●	◐	◐	●	◐	●	◐	●	●
Wake Alternative 10 State Fairgrounds to NERC	11	●	●	●	◐	◐	●	◐	●	○	●	●
Wake Alternative 11 Downtown Raleigh to NERC	8	◐	●	●	◐	◐	●	○	●	○	○	◐

● = High Performer ◐ = Average Performer ○ = Low Performer = Highest Overall Performing Corridors

7.2.1 MOBILITY

As indicated in Table 7.1, Wake Alternatives 9 and 10 have the highest performance in terms of rail trips per mile.

7.2.2 SOCIO-ECONOMIC

As indicated in Table 7.1, Wake Alternatives 8, 9, 10, and 11 have the highest population density in 2035. Wake Alternatives 9, 10, and 11 have the highest employment density in 2035. From 2000 U.S. Census data, Wake Alternatives 1, 4, 5, 7, 8, 9, 10, and 11 had the highest density of persons below the poverty level. Similarly, Wake Alternatives 1, 4, 7, 8, 9, 10, and 11 had the highest density of minority persons.

7.2.3 LAND USE

As indicated in Table 7.1, an evaluation of support for transit-oriented development showed high performance levels for all but Wake Alternative 7. An evaluation of activity centers served resulted in the highest performance levels for Wake Alternatives 1, 2, 3, 4, and 7. In terms of the potential for development, Wake Alternatives 7, 8, 9, 10, and 11 are highest.

7.2.4 FINANCIAL

As indicated in Table 7.1, an evaluation of capital cost per mile showed the highest performance for Wake Alternatives 1, 2, 3, 4, 5, and 7. An evaluation of capital cost per weekday trip resulted in the highest performance for Wake Alternatives 1, 7, 8, 9, and 10. Similarly, an evaluation of operating and maintenance cost per weekday transit trip resulted in the highest performance for Wake Alternatives 1, 7, 8, 9, and 10.

7.2.5 CONCLUSIONS

Results of the analysis indicate that Wake Alternatives 9 (from Downtown Cary to the Northeast Regional Center) and 10 (from the State Fairgrounds to the Northeast Regional Center) are the overall highest performers. Primary discriminators between the alternatives include mobility and cost-effectiveness, as discussed here:

- Wake Alternatives 9 and 10 have the highest daily rail trip estimates on a per mile basis, with 394 and 402 rail trips per mile respectively. The comparatively stronger ridership is a reflection of the large concentrations of people living within the vicinity of the corridors and the number of dense employment nodes – including downtown Raleigh, NERC, and Cary – that are served by both corridors.

- From a cost perspective, Wake Alternatives 9 and 10 are relatively expensive to build when compared to other corridors on a cost per mile basis. Wake Alternatives 9 and 10 would cost $65M per mile and $67M per mile respectively. The higher cost, as compared with other corridors, can be attributed to more expensive infrastructure needs related to limited right-of-way and required infrastructure improvements, particularly in the vicinity of downtown Raleigh. On a per mile basis, longer corridors can spread out the costs associated with these infrastructure upgrades. Unlike other corridors however, Wake Alternative 9, which is 16 miles and Wake Alternative 10, which is 12 miles, are not long enough to spread out the costs of the infrastructure improvements required in the vicinity of downtown Raleigh.

- Although they are higher on a capital cost per mile basis than other corridors, Wake Alternatives 9 and 10 perform relatively well in terms of cost effectiveness due to their strong ridership. The capital cost per transit trip for Wake Alternative 9 is approximately $54 per trip and the capital cost per transit trip for Wake Alternative 10 is approximately $55 per trip.

While Wake Alternatives 9 and 10 are the overall strongest performers among the Wake corridors, it is recommended that Wake Alternative 8, which extends the transit line an additional 2 miles from downtown Cary to NW Cary, be considered for more detailed study. A terminal station in downtown Cary would be problematic due to limited property available for locating an end-of-line park and ride and a potential transit maintenance or layover facility. A relatively short extension to NW Cary, therefore, would improve the feasibility of this corridor by

providing more opportunities to locate a park-and-ride and related transit infrastructure and potentially increasing ridership.

Preliminary Technical Recommendation: Given these considerations, it is initially recommended that Wake Alternative 8, which travels between Northwest Cary and the Northeast Regional Center, be advanced to a detailed Alternatives Analysis.

7.3 DURHAM-ORANGE COUNTIES

The project team evaluated a total of six corridors in Durham and Orange counties, the results of which can be seen in Table 7.2. A summary of the findings and a recommendation are provided below.

Table 7.2 Evaluation Criteria Summary (Durham-Orange Counties)

		Mobility	Socioeconomic				Land Use			Financial		
Study Corridor	Corridor Length (mi)	Rail Trips/Mile	Population Density	Employment Density	Low Income Population Density	Minority Population Density	Supports Transit Oriented Development	Activity Centers Served	Development Potential	Capital Cost per Mile	Capital Cost/ Weekday Transit Trip	Operating & Maintenance Cost/ Weekday Transit Trip
Durham-Orange Alternative 1 UNC Hospitals to Wake Forest	59	◑	○	○	◑	◑	●	●	○	●	●	●
Durham-Orange Alternative 2 Duke Medical to Downtown Raleigh	29	○	◑	◑	◑	◑	◑	●	●	●	○	◑
Durham-Orange Alternative 3 UNC Hospitals to Triangle Metro Center	26	◑	○	○	●	●	◑	◑	○	◑	◑	◑
Durham-Orange Alternative 4 UNC Hospitals to Alston Ave	17	●	○	◑	●	●	○	◑	○	○	●	●
Durham-Orange Alternative 5 UNC Hospitals to Gateway	7	●	○	○	◑	○	◑	◑	○	◑	●	◑
Durham-Orange Alternative 6 Gateway to Alston Ave	10	◑	◑	●	●	●	◑	○	○	○	○	○

● = High Performer ◑ = Average Performer ○ = Low Performer ▭ = Highest Overall Performing Corridors

7.3.1 MOBILITY

As indicated in Table 7.2, an evaluation of total rail trips per mile resulted in the highest performance for Durham-Orange Alternatives 4 and 5.

7.3.2 SOCIO-ECONOMIC

As indicated in Table 7.2, an evaluation of population density in 2035 resulted in the highest performance for Durham-Orange 6. An evaluation of employment density in 2035 resulted in the highest performance of Durham-Orange Alternative 6. Durham-Orange Alternatives 3, 4, and 6 demonstrated the highest levels of density for persons below the poverty level and density of minority persons.

7.3.3 LAND USE

As indicated in Table 7.2, an evaluation of support for transit oriented development resulted in high performance levels for all but Durham-Orange Alternative 4. An evaluation of activity centers served within the corridor resulted in the highest performance of Durham-Orange Alternatives 1 and 2. In terms of the potential for development, Durham-Orange Alternative 2 is highest.

7.3.4 FINANCIAL

As indicated in Table 7.2, an evaluation of capital cost per mile resulted in the highest performance for Durham-Orange Alternatives 1 and 2. An evaluation of capital cost per weekday trip resulted in the highest performance for Durham-Orange Alternatives 4 and 5. An

evaluation of operating and maintenance costs per weekday transit trip resulted in the highest performance for Durham-Orange Alternatives 1 and 4.

7.3.5 CONCLUSIONS

Results of the analysis indicate that Durham-Orange Alternatives 4 (from UNC Hospitals to Alston Avenue), 5 (from UNC Hospitals to Gateway) and 6 (from Gateway to Alston Avenue) are the overall highest performers (note that Alternatives 5 and 6 are subsets of Alternative 4). Primary discriminators between the alternatives include mobility, socio-economics and cost-effectiveness, as discussed here:

- Durham-Orange Alternatives 4 and 5 have the highest daily rail trip estimates on a per mile basis, with 394 and 399 rail trips per mile respectively. This primarily reflects the high employment at UNC and UNC Hospitals, Duke University and Duke Medical Center, and downtown Durham. Several significant mixed-use developments also exist or are planned within the corridor.

- Durham-Orange Alternatives 4 and 6, both of which terminate at Alston Avenue, are the most effective at reaching transit dependent populations.

- From a cost perspective, Durham-Orange Alternatives 4 and 5 are relatively more expensive to build compared to other corridors ($68M per mile and $66M per mile respectively). This is because these corridors are primarily on new alignment that requires more right-of-way acquisition and infrastructure improvements than alternative corridors that use existing railroad right-of-way (e.g., Durham-Orange Alternatives 1 and 2).

- Although they are higher on a capital cost per mile basis than other corridors, Durham-Orange Alternatives 4 and 5 perform better in terms of cost effectiveness due to their strong ridership. The capital cost per transit trip for Durham-Orange Alternative 4 and 5 is approximately $55 and $53 per transit trip, respectively.

Preliminary Technical Recommendation: Since Durham-Orange Alternative 4 is the combination of Durham-Orange Alternatives 5 and 6, it is recommended that Durham-Orange Alternative 4 be advanced to a detailed Alternatives Analysis.

Durham-Orange Alternative 2 (from Duke Medical Center to downtown Raleigh) was average in terms of socio-economic and strong in land-use factors, but not strong in terms of mobility and costs. Cost-effectiveness would improve if costs could be reduced. The ridership may have been low in part because the ridership model assumed light rail-type service rather than commuter rail-type service, which may be more appropriate for this corridor. For this initial study, costs assumed light rail transit, which is significantly more expensive than commuter rail, which uses primarily existing infrastructure. For these reasons, it is recommended that the Durham to Raleigh connection be studied as part of a regional rail service that could extend as far east as the Johnston County line.

7.4 OTHER CONSIDERATIONS

With this recommendation, rail transit extensions to the Research Triangle Park, Wake Forest, Apex, and points beyond are not carried forward for further consideration in the more detailed

Alternatives Analysis studies. This initial recommendation does not, however, mean that service to these areas would be eliminated; it simply recognizes that they will be studied in greater detail at a later time. These extensions are truly noteworthy as the system expands, but the purpose of this first set of Alternative Analysis studies is to focus on the most effective corridors for initial transit investment and implementation. This is the formula other cities have used to develop and implement system-wide extensions.

Therefore, for those areas of the region that are not directly considered for initial detailed study in the Alternatives Analysis, the project team recommends the following:

- Extension of LRT to Garner: Technical memorandum detailing the future extension of the rail transit service from Raleigh to Garner.

- Extensions of commuter rail to Wake Forest and Apex: Technical memorandums analyzing implementation of commuter rail service to Wake Forest and Apex. (This has been suggested by CAMPO as a viable alternative). Considerations could include the following: termini, freight alignments, operations, and cost.

- Extension to Carboro: Technical memorandum analyzing the immediate needs of the Town of Carrboro. It is recommended that a separate study be conducted on potential route alignment extension(s) including order of magnitude costs for an initial phase extension (i.e. possibly Franklin Street) along with discussions how this alignment will operate in conjunction with the initial segment of the light rail corridor in the alternatives analysis.

- Extension of commuter rail service to Hillsboro and Zebulaon: There have been requests for extensions to both Hillsboro and to Zebulon to be included in the study. The purpose of the Transitional Analysis is to determine the priority corridors for early implementation but not preclude future extensions. White papers further discussing these two extensions are included as Appendix A and B.

When completed, the memorandums will be included as Appendices to this Transitional Analysis before it is finalized. These memorandums, along with the results of the Alternatives Analysis process can be used by both the Capital Area MPO and the Durham Chapel Hill Carrboro MPO as input to the updates of their respective long range transportation plans.

APPENDICES

Appendix A

White Paper Study of Commuter Rail to Zebulon

Memorandum

MARTIN ALEXIOU BRYSON

Transportation Planning
Traffic Engineering

To:	Greg Northcutt, Triangle Transit
From:	George Alexiou, PE
Date:	June 9, 2010
Subject:	Raleigh to Eastern Wake County Corridor Rail Service

This memo provides an explanation for not including the eastern Wake County rail corridor as part of the alternatives analysis studies currently being conducted by Triangle Transit in anticipation of a ½ cent sales tax referendum for funding transit improvements in the Triangle region. The potential for passenger rail service in the Raleigh to East Wake County corridor has been considered since 2001, with the creation of the Eastrans Commuter Rail Alliance by the Town of Knightdale as part of its Comprehensive Plan Update process. Since 2001, two additional studies have analyzed the potential viability of this corridor for passenger rail service.

Eastrans Study

In 2003, the Town of Knightdale commissioned a feasibility study for passenger rail service along two corridors, one between Raleigh and Wilson and the other between Raleigh and Goldsboro. This study, called the Eastrans Commuter Rail Feasibility Study (Eastrans Study), included an analysis of the costs and feasibility of providing passenger rail service from Raleigh to Zebulon. However, no ridership projections were done as part of the study, as it was outside of the scope of work. Based primarily on cost, the study concluded that rail service may be feasible and further study was warranted, and that in order to move the project forward, it would need to be included in the Long Range Transportation Plan for the Triangle Region.

STAC Process

The Raleigh to Zebulon corridor was evaluated by the Special Transit Advisory Commission (STAC), a cooperative regional effort of leaders appointed in 2007 by the Capital Area Metropolitan Planning Organization (CAMPO) and the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC) to develop a Regional Transit Vision Plan. This Plan would be the basis for the transit component of the Long Range Transportation Plan. The Raleigh to Zebulon corridor was one of 16 corridors evaluated in terms of feasibility and potential ridership (see Figure 1). Summary findings for all corridors are shown in Table 1. The study determined that the Raleigh to Zebulon corridor did not rank in the top four among the study corridors for any of the studied measures, which included: transit intensity, total daily trips, in-corridor daily trips, in-corridor daily trips per acre, and in-corridor daily trips among households most likely to use transit. Only corridors ranked among the top four were included in the Vision Plan. Based on 2035 projections using the Triangle Regional Model, the number of in-corridor trips per acre is not expected to increase to a level supportive of rail transit (see Figure 2).

Long Range Transportation Plan

The 2035 Long Range Transportation Plan (LRTP) for the region's two MPOs was updated and released in May 2009. The LRTP is a federally-mandated process and document that is used for important transportation investment and programming decisions. Only projects that appear in a Long Range Transportation Plan may be included for funding in the Transportation Improvement Program which is the mechanism for all major funding. Comments from public and private transportation providers were solicited throughout the planning process, and a 42-day public comment period was provided for the proposed plan in accordance with the Public Involvement Procedures adopted by the MPOs.

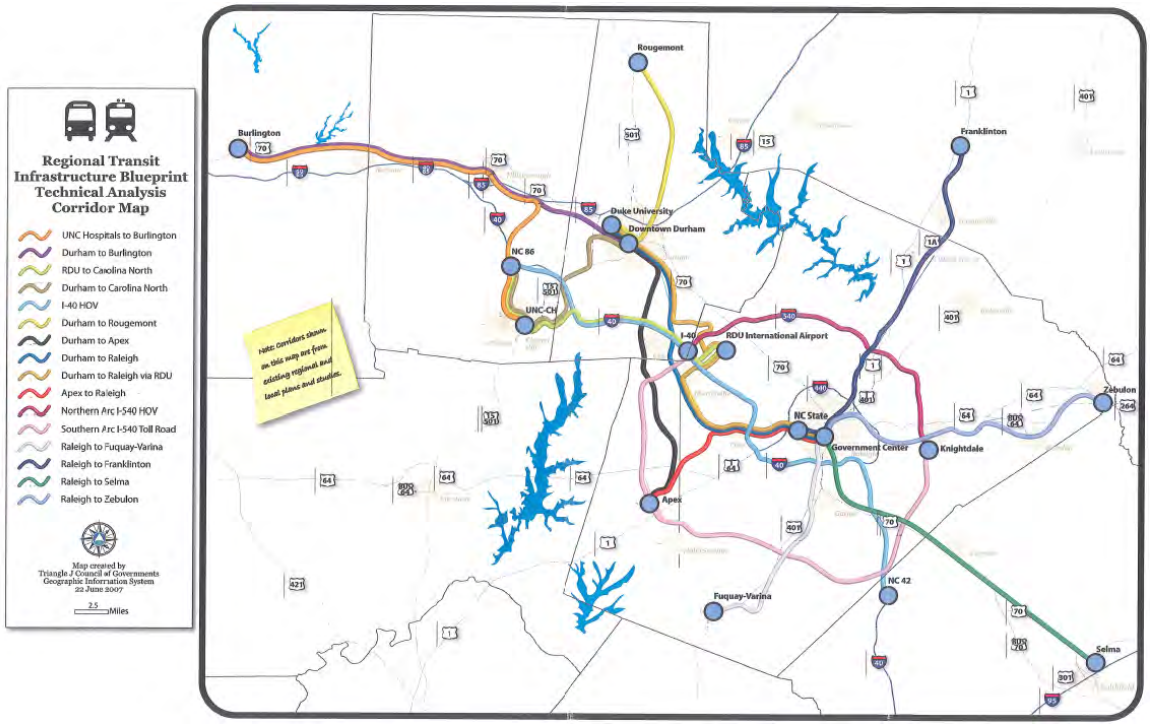
Development of the LRTP took into account the STAC recommendations, and considered rail service in the Raleigh to Zebulon corridor as one of the options for Wake County. However, after analysis, the corridor was not included in the 2035 LRTP (see Figure 3).

Future Studies

Not being included for analysis in the current Triangle Transit study does not imply that the Raleigh to Zebulon corridor has been rejected from future consideration. It is likely that it will continue to be studied for feasibility and addition to a future LRTP. The corridors that are included in the current LRTP are those that have been determined to have a higher feasibility rating and thus a higher chance of receiving funding and being successful in the near-term. Funding constraints simply do not allow all potential rail corridors in the region to be implemented between now and 2035. Recognizing the future potential of the corridor for passenger rail service, the LRTP resolves that the corridor right-of way be preserved for this purpose.

However, both the STAC Vision Plan and 2035 LRTP show improved bus service in the corridor. If the ½ cent sales tax referendum to support transit is successful, express and other forms of bus service can be implemented in the corridor before rail service begins in any of the other corridors. In addition, the City of Raleigh has commenced improvements to enhance bus service in the New Bern Avenue corridor between downtown Raleigh and the WakeMed Raleigh Campus.

Figure 1 STAC Study Corridors



Source: STAC Regional Transit Vision Plan Meeting Notes, July 2007

Table 1 STAC Corridor Statistics

Socioeconomic and Travel Markets Data -- 2035				Travel Market Data								Socioeconomic Data		
Corridor (Corridors shown in red rank in the top four for one or more transportation measures among the 18 full corridors)		Corridor Length (miles)	Acres in Corridor Travel Market Places	Total Trips		In-Corridor Trips				Strata 1&2 In-Corridor Trips		Dwelling Units	Jobs	Activity Intensity Measure
				Daily Trips	Trips/ Acre	Daily Trips	Trips/ Acre	Trips/ Mile	if 2% on transit	Daily Trips	Trips/ Acre			
1	Durham to Apex	25	46,016	1,000,000	21	490,000	11	20,000	9,800	110,000	2	88,000	204,000	3
2A	Durham to Raleigh via rail line	28	39,261	1,100,000	29	590,000	15	21,000	11,800	200,000	5	73,000	345,000	5
2B	Durham to Raleigh via busway	28	37,838	1,000,000	26	510,000	14	18,000	10,200	180,000	5	60,000	296,000	4
3	Durham to Raleigh via US 70	23	37,333	1,000,000	27	460,000	12	20,000	9,200	120,000	3	91,000	227,000	4
4	Durham to Burlington	33	47,802	400,000	8	240,000	5	7,000	4,800	70,000	2	30,000	105,000	1
5	Durham to Chapel Hill	21	22,152	800,000	34	450,000	20	21,000	9,000	140,000	6	57,000	175,000	5
6	Durham to North Durham	19	31,816	400,000	13	210,000	6	11,000	4,200	80,000	2	34,000	100,000	2
7	I-40 HOV	46	89,358	1,000,000	12	360,000	4	8,000	7,200	60,000	1	100,000	203,000	2
8	Northern Arc I-540	26	43,154	600,000	14	170,000	4	6,000	3,400	20,000	0	63,000	95,000	2
9	Raleigh to Apex	17	25,215	800,000	32	330,000	13	19,000	6,600	100,000	4	64,000	148,000	4
10	Raleigh to Franklinton	28	83,568	1,100,000	14	650,000	8	23,000	13,000	140,000	2	94,000	222,000	2
11	Raleigh to Fuquay-Varina	21	45,429	600,000	13	280,000	6	13,000	5,600	60,000	1	60,000	107,000	2
12	Raleigh to Selma	29	42,191	500,000	13	250,000	6	9,000	5,000	50,000	1	52,000	110,000	2
13	Raleigh to Zebulon	27	56,745	900,000	16	430,000	8	16,000	8,600	80,000	1	94,000	161,000	3
14	Chapel Hill to RDU via Metro Center	27	32,357	600,000	18	300,000	9	11,000	6,000	80,000	2	44,000	150,000	3
15	Southern Arc NC-540	44	91,220	1,100,000	12	400,000	4	9,000	8,000	40,000	0	110,000	161,000	2
16	Pittsboro to Chapel Hill	24	75,238	600,000	7	370,000	5	15,000	7,400	60,000	1	56,000	80,000	1
17	Chapel Hill to Burlington	37	56,116	400,000	7	240,000	4	7,000	4,800	50,000	1	34,000	77,000	1
Corridor Segments and Combinations														
10.1	Raleigh to I-540 US1 Sub-Corridor	10	16,297	700,000	45	380,000	23	38,000	7,600	110,000	7	49,000	174,000	6
10.2	Cary to Raleigh to I-540 via US1	17	23,641	900,000	38	440,000	19	24,000	8,800	130,000	5	65,000	208,000	5
2A.1	Durham to Metro Center	11	18,037	400,000	23	220,000	12	20,000	4,400	80,000	5	26,000	155,000	4
2A.2	Raleigh to Metro Center	17	27,775	800,000	28	360,000	13	21,000	7,200	110,000	4	51,000	227,000	4
5.1	Chapel Hill to Patterson Place	13	13,430	400,000	29	450,000	33	34,000	9,000	60,000	4	30,000	77,000	4
5.2	Durham to Patterson Place	8	8,773	300,000	38	180,000	21	23,000	3,600	70,000	8	22,000	99,000	6
	Totals for Region covered by Model:		1,676,800	10,700,000								1,100,000	1,330,000	

Notes:

1. In-corridor trips are trips that both begin and end within the corridor.
2. Peak trips are trips made between 6-10 am and 3-7 pm.
3. Strata 1&2 trips are trips made by households without cars and by low-income households with cars.
4. The activity intensity measure is based on the 1997 TTA Station Area Development Guidelines and is derived from Activity Levels 2 and 3 in the Station Area Classification System, where about 3.2 jobs are the equivalent of one dwelling unit in "supporting walk-to-transit" terms. It is calculated by the equation: ((dwelling units + (jobs/3.2))/acres. The activity intensity measure for a corridor as a whole is only valuable in comparing the relative intensity of activity among corridors, not for whether or not fixed guideway transit may be feasible in any particular corridor, since activity thresholds only have meaning when applied to the ½ mile walk radius around a station area.
5. Values are subject to change based on data reviews, revised socioeconomic estimates and changes to the regional travel demand model
6. Indicators for sections of a corridor may differ significantly from indicators for a corridor as a whole.
7. Corridors to Burlington and Selma include only data for the portions of these corridors within the boundaries of the Triangle Regional Travel Demand Model.

Source: STAC Regional Transit Vision Plan, May 2008

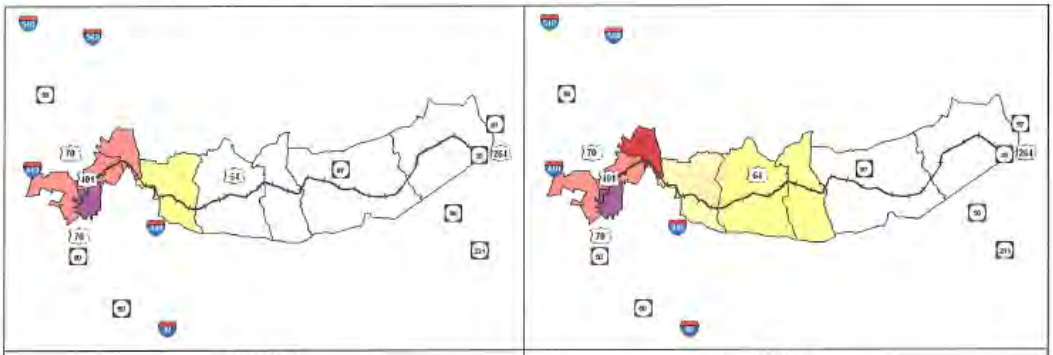
Figure 2 Raleigh to Zebulon Corridor Statistics

Transit Infrastructure Blueprint Technical Analysis

Examining Land Use, Travel Markets and Costs

Raleigh to Zebulon –27 miles

This document summarizes travel in the Travel Market Places along the corridor for the 2005 "base year" and for 2035; the results are from the Triangle Regional Transportation Model. This information is preliminary and subject to change.



2005	2035
.6 million total daily trips	1.2 million total daily trips
60,000 in-corridor daily trips	430,000 in-corridor daily trips
1 in-corridor trips per acre	7.5 in-corridor trips per acre
40,000 in-corridor strata 1 & 2 daily trips	90,000 in-corridor strata 1 & 2 daily trips
0.7 in-corridor strata 1 & 2 trips per acre	1.6 in-corridor strata 1 & 2 trips per acre

- In-corridor trips are trips that both begin and end in the corridor.
- Strata 1 & 2 trips are trips made by households without cars and low-income households with cars.

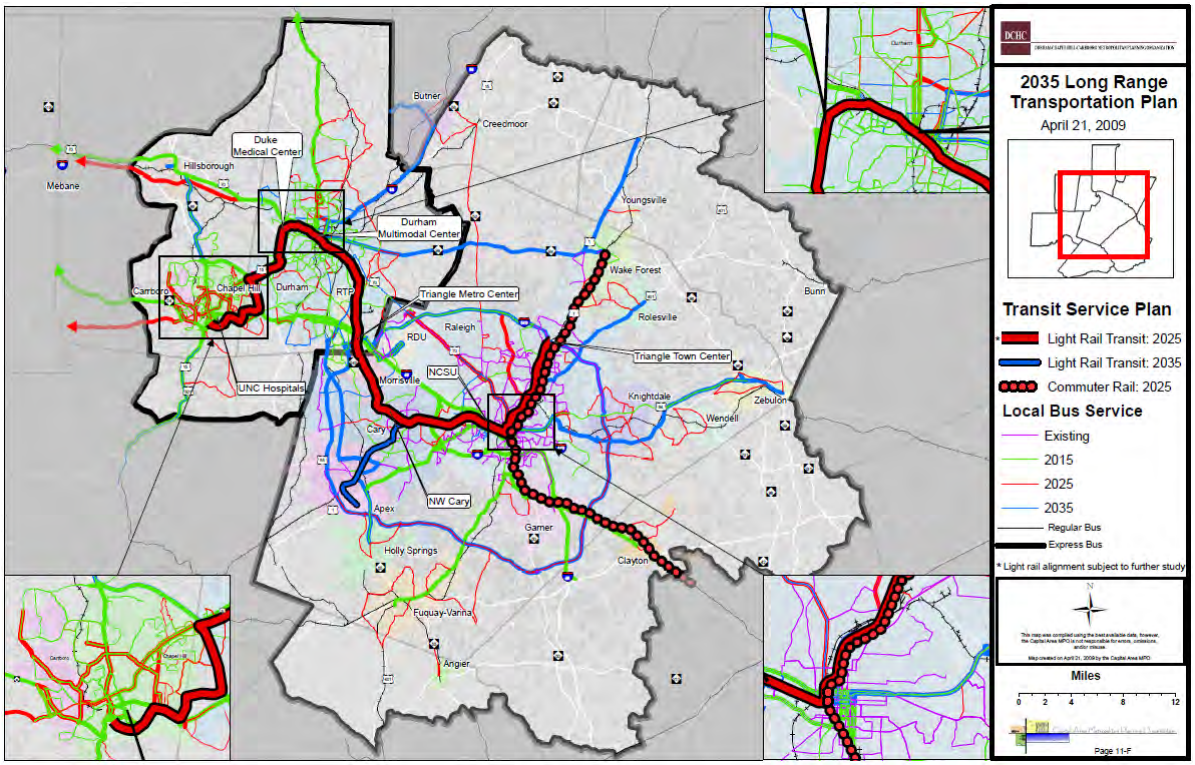
Colors show the number of total daily trips per acre for the Travel Market Places in the corridor:

- < 10 trips/acre
- 10-15 trips/acre
- 15-20 trips/acre
- 20-35 trips/acre
- 25-50 trips/acre
- 50-100 trips/acre
- > 100 trips/acre

Total daily trips in the Triangle: 2005 -- 5.5 million; 2035 -- 10.7 million (forecast).

Source: STAC Regional Transit Vision Plan Meeting Notes, July 2007

Figure 3 LRTP Transit Map



Source: CAMPO/DCHC 2035 LRTP, May 2009

Appendix B

White Paper Study of Commuter Rail to Hillsboro

Memorandum

MARTIN ALEXIOU BRYSON

Transportation Planning
Traffic Engineering

To:	Greg Northcutt, Triangle Transit
From:	George Alexiou, PE
Date:	June 25, 2010
Subject:	Durham to Hillsborough Corridor Rail Service

This memo provides an explanation for not including the Durham to Hillsborough rail corridor as part of the alternatives analysis studies currently being conducted by Triangle Transit in anticipation of a ½ percent sales tax referendum for funding transit improvements in the Triangle region. Several studies have analyzed the potential viability of the Durham to Hillsborough corridor for passenger rail service.

STAC Process

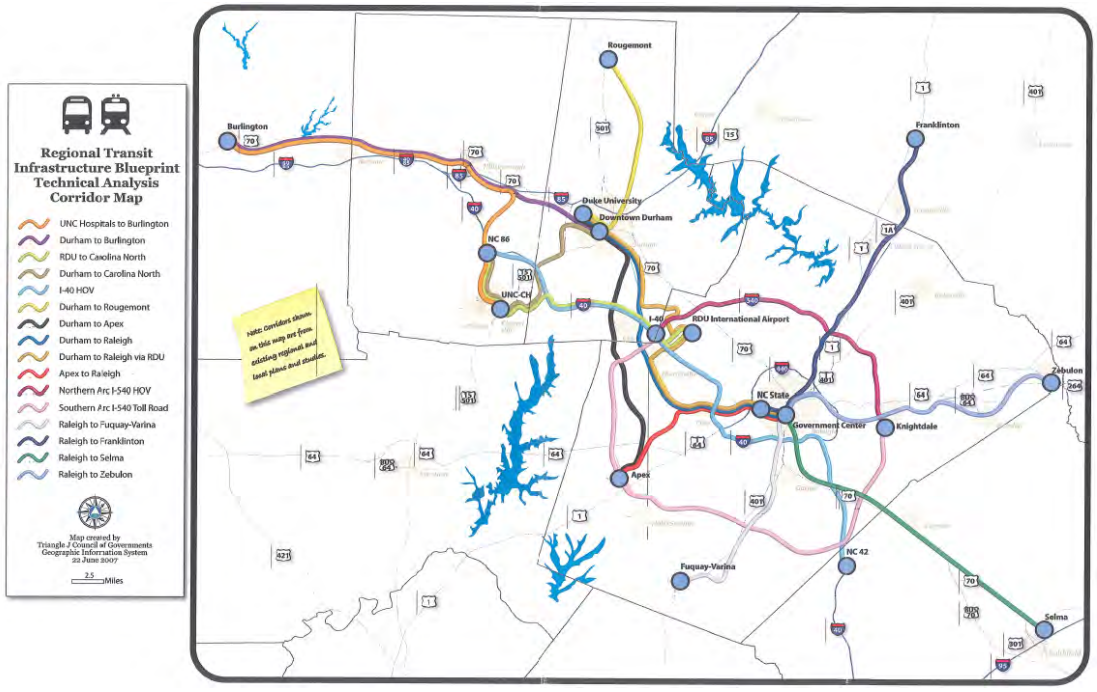
The Durham to Hillsborough corridor was evaluated by the Special Transit Advisory Commission (STAC), a cooperative regional effort of leaders appointed in 2007 by the Capital Area Metropolitan Planning Organization (CAMPO) and the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC) to develop a Regional Transit Vision Plan. This Plan would be the basis for the transit component of the Long Range Transportation Plan. The Durham to Hillsborough corridor was evaluated as part of the Durham to Burlington corridor study, one of 16 corridors evaluated in terms of feasibility and potential ridership (see Figure 1). Summary findings for all corridors are shown in Table 1. The study determined that the Durham to Burlington corridor did not rank in the top four among the study corridors for any of the studied measures, which included: transit intensity, total daily trips, in-corridor daily trips, in-corridor daily trips per acre, and in-corridor daily trips among households most likely to use transit. Only corridors ranked among the top four were included in the Vision Plan. Based on 2035 projections using the Triangle Regional Model, the number of in-corridor trips per acre is not expected to increase to a level supportive of rail transit (see Figure 2).

Long Range Transportation Plan

The 2035 Long Range Transportation Plan (LRTP) for the region's two MPOs was updated and released in May 2009. The LRTP is a federally-mandated process and document that is used for important transportation investment and programming decisions. Only projects that appear in a Long Range Transportation Plan may be included for funding in the Transportation Improvement Program which is the mechanism for all major funding. Comments from public and private transportation providers were solicited throughout the planning process, and a 42-day public comment period was provided for the proposed plan in accordance with the Public Involvement Procedures adopted by the MPOs.

Development of the LRTP took into account the STAC recommendations, and considered rail service from Durham to Hillsborough as one of the options for Durham and Orange Counties. However, after analysis, the corridor was not included in the 2035 LRTP (see Figure 3).

Figure 1 STAC Study Corridors



Source: STAC Regional Transit Vision Plan Meeting Notes, July 2007

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Source: STAC Regional Transit Vision Plan, May 2008

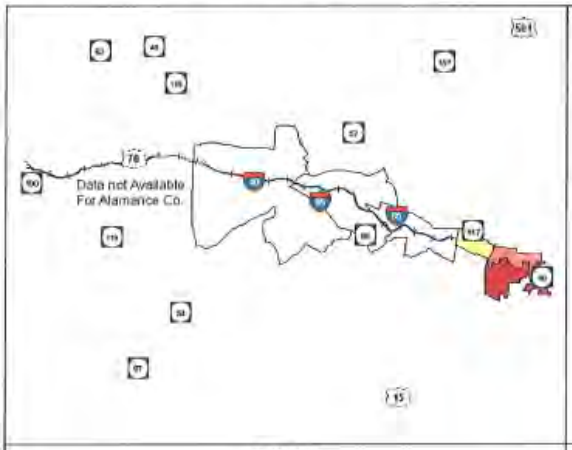
Figure 2 Durham to Burlington Corridor Statistics

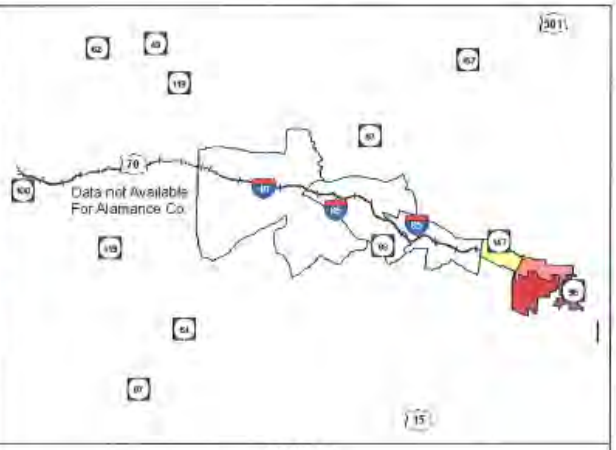
Transit Infrastructure Blueprint Technical Analysis

Examining Land Use, Travel Markets and Costs

Durham to Burlington – 33 miles

This document summarizes travel in the Travel Market Places along the corridor for the 2005 "base year" and for 2035; the results are from the Triangle Regional Transportation Model. This information is preliminary and subject to change.





2005	2035
.4 million total daily trips	.7 million total daily trips
150,000 in-corridor daily trips	240,000 in-corridor daily trips
3.1 in-corridor trips per acre	5.1 in-corridor trips per acre
40,000 in-corridor strata 1 & 2 daily trips	70,000 in-corridor strata 1 & 2 daily trips
.8 in-corridor strata 1 & 2 trips per acre	1.5 in-corridor strata 1 & 2 trips per acre

- In-corridor trips are trips that both begin and end in the corridor.
- Strata 1 & 2 trips are trips made by households without cars and low-income households with cars.

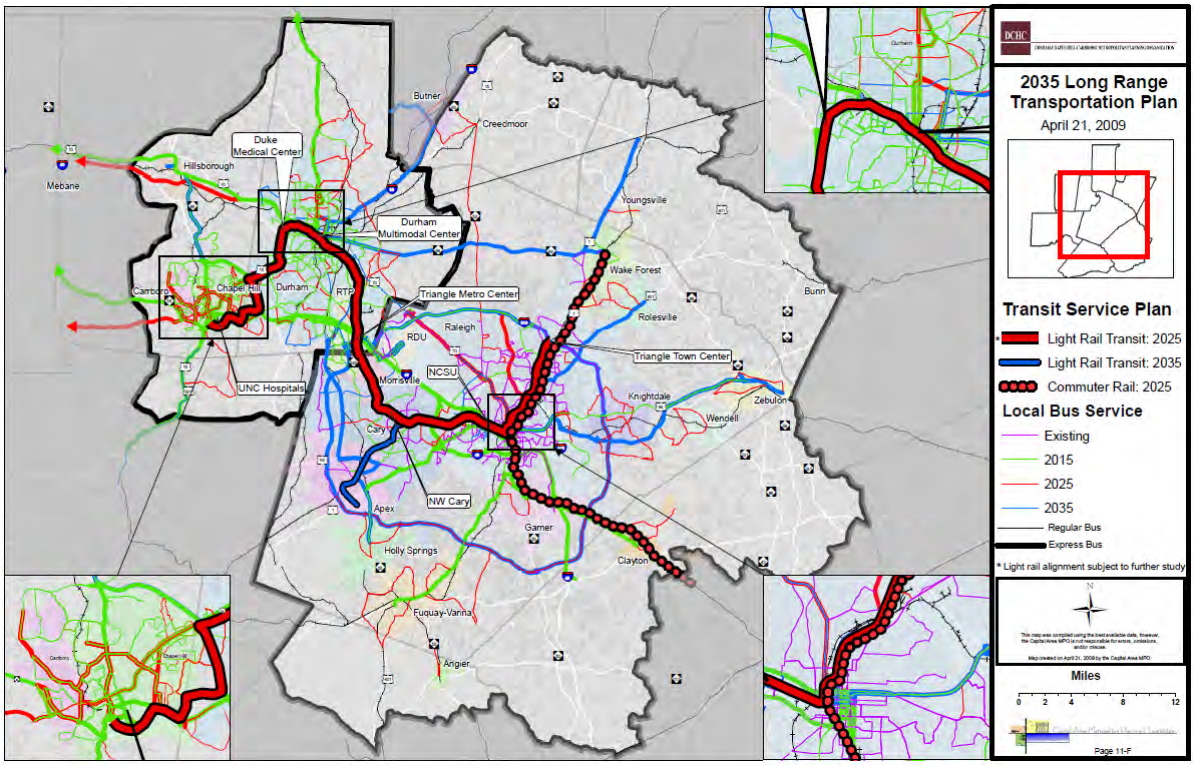
Colors show the number of total daily trips per acre for the Travel Market Places in the corridor:

- < 10 trips/acre
- 10-15 trips/acre
- 15-20 trips/acre
- 20-35 trips/acre
- 25-50 trips/acre
- 50-100 trips/acre
- > 100 trips/acre

Total daily trips in the Triangle: 2005 -- 5.5 million; 2035 -- 10.7 million (forecast).

Source: STAC Regional Transit Vision Plan Meeting Notes, July 2007

Figure 3 LRTP Transit Map



Source: CAMPO/DCHC 2035 LRTP, May 2009

NCRR Ridership Study

The North Carolina Railroad (NCRR) published a report in May 2010 with the results of a study that examined potential passenger demand for commuter rail service between Greensboro and Goldsboro along the NCRR corridor, which included the corridor segment between Durham and Hillsborough. Four model years were analyzed (2009, 2012, 2017, and 2022) to determine daily volume and daily boardings at each station. The segment between Durham and Hillsborough is shown highlighted in Figures 4 and 5. Figure 4 shows the total daily segment volume for this corridor, with low ridership volume that declines between subsequent future model years. Figure 5 shows total daily boardings for this corridor in 2017 and 2022 model years, with boardings much lower for these three stops than most other stops along the full study corridor.

Figure 4 Total Daily Segment Volume (each direction)

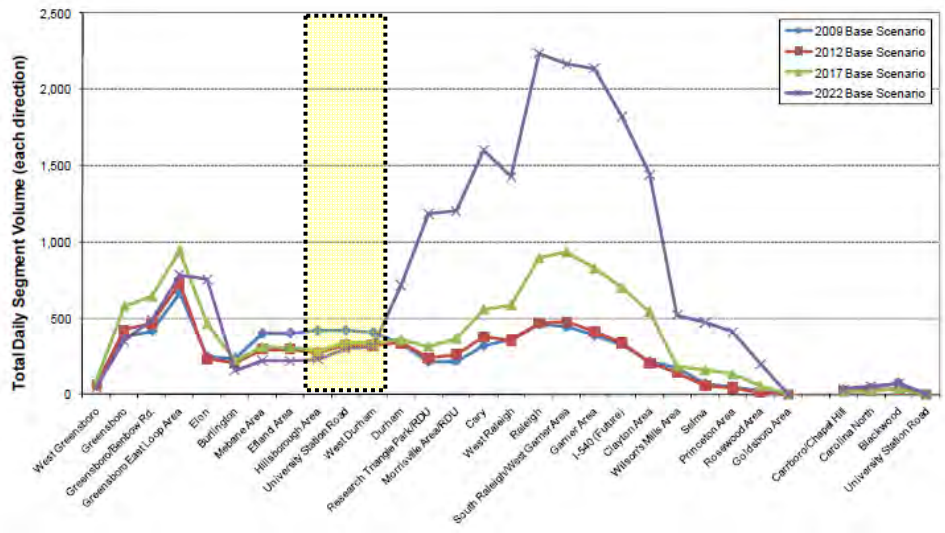
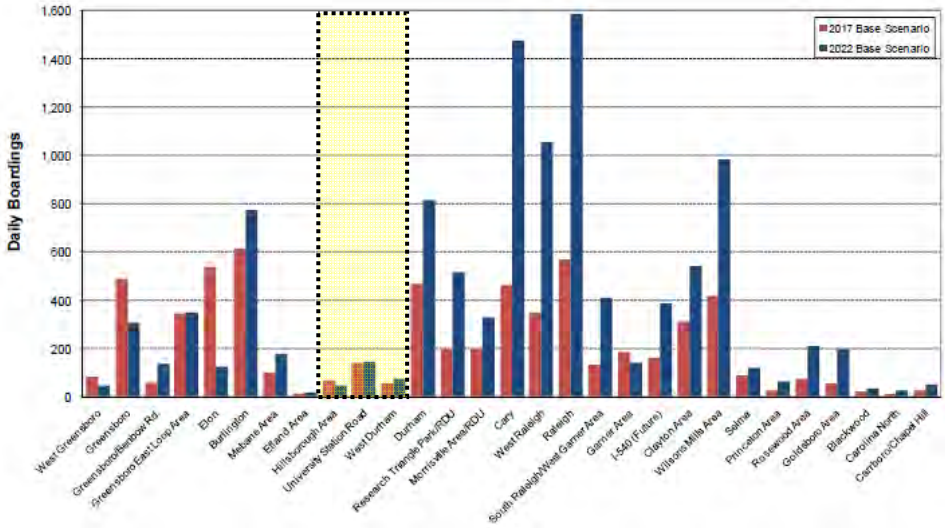


Figure 5 Total Daily Boardings



Source: NCRR Commuter Rail Ridership & Market Study, May 2010

Future Studies

Not being included for analysis in the current Triangle Transit study does not imply that the Durham to Hillsborough corridor has been rejected from future consideration. It is likely that it will continue to be studied for feasibility and addition to a future LRTP. The corridors that are included in the current LRTP are those that have been determined to have a higher feasibility rating and thus a higher chance of receiving funding and being successful in the near-term. Funding constraints simply do not allow all potential rail corridors in the region to be implemented between now and 2035. Recognizing the future potential of the corridor for passenger rail service, the LRTP resolves that the corridor right-of way be preserved for this purpose.

However, both the STAC Vision Plan and 2035 LRTP show improved bus service in the corridor. If the ½ percent sales tax referendum to support transit is successful, express and other forms of bus service can be implemented in the corridor before rail service begins in any of the other corridors.

MEMORANDUM

To: Transportation Advisory Committee (TAC)
DCHC MPO

From: DCHC MPO Lead Planning Agency

Date: September 8, 2010

Subject: **Lead Planning Agency (LPA) Staff Report**

This memorandum provides a summary status of tasks for projects in the FY 2010-2011 Unified Planning Work Program.

- • Indicates that task is ongoing and not complete.
- ✓ Indicates that task is complete.

2010-2011 Unified Planning Work Program (UPWP) – Projects

Comprehensive Transportation Plan (CTP)

- Draft CTP – December 2010/January 2011 – Depends on NCDOT Schedule
- Public Input
- Recommended CTP
- Adopted CTP
- Technical report and implementation

NC 54/I-40 Corridor/Sub-Area Study

- ✓ Staff study initiation meeting
- ✓ Draft scope of services
- ✓ Agency review of scope and time
- ✓ Request for Proposal notice – October 2008
- ✓ Proposal due January 2009
- ✓ Consultant selected
- ✓ Contract negotiation underway
- ✓ Council contract approval May 18, 2009
- ✓ Notice to Proceed – June 2009
- ✓ Kickoff Meeting – July 2009
- ✓ Public Outreach Plan – August 2009
- ✓ Prepare Corridor / Subarea Community Profile – Dec 2009
  - ✓ Public Workshop #1 – Fall 2009
- ✓ Development and Evaluation of Scenarios – Apr 2010
  - ✓ Public Workshop #2 – Feb 25, 2010
- ✓ Transportation/Land Use Master Plan – June 2010
  - ✓ Public Workshop #3 – May 11, 2010

- ✓ Documentation and Final Presentation – June 2010
- Local agency review - ongoing
- Study completion – March 2011

Commercial Vehicle/Freight Survey (TRM Service Bureau Project)

- ✓ Project near completion
- Final Report/Draft Dataset – December 2010

GIS/Data Integration and Automation

- ✓ Phase I completed. Internal review and implementation in progress
- ✓ Phase 2 to commence in January 2011

Land-use Model Development

- ✓ Multi-year project in progress
- ✓ Phase 1 completed
- ✓ Sensitivity analysis and testing in progress
- Phase 2- Parcel level model for DCHC – To commence in January 2011
    - Initial database – TBD
    - Initial model estimation – TBD
    - Initial calibration – TBD

Non-Motorized Model Development

- ✓ Phase 1 completed.
- ✓ Phase 2 completed

  Sensitivity analysis and testing in progress

MPO Parking Survey and Study (postponed)

- Parking model specification
- Regional Coordination and planning
- Draft scope of services
- Request for Proposal notice
- Consultant selection
- Council contract approval
- Project commences

MPO Community Viz. Scenarios Planning and Visualization

- Project kick- off in November 2010

TCC 9/22/2010 Attachment 11

Contract Number:	C200840	**Route:**	NC-54
Physical Division:	5	**County:**	Durham
Administrative Division:	5	**TIP Number:**	R-2904, U-4026
Length:	6.363 miles	**Federal Aid Number:**	STP-54(5)
Resident Engineer:	Jeffrey D. Allen, PE	**RE Phone Number:**	(919)733-9499
Location Description:	NC-54 FROM SR-1999 IN DURHAM CO TO SR-1959 IN DURHAM CO & SR-1999 FROM SR-3014 IN WAKE CO TO NC-54 IN DURHAM CO.		
Type of Work:	WIDENING, GRADING, DRAINAGE, PAVING, SIGNALS & CULVERTS.		
Contractor Name:	FSC II LLC DBA FRED SMITH COMPANY		
Contract Amount:	$35,467,891.08	**Cost Overrun/Underrun:**	5.7%
Availability Date:	2/5/2007	**Letting Date:**	12/19/2006
Completion Date:	11/1/2009	**Work Began:**	2/19/2007
Revised Completion Date:	12/28/2009	**Estimated Completion:**	9/17/2010
Last Estimate Thru:	5/31/2010	**Scheduled Progress:**	100%
Last Estimate Paid:	6/8/2010	**Actual Progress:**	99.84%

Contract Number:	C201487	**Route:**	US-15
Physical Division:	5	**County:**	Durham
Administrative Division:	5	**TIP Number:**	B-3450, U-4009, U-4012
Length:	1.769 miles	**Federal Aid Number:**	BRSTP-1116(6)
Resident Engineer:	Chad D. Hinnant	**RE Phone Number:**	(919)220-4680
Location Description:	BRIDGES OVER SANDY CRK & TRIBUTARY & APPROACHES ON SR-1116, SR-1126 NEAR US-15/501 & SR-1116, US-15/501 AT MT MORIAH RD.		
Type of Work:	GRADING, DRAINAGE, PAVING, SIGNALS, AND STRUCTURES.		
Contractor Name:	DLB, INC DBA DLB INC (OF VA)		
Contract Amount:	$18,810,912.36	**Cost Overrun/Underrun:**	4.79%
Availability Date:	10/1/2007	**Letting Date:**	8/21/2007
Completion Date:	8/1/2010	**Work Began:**	10/1/2007
Revised Completion Date:	8/3/2010	**Estimated Completion:**	10/15/2010
Last Estimate Thru:	7/31/2010	**Scheduled Progress:**	99.9%
Last Estimate Paid:	8/16/2010	**Actual Progress:**	87.67%

Contract Number:	C201994	**Route:**	NC-147
Physical Division:	5	**County:**	Durham
Administrative Division:	15	**TIP Number:**	U-4763B
Length:	4.2 miles	**Federal Aid Number:**	TIFIA-540(2)
Resident Engineer:	D. Brian Harrington, PE	**RE Phone Number:**	(919)836-4873
Location Description:	TRIANGLE PARKWAY FROM NC-540 IN WAKE CO TO I-40 IN DURHAM CO		
Type of Work:	GRADING, DRAINAGE, PAVING, SIGNALS, TOLL FACILITIES & STRS.		
Contractor Name:	S. T. WOOTEN CORPORATION		
Contract Amount:	$137,446,000.00	**Cost Overrun/Underrun:**	
Availability Date:	9/19/2008	**Letting Date:**	8/5/2008
Completion Date:	7/1/2011	**Work Began:**	8/3/2009
Revised Completion Date:		**Estimated Completion:**	
Last Estimate Thru:		**Scheduled Progress:**	
Last Estimate Paid:		**Actual Progress:**	

Contract Number:	C202064	**Route:**	SR-2028
Physical Division:	5	**County:**	Durham
Administrative Division:	5	**TIP Number:**	U-3309A
Length:	1.165 miles	**Federal Aid Number:**	STP-2028(4)
Resident Engineer:	Cadmus Capehart, PE	**RE Phone Number:**	(919)840-0914
Location Description:	SR-2028 (TW ALEXANDER DR) FROM CORNWALLIS RD TO EAST OF NC-147 IN DURHAM.		
Type of Work:	WIDENING, GRADING, DRAINAGE, PAVING & SIGNALS.		
Contractor Name:	THOMPSON CONTRACTING GRADING PAVING & UTILITIES INC		
Contract Amount:	$6,502,648.68	**Cost Overrun/Underrun:**	0.31%
Availability Date:	2/1/2010	**Letting Date:**	12/15/2009
Completion Date:	8/15/2011	**Work Began:**	2/8/2010
Revised Completion Date:		**Estimated Completion:**	8/15/2011
Last Estimate Thru:	7/31/2010	**Scheduled Progress:**	18.3%
Last Estimate Paid:	8/16/2010	**Actual Progress:**	23.32%

Contract Number:	C202277	**Route:**	I-40
Physical Division:	5	**County:**	Durham
Administrative Division:	5	**TIP Number:**	R-2000AF, R-5164B
Length:	3.56 miles	**Federal Aid Number:**	STM-540(15)
Resident Engineer:	Jeffrey D. Allen, PE	**RE Phone Number:**	(919)733-9499

Location Description: NORTHERN WAKE FREEWAY INTERCHANGE IMPROVEMENTS AT I-540 AND I-40, AND I-40 FROM NC-147 TO EAST OF I-540.
Type of Work: WIDENING, GRADING, DRAINAGE, MILLING, PAVING, & STRUCTURE .
Contractor Name: FSC II LLC DBA FRED SMITH COMPANY
Contract Amount: $7,577,355.48 **Cost Overrun/Underrun:** 0.86%
Availability Date: 3/1/2010 **Letting Date:** 1/19/2010
Completion Date: 12/31/2010 **Work Began:** 4/1/2010
Revised Completion Date: 1/7/2011 **Estimated Completion:** 12/31/2010
Last Estimate Thru: 8/7/2010 **Scheduled Progress:** 47.75%
Last Estimate Paid: 8/13/2010 **Actual Progress:** 40.93%

Contract Number: C202340 **Route:** SR-1321
Physical Division: 5 **County:** Durham
Administrative Division: 5 **TIP Number:** U-3804
Length: 1.07 miles **Federal Aid Number:** STM-0505(50)
Resident Engineer: Chad D. Hinnant **RE Phone Number:** (919)220-4680
Location Description: SR-1321 (HILLANDALE RD) FROM I-85 TO NORTH OF SR-1407 (CARVER AVE).
Type of Work: GRADING, DRAINAGE, PAVING, AND SIGNAL.
Contractor Name: REA CONTRACTING A DIVISION OF THE LANE CONSTRUCTION CORPORAT
Contract Amount: $4,222,625.78 **Cost Overrun/Underrun:**
Availability Date: 8/30/2010 **Letting Date:** 7/20/2010
Completion Date: 6/15/2012 **Work Began:**
Revised Completion Date: **Estimated Completion:**
Last Estimate Thru: **Scheduled Progress:**
Last Estimate Paid: **Actual Progress:**

Contract Number: C202408 **Route:** US-501
Physical Division: 5 **County:** Durham
Administrative Division: 5 **TIP Number:**
Length: 18.15 miles **Federal Aid Number:**
Resident Engineer: Chad D. Hinnant **RE Phone Number:** (919)220-4680
Location Description: US-501 BUS FROM SOUTH OF SR-1669 (CLUB BLVD) TO SR-1443 (HORTON RD) AND 8 SECTIONS OF SECONDARY ROADS.
Type of Work: MILLING, RESURFACING & SHOULDER RECONSTRUCTION.
Contractor Name: FSC II LLC DBA FRED SMITH COMPANY
Contract Amount: $2,694,654.51 **Cost Overrun/Underrun:** 9.68%
Availability Date: 10/5/2009 **Letting Date:** 8/18/2009
Completion Date: 6/11/2010 **Work Began:** 4/5/2010
Revised Completion Date: **Estimated Completion:** 9/15/2010
Last Estimate Thru: 7/15/2010 **Scheduled Progress:** 100%
Last Estimate Paid: 8/2/2010 **Actual Progress:** 97.15%

Contract Number: C202493 **Route:** I-85
Physical Division: 5 **County:** Durham
Administrative Division: 5 **TIP Number:** R-5164A
Length: 9.6 miles **Federal Aid Number:** STM-085-4(114)171
Resident Engineer: Cadmus Capehart, PE **RE Phone Number:** (919)840-0914
Location Description: 1 SECTION OF I-85, 1 SECTION OF US-15/501, AND 1 SECTION OF NC-147.
Type of Work: MILLING, RESURFACING & MILLED RUMBLE STRIPS.
Contractor Name: REA CONTRACTING A DIVISION OF THE LANE CONSTRUCTION CORPORAT
Contract Amount: $6,088,736.11 **Cost Overrun/Underrun:** 0.64%
Availability Date: 3/15/2010 **Letting Date:** 1/19/2010
Completion Date: 12/16/2010 **Work Began:** 8/4/2010
Revised Completion Date: **Estimated Completion:** 12/16/2010
Last Estimate Thru: 8/7/2010 **Scheduled Progress:** 3.87%
Last Estimate Paid: 8/12/2010 **Actual Progress:** 6.82%

Contract Number: C202496 **Route:** US-15501
Physical Division: 5 **County:** Durham
Administrative Division: 5 **TIP Number:** R-5164C
Length: 2.9 miles **Federal Aid Number:** STM-0015(30)
Resident Engineer: Chad D. Hinnant **RE Phone Number:** (919)220-4680
Location Description: 3 SECTIONS OF US-15/501 BUS AND 3 SECTIONS OF SECONDARY ROADS.
Type of Work: MILLING & RESURFACING.
Contractor Name: REA CONTRACTING A DIVISION OF THE LANE CONSTRUCTION CORPORAT
Contract Amount: $861,556.72 **Cost Overrun/Underrun:** 0%
Availability Date: 5/19/2010 **Letting Date:** 1/19/2010
Completion Date: 9/15/2010 **Work Began:** 5/19/2010

Revised Completion Date: **Estimated Completion:** 9/15/2010
Last Estimate Thru: 8/7/2010 **Scheduled Progress:** 100%
Last Estimate Paid: 8/24/2010 **Actual Progress:** 26.77%

Contract Number: C202538 **Route:** NC-55, NC-751, SR-1118 SR-1357, SR-1404, SR-1615 SR-1641, SR-1646, SR-1656 SR-1670, SR-1671, SR-1901 SR-1954, SR-1955, SR-1981 US-70
Physical Division: 5 **County:** Durham
Administrative Division: 5 **TIP Number:**
Length: 22.96 miles **Federal Aid Number:**
Resident Engineer: Cadmus Capehart, PE **RE Phone Number:** (919)840-0914
Location Description: 1 SECTION OF US-70, 1 SECTION OF NC-55, 1 SECTION OF NC-751 & 13 SECTIONS OF SECONDARY ROADS.
Type of Work: MILLING, RESURFACING & SHOULDER RECONSTRUCTION.
Contractor Name: TRIANGLE GRADING & PAVING, INC
Contract Amount: $4,474,348.51 **Cost Overrun/Underrun:** 0%
Availability Date: 3/15/2010 **Letting Date:** 1/19/2010
Completion Date: 12/16/2010 **Work Began:** 4/5/2010
Revised Completion Date: **Estimated Completion:** 12/16/2010
Last Estimate Thru: 8/22/2010 **Scheduled Progress:** 21%
Last Estimate Paid: 8/26/2010 **Actual Progress:** 21.23%

Contract Number: DO00031 **Route:** NC-147
Physical Division: 5 **County:** Durham
Administrative Division: 5 **TIP Number:** B-4700AD
Length: 0 miles **Federal Aid Number:** BRNHS-000S(370)
Resident Engineer: Chad D. Hinnant **RE Phone Number:** (919)220-4680
Location Description: BRIDGES #160, 163, 144, 138, AND 140 ON NC-147.
Type of Work: BRIDGE PAINTING.
Contractor Name: SAFFO CONTRACTORS INC
Contract Amount: $782,555.00 **Cost Overrun/Underrun:** 0%
Availability Date: 5/3/2010 **Letting Date:** 3/18/2010
Completion Date: 9/14/2010 **Work Began:** 6/15/2010
Revised Completion Date: **Estimated Completion:** 9/12/2010
Last Estimate Thru: 8/4/2010 **Scheduled Progress:** 7%
Last Estimate Paid: 8/9/2010 **Actual Progress:** 38.81%

Contract Number: DO00050 **Route:** NC-147
Physical Division: 5 **County:** Durham
Administrative Division: 5 **TIP Number:** B-4700AC
Length: 0 miles **Federal Aid Number:** BRNHS-000S(370)
Resident Engineer: Chad D. Hinnant **RE Phone Number:** (919)220-4680
Location Description: BRIDGES #71 ON US-15/501, 191, 192, 177, 180, 173, 175, 164, & 166 ON NC-147.
Type of Work: BRIDGE PAINTING.
Contractor Name: SAFFO CONTRACTORS INC
Contract Amount: $792,555.00 **Cost Overrun/Underrun:**
Availability Date: 5/3/2010 **Letting Date:** 3/18/2010
Completion Date: 9/14/2010 **Work Began:** 7/26/2010
Revised Completion Date: **Estimated Completion:**
Last Estimate Thru: **Scheduled Progress:**
Last Estimate Paid: **Actual Progress:**

ACTIVE NCDOT PROJECTS LOCATED IN ORANGE COUNTY - DCHC MPO
ARRA

County	WBS #	Route	Location Description	Amount	Status
Orange	EL-4601	Morgan Creek Greenway	Construct Greenway	$940,000	ARRA- Sullivan Eastern =16.5% compl.Invoice #1 reimbursed 5/18/10; Inv. #2 app. for reimbursement
Orange	EL-5103	Carrboro	Construct bus shelters at 4 locations	$48,296	ARRA- WC Construction =100% compl.; M.A. compl. 7/14/10-revised to 9/14/10; **invoice reimbursement pending final inspection**
Orange	ER-5100 GE	US 15-501@ SR 1734 (Erwin Rd./Europa Dr.)	Plantings	$65,000	ARRA -Plymouth Nursery and Landscaping **=**planting compl.; warranty period underway
Orange	I-5138	I-85	Mill, resurface, and overlay from I-85/I-40 split to Bridge over SR 1006 (Orange Grove Rd.)	$2.0 million	ARRA-Rea Contracting, LLC; Night work- =100% compl.-rev. compl. 7/30/10
Orange	R-5178A	NC 57	Widen for two foot paved shoulders and resurface from NC 86 to SR 1544 (Pearson Road)	$1.0 million	ARRA-Riley Paving, Inc.; work began 6/2/10; **94.89% compl.**
Orange	R-5178B	NC 86 (S. Columbia St.) from SR 1010 (Franklin St.) to Cameron Ave.	Mill, resurface, and replace curband gutter	$200,000.00	ARRA-Eastern Services, LLC dba Raleigh Paving=**65% compl.**
Orange	TA-5117		Two 28' light transit vehicles w/ wheelchair lift	$183,200.00	ARRA-funds flexed to FTA; Buses ordered by Chapel Hill Transit for delivery in Summer 2010 & then leased to Orange Co.- **vehicles have been received by C.H. Transit**
Orange	U-3100B	SR 1107 (Old Fayetteville Rd.) from NC 54 to SR 1106 (Stroud Lane)	Safety Improvements (Bicycle, Pedestrian, and Transit Accommodations)	$1.8 million	ARRA-Atwell Const. Co., Inc., Greenville, NC= **50% compl.**

ACTIVE NCDOT PROJECTS LOCATED IN ORANGE COUNTY - DCHC MPO
ARRA

Orange	U-3306 34913.3.ST1 STM-1733 (16)	SR 1733 (Weaver Dairy Rd.) from NC 86 to Old Sterling Road	Grading, drainage, paving, signals, curb and gutter, retaining wall	$13.4 million	Yates Construction Co., Inc. to be compl. by 6/15/13; **pre-con 8/27/10**
Orange	U-4704	Chapel Hill-Carrboro	Computerized Traffic Signal System	$5.175 million	ARRA**-**Brooks Berry Haynie & Assoc., Inc.; Mableton, Ga. =**13.04% compl.-** additional contractor forces have been employed after meeting with NCDOT
Orange	U-4726 DA	Carrboro	Construct sidewalk on Ashe St. from W. Main St. to Shelton St.	$284,176.00	ARRA- Centurion Construction Co.=**100% compl.** ; reimbursement #1 on 6/15/10; M.A. compl. 7/2/10-rev. to 9/2/10; **inv. reimbursement pending final inspection**
Orange	U-4726 DB	Carrboro	Construct sidewalk on Bim St. from SR 1005 (Jones Ferry Rd.) to Fidelity St.	Combined w/ U-4726 DA	ARRA-Centurion Construction Co; =**100% compl.**;reimbursement #1 on 6/15/10;; M.A. compl. 7/2/10**-**rev. to 9/2/10; **inv. reimbursement pending final inspection**
Orange	U-4726 GA	Twin Creeks Park Greenway	Linear park: 10' multi-use asphalt trail including bridge over Jones Creek	$429,457.00	ARRA- McQueen Construction =**36.5% compl.**;**structure design has made recommendation s**; M.A. compl. 1/16/11; **inv. reimbursed**
Orange	U-4726 IA	Chapel Hill	ADA ramps at selected locations	$53,924.00	ARRA- Econ International =100% compl.; M.A. compl. 7/16/10-rev. to 8/31/10; **inv. reimbursement pending**

ACTIVE NCDOT PROJECTS LOCATED IN ORANGE COUNTY - DCHC MPO
ARRA

Orange	U-4726 IB	Chapel Hill	Raised crosswalks/traffic calming	$65,189.00	ARRA -Turner Asphalt =100% compl.; M.A. compl. 7/16/10-rev. to 8/31/10; **inv. reimbursement pending**
Orange	U-4726 IC	Chapel Hill	Pedestrian safety improvements (refuge islands @ 7 locations)	$370,014.80	ARRA-Econ International=100% compl.-M.A. compl. 7/16/10-rev. to 8/31/10; **inv. reimbursement pending**
Orange	U-4726 ID	Chapel Hill	Install in-street pedestrian lighting	$0.00	ARRA-Project voided by request of Town; funds redistributed to other Town projects
Orange	U-4726 IE	Chapel Hill	Sidewalk construction on US 15-501/NC54 from SR 1902 (Manning Dr.) to Old Mason Farm Rd.	$142,613.00	ARRA- Holmes Contracting=100% compl. - Supplemental construction agreement to be paid by Town; Final insp. held 4/30/10; Final 5/27/10; M.A. compl. 7/16/10-rev. to 8/31/10; **inv. reimbursement pending**
Orange	U-4726 JA	Hillsborough	Construct sidewalks	$1,034,110.00	ARRA, STP-DA, & Contingency - S.T. Wooten Corp.=21.06% compl.; Inv. #1 reimbursement on 6/3/10; Inv. #2 app. for reimbursement; M.A. compl. 7/24/11-rev. to 9/17/11
NCDOT PROJECTS CURRENTLY IN 12 MONTH LETTNG LIST					
County	**TIP #**	**Route**	**Location Description**	**TIP Est.**	**Est. Let Date**

ACTIVE NCDOT PROJECTS LOCATED IN ORANGE COUNTY - DCHC MPO

County	WBS #	Route	Location Description	Amount	Status
Orange	36945	SR 1010 (Franklin St.) @ Mallette St.	Upgrade traffic signal and install pedestrian signal heads REVISION: Install mast arm	$110,000.00	Spending Authority FY '10-'11
Orange	41593	Union Street	Construct 750 feet of sidewalk and a crosswalk to connect Hillsborough Elementary School to SR 1156 (Nash St.)	$32,000 (Statewide Contingency)	See U-4726 JA
Orange	42501	US 15/501/NC54 (Fordham Blvd.) at SR 1900 (Old Mason Farm Rd.)	Construct bus pulloffs on both sides	$140,000	Design by District-F.A. const. to begin after U-4726 IE and M.A. w/UNC/Town for crosswalks, WCR, & ped heads- **staking by District underway**
Orange	42502	SR 1010 (Franklin St.) between Hillsborough St. and Plant Rd.	Replace deteriorated curb and gutter at several locations on both sides	$30,000	Municipal Agreement sent to Town for execution 3/9/10; Const. FY '10-'11
Orange	43030	SR 1843 (Seawell School Rd.)	Safety improvements near railroad crossing #736157R (signing, tree removal, grading for visibility, paved shoulders, wedging, short overlay & snow-plowable pavement markers)	$45,000	F.A. construction **to be co-ordinated w/ 2011 resurfacing**
Orange	7CR.10681.16 7CR.20681.16	NC 54 from 560' west of Greenwood Dr. to County line and 11 sections of secondary roads	Milling, resurfacing and shoulder reconstruction	$3.028 million	S.T. Wooten Corp. = **55.2% compl.**
Orange	B-4216	SR 1002 (St. Mary's Road)	Replacement of Bridge # 66 over Stroud's Creek	$800,000	Dane Const. Inc.= **69.69% compl.**
Orange	I-4716	I-40	Grind and reseal joints on I-40 from I-85 to Durham Co. (Patching spalls, Diamond grinding and slab repair added)	$7.4 million	Safety Grooving & Grinding, L.P., Napolean, Ohio - =**42.91% compl.; grinding compl.-joint sealing underway**
Orange	I-5142	I-85/I-40	Mill, resurface and install pavement markers and rumble strips from west of SR 1114(Buckhorn Road) to the I-85/I-40 interchange	$8.60 million	C.C. Mangum Co., LLC; pre-con 6/7/10; will begin work 8/9/10 and compl. all lanes in one direction by Dec.-lanes in other direction will be compl. by 7/15/11

ACTIVE NCDOT PROJECTS LOCATED IN ORANGE COUNTY - DCHC MPO

Orange	42170 SS-4907 T 42204.2 42204.1	SR 1710 (Old NC 10) @ NC 86	Construct a right turn lane on SR 1710 and install a traffic signal	$215,000	JP env. field review-4/21/10; DPOC pending signal design ; R/W compl.-final utility & signal meeting 7/30/10; **signal plans being revised -multi-use pole**
Orange	42171 SS-4907 U 42205.2 42205.1	SR 1710 (Old NC 10) @ SR 1713 (Mt. Herman Church Road)	Improve sight distance on SR 1710 by lowering the crest vertical curve on the westbound approach to the intersection	$300,000	Design underway; Const. FY '10-'11
Orange	42423.3 42423.1 SS -4907V	SR 1005 (Old Greensboro Rd.) @ SR 1951 (White Cross Rd.)	Realign intersection	$165,000	Survey compl.& Design pending; Const. FY '10-'11; flasher has been installed by separate project
Orange	**SS-4907AC 43040.1.1 PE 07-10-727**	**SR 1734 (Erwin Rd.) and SR 1791 (Mt. Moriah Rd.) near Chapel Hill**	**Installation of a left turn lane on Erwin Rd. and a traffic signal**		**Survey pending**
NCDOT PROJECTS CURRENTLY IN 12 MONTH LETTNG LIST					
County	**TIP #**	**Route**	**Location Description**	**TIP Est.**	**Est. Let Date**
Orange	U-0624	NC 86 (S. Columbia St.)	Corridor upgrade including Bicycle lanes from SR 1906 (Purefoy Rd.) to SR 1902 (Manning Dr.)	$4.30 million	Nov. 16, 2011

TARPO TCC/TAC Meeting
Division 8 Project Report

9/1/2010

COUNTY	WBS #	ROUTE	DESCRIPTION	TOTAL FUNDING ALLOCATION	CONTRACT BID AMOUNT	STATUS
Chatham	8CR.20191.12	6 sections of secondary roads	Contract resurfacing	$2,600,000.00	$2,155,954.37	Riley Paving, Inc. began work on 6/28/10; Currently at 46.1% complete; Scehduled completion is 8/13/10;
Chatham	42221	NC 87 from south of SR 1516 to north of SR 1516	Construct eliptical roundabout near CCCC in Pittsboro	$399,750.00	$584,478.20	Sanford Contractors, Inc began work on 4/19/10; Currently at 84.2% complete; Scheduled completion date is 8/13/10; **Economic Stimulus Project**
Chatham	41848.3 SS-4908K	US 64 and SR 2229 (Treatment Plant Road)/SR 1363 (Pearlman Teague Road)	Island construction and improvements to accommodate U-turns	PE: $28,708.28 ROW: $11,000.00 CONST: $346,600.00	$237,788.60	Let on 5/27/10; Awarded to S.T. Wooten Corp.; Availability date is 6/28/10: Scheduled completion date is October 29, 2010
Chatham	33710.3.1 B-4459	NC 42	Structure replacement of #56 over Buckhorn Creek and approaches	PE: $76,000.00 ROW: $55,000.00 CONST: $1,600,000.00	$1,307,174.12	APAC-Thompson Arthur began work on 8/5/10; Currently at 0% complete; Scheduled completion date is 12/31/11.
Chatham	8CR.10191.14	US 1 from the Lee Co. line to Wake County and 3 sect of Secondary Roads	Contract Resurfacing	$2,900,000.00		Letting scheduled for 8/17/10. **Rescheduled for special letting on 9/7/10.**
Chatham	45127.3.1 C-5116	NC 87	Curb & gutter and sidewalk installation in Town of Pittsboro	PE: $21,521 CONST: $210,479		Anticipated letting in September 2010.

DCHC

DURHAM • CHAPEL HILL • CARRBORO METROPOLITAN PLANNING ORGANIZATION

Member Governments
Town of Carrboro
Town of Chapel Hill
County of Chatham
City of Durham
County of Durham
Town of Hillsborough
NC Department of Transportation
County of Orange

September 8, 2010

Mr. Don Voelker
Director, Strategic Planning Office of Transportation
N.C. Department of Transportation
1501 Mail Service Center
Raleigh, NC 27699-1501

Dear Mr. Voelker:

Thank you for the opportunity to provide comments on the prioritization of N.C. Mobility Fund Projects.

The legislation creating the N.C. Mobility Fund indicates that the purpose of the fund is to finance transportation projects of statewide and regional significance that relieve congestion and enhance mobility across the state.

It is significant that the N.C. Mobility Fund differs from other state highway funding sources in that the funds are not subject to the equity formula and the legislation does not specify the projects to be funded (with the exception of I-85 widening near the Yadkin River Bridge).

Therefore, due to the discretionary nature of the N.C. Mobility Fund, the project selection criteria provide an opportunity to support other state goals, such as reduction of VMT and greenhouse gas emissions, land use and transportation integration, and the encouragement of transportation best practices.

Here are suggestions regarding the project selection criteria:

1. Set aside a substantial percentage of the Mobility Fund for the Intermodal Fund to provide the State's share of large transit projects funded by local options taxes under the HB 148 Congestion Relief and Intermodal bill.

2. Only allow large projects to qualify for funding through the Mobility Fund. This new source of funding should be reserved for costly projects, such as the Yadkin River bridge, that would be difficult or impossible to fund through the equity formula and would create a financial burden by programming the majority of a Division's equity funds into a single project, leaving little funding available for other needed projects. Less costly projects should not be eligible because they can be funded through equity formula funding.

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3. Ensure that transit projects receive equal consideration for funding through the Mobility Fund.

4. Proposed N.C. Mobility Fund projects should be scored on the degree to which they:
    - Facilitate compact growth, and livable, walkable, and bikeable communities.
    - Encourage redevelopment of brownfields and other sites with existing infrastructure.
    - Expand mobility choices by promoting multi-modal transportation systems.
    - Reduce congestion and promote safe and efficient system operation.
    - Enhance connectivity and accessibility of the transportation system.
    - Manage access in order to maintain desired traffic flow.
    - Support economic development, productivity, and competitiveness.
    - Protect critical natural resources and environmentally sensitive areas.
    - Enhance community appearance and incorporate context-sensitive solutions.
    - Maintain safe levels of air quality, noise, and other transportation impacts.
    - Promote energy conservation, VMT reduction, and greenhouse gas reduction goals.

5. Jurisdictions or regions applying for funding should be evaluated on the degree to which their transportation plans and implemented policies/programs achieve the following goals. The application of these criteria should be sensitive to the differences between urban and rural areas and municipalities of different sizes:
    - Define planned growth areas and encourage development in brownfields and other sites with existing infrastructure.
    - Coordinate transportation systems and future land-use patterns.
    - Expand mobility choices by promoting multi-modal transportation systems, including the adoption of pedestrian, bicycle, and transit plans and local "complete streets" policies.
    - Reduce congestion and promote safe and efficient system operation.
    - Enhance street connectivity and accessibility of the transportation system, including the use of efficient median, turn lane, and other access management tools.
    - Design collector road systems to guide growth in developing areas.
    - Support economic development, productivity, and competitiveness.
    - Protect critical natural resources and environmentally sensitive areas
    - Maintain safe levels of air quality, noise, and other transportation impacts.
    - Promote energy conservation, VMT reduction, and greenhouse gas reduction goals.
    - Reduce driver distraction through education, enforcement, and sign control.
    - Develop comprehensive action plans for highway safety that include enforcement, education, and pedestrian and bicycle safety components.

- Are consistent with other local, regional, and state transportation and land-use plans.

6. Due to the inherent difficulty of selecting projects solely through a scoring system, consideration should be given to the creation of a N.C. Mobility Fund Committee that reviews projects based on the above criteria and makes project selection recommendations to NCDOT staff and the Board of Transportation. NCDOT has had a positive experience with similar committees in selecting Enhancement projects and in awarding bicycle and pedestrian planning grants.

We commend NCDOT for its work developing prioritization process/criteria for TIP and loop projects. The prioritization process for Mobility Fund projects can use elements of the TIP and loop processes.

Please note that some of these ideas are based on recommendations in the 2001 final report of the Commission on Smart Growth, Growth Management and Development and the 2009 report of the 21st Century Transportation Committee (particularly the Intermodal Recommendations). Other insights may be gained by reviewing the criteria being used for recent federal grant programs, such as TIGER II, and other associated with both the USDOT/HUD/EPA Sustainable Commmunities Partnership and the N.C. Sustainable Communities Task Force.

Please contact Mark Ahrendsen (mark.ahrendsen@durhamnc.gov) or Dale McKeel (dale.mckeel@durhamnc.gov) to discuss these comments further.

Sincerely,

J. Michael Woodard, Chair
Transportation Advisory Committee

cc: The Honorable Bob Atwater
The Honorable Bill Faison
The Honorable Joe Hackney
The Honorable Larry Hall
The Honorable Verla Insko
The Honorable Eleanor Kinnaird
The Honorable Paul Luebke
The Honorable Floyd McKissick
The Honorable Mickey Michaux
The Honorable W.A. Wilkins
DCHC MPO TAC
Mark Ahrendsen, City of Durham/DCHC MPO
Joe Milazzo, Regional Transportation Alliance

David L. Burns, NC Board of Transportation
Michael S. Fox, NC Board of Transportation
Nina Szlosberg-Landis, NC Board of Transportation
Chuck Watts, NC Board of Transportation
TAC Members