

Member Governments

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

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

AGENDA

**September 26, 2007
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 22, 2007 TCC Meeting Minutes
(Attachment 4)**

A copy of the August 22, 2007 minutes is enclosed as Attachment 4.

TCC Action: Approve minutes of the August 22, 2007 TCC meeting.

**5. 2035 Long Range Transportation Plan and Comprehensive Transportation Plan –
Goals and Objectives
(Attachment 5, 5A, 5B, 5C, 5D, 5E)
Andy Henry, LPA Staff**

Goals and Objectives

The MPO published a draft set of Goals and Objectives for a public comment period from August 1 through September 12, 2007, and conducted two public workshops and a public hearing during this time. At the TAC public hearing on September 12, 2007, staff presented a summary of the public comments (received by September 5, 2007) from comment forms, an online survey, and the public workshops.

Attachment 5 is the draft Goals and Objectives with proposed changes that reflect the issues highlighted by the public comments, including:

- Strong public support for multi-modal, public transit, bicycle and pedestrian transportation;
- Strong support for the natural environment, community values and the reduction of resource consumption;

- Some sentiment for reducing the number of Goals and Objectives;
- Chapel Hill Resolution;
- Proposed changes submitted by Bob Jensch at the public hearing; and,
- Federal legislation (SAFETEA-LU -- Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users) that requires planning for Safety and Security and Freight Transportation.

Attachment 5D is an updated summary of the Goals and Objectives comments that were received through September 12, 2007. Attachment 5E is a copy of a Town of Chapel Hill Resolution and a citizen proposal submitted at the Goals and Objectives public hearing.

FHWA Planning Factors

The Federal Highway Administration (FHWA) imposes a set of Planning Factors that must be satisfactorily addressed in order to receive FHWA approval of the MPO's long range transportation plan. Attachment 5A shows the Goals and Objectives that support particular FHWA Planning Factors.

Targets

As a practice, the DCHC MPO has set Targets to help evaluate the extent to which the Long Range Transportation Plan is expected to meet the Goals and Objectives. Attachment 5B shows the proposed Targets for the 2035 LRTP. At this time, the 2035 Baseline values are still being developed, and therefore most of the Target values are not available, but will be forwarded to TCC members by e-mail before the TCC meeting.

Measures of Effectiveness

The DCHC MPO develops a set of Measures of Effectiveness to help evaluate the various transportation Alternatives that are proposed for the Long Range Transportation Plan. Attachment 5C shows how the proposed Measures of Effectiveness support the Goals and Objectives.

TCC Action: Provide comments and recommend that the TAC approve the 2035 LRTP and CTP Goals and Objectives and Targets.

6. Long Range Transportation Plan and Comprehensive Transportation Plan

Andy Henry, LPA Staff

Staff will provide an update on the process to develop the 2035 Long Range Transportation Plan (2035 LRTP) and Comprehensive Transportation Plan (CTP). These plans will be developed concurrently and therefore the unique intent of each plan and the differences between them are not always clear. In fact, the DCHC MPO has never adopted a CTP -- the North Carolina Department of Transportation (NCDOT) made major revisions to the former Thoroughfare Plan process and renamed it the CTP in the last several years. Part of this LRTP/CTP update will include a short presentation that will distinguish the elements of the two plan processes.

TCC Action: Receive update and presentation, and recommend presentation to the TAC.

7. Special Transit Advisory Commission (STAC) – Contract Amendment **(Attachment 7)**

Mark Ahrendsen, TCC Chair

The DCHC MPO and CAMPO established the Special Transit Advisory Commission (STAC) in spring 2007. The STAC has been meeting every three weeks for several months with the goal of bringing a recommendation to the October 31, 2007 Joint TAC meeting. The work of the STAC is being coordinated by the Institute for Transportation Research and Education (ITRE). The TTA has a contract with ITRE for \$100,000. The DCHC MPO is reimbursing TTA for 20% of the contract, or \$20,000. At the August TCC meeting, the TCC recommended that the TAC provide STP-DA funding for its portion of the costs.

The STAC will not be able to completely finish its work by October 31. TTA and ITRE have requested increasing the contract to \$150,000 and extending the contract to March 15, 2008. Again the DCHC MPO portion of the contract would be 20%, or \$30,000. It is recommended that this be provided using STP-DA funds (\$24,000 federal, \$6,000 local match). Attachment 7 is a memo on this agenda item.

TCC Action: Recommend that the TAC approve the use of \$30,000 in STP-DA funding (\$24,000 federal, \$6,000 local match) for the STAC contract with ITRE.

8. Congestion Mitigation Air Quality (CMAQ) – 2007 Call for Projects **Dale McKeel, LPA staff**

The primary purpose of the Congestion Mitigation and Air Quality Improvement Program (CMAQ) is to fund projects and programs in air quality nonattainment and maintenance areas for ozone, carbon monoxide (CO), and small particulate matter (PM-10) which reduce transportation related emissions.

According to NCDOT records, DCHC currently has programmed \$4,786,952 of a total \$9,332,400 allocation, leaving a balance of \$4,545,448. The first year that there are CMAQ funds available for programming is FY 2009. NCDOT has suggested that the MPO submit CMAQ projects for funding (FY 2009 –2012) through the normal TIP process. In order to document the air quality benefits and receive project approval, a completed CMAQ application will need to be submitted for each CMAQ project.

TCC Action: Discuss the process for selecting DCHC MPO CMAQ projects and set a deadline for submitting project applications.

9. MPO Major Projects - Update **(Attachment 9, 9A)** **Felix Nwoko, LPA Staff**

The LPA has initiated several major projects – the Farrington Road / Stagecoach Road / Farrington Mill Road Corridor Study, the Non-Motorized Trip Model Development, the Land Use Model Development, the MPO Collector Street Plan, the GIS Data Integration project, and the ITS Deployment Plan. The LPA will provide a presentation of the status of these projects at

the September 26 meeting. Attachment 9 is the scope of work and map for the Farrington Road / Stagecoach Road / Farrington Mill Road Corridor project. Attachment 9A is two progress reports on the Non-Motorized Trip Model Enhancement from Cambridge Systematics.

TCC Action: Receive the update on the MPO Major Projects.

10. Durham and Orange County Greenhouse Gas Plan - Update

(Attachment 10)

Ellen Beckmann, LPA Staff

The DCHC MPO is sponsoring the creation of greenhouse gas emissions plans in Durham and Orange Counties. ICLEI Energy Services is the consultant for both plans. The Durham plan is complete and was adopted by the Durham City Council and Durham Board of County Commissioners on September 19, 2007. The Executive Summary of this plan is included as Attachment 10. This plan will be brought to the TAC for adoption at a later date. The Orange County plan is several months behind the Durham plan and is expected to be complete in 2008. The TCC will receive an update of both plans at the September 26 meeting.

TCC Action: Receive the update of the Durham and Orange County Greenhouse Gas Plans.

11. FY 2008 Grant Invoicing and Auditing Procedures

(Attachment 11)

Felix Nwoko, LPA Staff

NCDOT has completed an audit of the MPO planning grants program. Also, the City of Durham conducted an internal and external audit of the MPO grant program consistent with the federal requirements and accounting and disbursement agreement between the City and the State. The LPA will provide a presentation of the outcome of the audit and invoicing requirements at the September 26 meeting. The main recommendation of the audit is the adherence of federal contracting/procurement requirements (Attachment 11).

TCC Action: Receive the presentation of the audit and invoicing requirements.

REPORTS FROM STAFF:

12. Reports from Staff

(Attachment 12)

Felix Nwoko, LPA Staff

TCC Action: Receive Report from staff

13. Report from the Chair

Mark Ahrendsen, TCC Chair

TCC Action: Receive Report from TCC Chair

14. NCDOT Report

(Attachment 14)
Wally Bowman, Division 5 – NCDOT
Mike Mills, Division 7 – NCDOT

INFORMATIONAL ITEMS

15. Recent News Articles
(Attachment 15)

16. Excerpt from the Proposed Rule for Ozone and Request for Public Comment
(Attachment 16)

PENDING ITEMS

Adjourn

Next meeting: October 24, 2007

1 **TECHNICAL COORDINATING COMMITTEE**

2 **August 22, 2007**

3 **MINUTES OF MEETING**

- 4 *Mark Ahrendsen City of Durham/Transportation (TCC Chair)
- 5 *David Bonk Town of Chapel Hill (TCC Vice-Chair)
- 6 *Margaret Hauth Town of Hillsborough/Planning
- 7 *Andy Henry City of Durham/Transportation
- 8 *John Hodges-Copple Triangle J COG
- 9 *Denese Lavender NCDOT/PTD
- 10 *Karen Lincoln Orange County Planning
- 11 *Ray Magyar UNC/Transportation
- 12 *Patrick McDonough Triangle Transit Authority
- 13 *Adena Messinger Town of Carrboro
- 14 *Mike Mills NCDOT – Division 7 Engineer
- 15 *Felix Nwoko City of Durham/Transportation
- 16 *Liz Rooks Research Triangle Foundation
- 17 *Scott Walston NCDOT – TPB
- 18 *Battle Whitley NCDOT – Division 5 Engineer
- 19
- 20 Ellen Beckmann City of Durham/Transportation
- 21 Jeff Dayton HNTB
- 22 Tom King Town of Hillsborough/Planning
- 23 John Tallmadge Triangle Transit Authority
- 24 Chao Wang City of Durham/Transportation
- 25
- 26 *Voting Member

27 Mark Ahrendsen, TCC Chair, called the meeting to order at 9:03 a.m.

28 **PRELIMINARIES:**

29 **Adjustments to the Agenda**

30 Mark Ahrendsen added a presentation on the Triangle Regional TDM Study that will be

31 provided by John Tallmadge with Triangle Transit Authority. An amendment to the Fiscal Year

32 2007-2008 UPWP to provide the DCHC MPO share of the funding for the Special Transit

33 Advisory Commission work was also added to the agenda.

34 Margaret Hauth introduced Tom King. Mr. King is the new Senior Planner for the Town
35 of Hillsborough. He will be attending the TCC meetings.

36 **Public Comments**

37 There were no public comments.

38 **ACTION ITEMS:**

39 **Approval of July 25, 2007 TCC Meeting Minutes (Attachment 4)**

40 A motion was made by Felix Nwoko and seconded by Liz Rooks to approve the July 25,
41 2007 TCC Meeting Minutes. The motion carried unanimously.

42 **2009-2015 Transportation Improvement Program – Regional Priority List (Attachments 5,**
43 **5A, 5B, 5C, 5D, and 5E)**

44
45 Mark Ahrendsen provided an introduction for the 2009-2015 Transportation
46 Improvement Program – Regional Priority List, along with the attachments.

47 Ellen Beckmann reviewed the attachments and provided an update on the 2009-2015
48 Transportation Improvement Program-Regional Priority List with staff. There were a few
49 changes that had to be made to the ranking methodology for clarification purposes.

50 Ellen stated that some of the projects submitted were more appropriate as STP-DA
51 projects. Staff might want to remove these projects or move them around.

52 Attached is a map of the highway projects. Staff is working on the bike/ped projects and
53 the map doesn't have the Chatham County projects on it yet. We hope to have the maps
54 complete for the TAC meeting.

55 David Bonk stated that the recommendation at this point is to recommend that the TAC
56 release this in the current form for the 21-day comment period.

57 Ellen Beckmann stated that Sewell School Road and Homestead Road were submitted by
58 Chapel Hill, Carrboro, and Orange County. They were submitted as a highway project or a

59 bike/ped project by the different jurisdictions; but they are really the same project. They should
60 only be on one list. Adena Messinger stated they did not include turn lanes in the description of
61 their project and that is why they put it in bike/ped projects. The Town of Carrboro will not
62 object to put it in as a highway project.

63 Ellen Beckmann stated there are few projects that don't fit into the ranking system
64 because they are not typical construction projects. The TDM doesn't quite fit. It is probably
65 going to be requested for STP-DA funding, so maybe it should be taken off the TIP list. The ITS
66 Deployment was hard to fit into the ranking methodology as well. Felix Nwoko suggested
67 keeping them on the list for now.

68 Mark Ahrendsen stated let's have a second list by highway division; but keep the MPO-
69 wide list. We also need to put it in writing that this is a tool and there is no obligation to accept
70 the ranking as is. We can move the rankings.

71 A motion was made by Felix Nwoko and seconded by Karen Lincoln to recommend that
72 the TAC release the draft Regional Priority List (Attachments 5B, 5C, and 5D) for a 21-day
73 public comment period and schedule a public hearing at the October TAC meeting. The motion
74 carried unanimously.

75 **STP-DA Call for Projects (Attachment 6)**

76 Felix Nwoko provided an introduction for the STP-DA Call for Projects. Ellen
77 Beckmann stated some of the discussion points are noted on the agenda. We need to hold
78 another subcommittee meeting so a recommendation can be brought to the September TAC
79 meeting.

80 Mark Ahrendsen stated let's complete the STP-DA process before the TIP process is
81 finalized in case some of the projects that ultimately were on the STP-DA program.

82 Ellen Beckmann stated at the subcommittee, they discussed checking the STP-DA table
83 to make sure the funds that were allocated in past years have been spent or the status of the
84 projects to determine how much funding we have available. David Bonk stated he would like to
85 address this during the subcommittee meeting. Felix Nwoko stated the NCDOT says to use one
86 number and don't use the inflation factor because it may over-estimate the future funds. We
87 don't know the 2007 STP-DA amount.

88 John Hodges-Copple stated let's add CMAQ to the request. Felix Nwoko stated there is
89 no CMAQ staff at NCDOT. We also need to remind Terry at NCDOT that we have four
90 unallocated years of CMAQ.

91 A subcommittee meeting will be set before the TCC September meeting.

92 **2035 Long Range Transportation Plan and Comprehensive Transportation Plan – Land**
93 **Use Scenarios (Attachments 7 and 7A)**

94
95 Andy Henry provided an introduction for the 2035 Long Range Transportation Plan and
96 Comprehensive Transportation Plan – Land Use Scenarios, along with the attachments. Andy
97 stated that the LRTP Subcommittee met yesterday and clarified some of the issues.

98 David Bonk stated that in terms of process; these would be developed at a staff level;
99 staff would analyze them; and then take them to the TAC for consideration.

100 Felix Nwoko stated that we need to explore whether we can adopt an alternative. Mark
101 Ahrendsen stated we need to encourage land use updates as part of the process.

102 A motion was made by David Bonk and seconded by Liz Rooks to recommend the
103 scenarios as amended to the TAC as part of the approval of the SE Data for 2035. The motion
104 carried unanimously.

105 **2035 Long Range Transportation Plan and Comprehensive Transportation Plan – Goals**
106 **and Objectives (Attachments 8, 8A, and 8B)**

107

108 Andy Henry provided an update on the 2035 Long Range Transportation Plan and
109 Comprehensive Transportation Plan – Goals and Objectives, along with the attachments.

110 We added two proposed goals to help meet the SAFETEA-LU requirements; one is
111 related to freight and the other is safety and security.

112 Felix Nwoko stated that the goals and objectives were developed as part of the 2025
113 LRTP. The purpose of doing it again is to provide feedback to see if it is still relative.

114 Things that are discussed at the workshops include: how the goals and objectives are
115 used; the 2030 LRTP (e.g. bike and ped); and the SE Data.

116 Scott Walston stated that NCDOT has been unable to develop the Comprehensive
117 Transportation Plan with DCHC. He is having a difficult time with the CTP goals and objectives
118 that Andy Henry sent out. He does not feel they are sufficient for a CTP and is concerned that
119 NCDOT will not support it. There is nothing in the plan about NCDOT initiatives such as the
120 Strategic Highway Corridor initiative.

121 Mark Ahrendsen asked if NCDOT has provided input to DCHC staff and Scott stated he
122 is unable to come to meetings because they are short staffed. Mark asked Scott to send his
123 concerns in writing and the DCHC will address them.

124 **2007-2008 UPWP Amendment**

125 Mark Ahrendsen provided an introduction for the FY 2007-2008 UPWP Amendment.
126 This item is for a recommended amendment to the 2007-2008 UPWP to include the funding for
127 DCHC's share of the staff project, basically the contract with ITRE to staff and administer the
128 work of the STAC. The amendment is for \$20,000.00 - the original commitment. It includes
129 \$16,000 federal funding from STP-DA unobligated balance and Durham provides the non-
130 federal match of \$4,000.00.

131 A motion was made by Felix Nwoko and seconded by Liz Rooks to recommend an
132 amendment to the 2007-2008 UPWP to include \$16,000.00 of STP-DA funds and a \$4,000.00
133 non-federal match. The motion carried unanimously.

134 **TDM Presentation**

135 John Tallmadge with Triangle Transit Authority provided a Power Point Presentation on
136 the TDM.

137 John Hodges-Copple stated that the Long Range TDM plan was completed in June and
138 the main goal of it was to reduce the growth in commuter VMT by 25% by 2015. The plan came
139 up with a number of different tasks and John Tallmadge will discuss this later during the
140 presentation.

141 The shift that is going to occur is what NCDOT has done in the past is going to be pushed
142 down to the regional level and will be done at TJ COG by contract with NCDOT. The cost for
143 the service delivery and monitoring/evaluation would be jointly funded by NCDOT and the
144 MPO's. The timing for these changes is the middle of this fiscal year.

145 David Bonk stated they should use the size of the hotspot to size the budget contribution,
146 e.g. North Raleigh is huge; so it should not count just as one.

147 David Bonk suggested discussing this at a Transit TDM Subcommittee meeting. John
148 Hodges-Copple stated that there are deadlines that need to be adhered to and they are: we need
149 to include a placeholder for STP-DA TDM funds; TJ COG needs to have a contract in place with
150 NCDOT by January 1, 2008 to administer the project; and then in spring 2008 the MPOs need to
151 include funding in the FY 2009 UPWP.

152 **REPORTS FROM STAFF:**

153 **Reports from Staff (Attachment 9)**

154 The reports from staff are attached.

155 **Report from the Chair**

156 Mark Ahrendsen stated that the STAC is making a lot of progress. The goal is still
157 October 31, 2007. Their next meeting will be September 10, 2007. They will be starting to look
158 at corridors and providing guidance at the next meeting. There is a joint TAC meeting on
159 October 31, 2007.

160 Work continues among the transit providers on the Triangle Seamless Service Project and
161 the initiatives associated with that project.

162 Durham is continuing to work with the consultant and NCDOT on the Environmental
163 Study on the East End Connector.

164 The Environmental Study was completed on the Alston Avenue widening project in
165 Durham. There are still some outstanding issues that need to be resolved with NCDOT
166 regarding design features.

167 The Environmental Study is nearing completion on the Miami Boulevard widening near
168 Bethesda. There will be a design public hearing scheduled this fall.

169 On the Hillandale Road widening from I-85 to Carrboro there will be a design public
170 hearing scheduled next spring.

171 **NCDOT Reports (Attachment 11)**

172 Battle Whitley, NCDOT Division 5 Engineer, provided an update on projects. On the
173 NC-55 project; the completion date will be closer to September 30, 2007. On the I-85 project;
174 they are working on the punch list. The biggest problem is they are having issues with utility
175 connections to some of the ITS devices. On the I-40 repair work; they are ahead of schedule.
176 They may be able to do the overlay this construction season.

177 I-540 to Page Road on I-40; NCDOT wants the DCHC MPO to consider looking at a
178 project there. Page Road capacity improvements will be needed. This needs to be coordinated
179 with CAMPO. There is not a candidate project identified yet.

180 Mike Mills, NCDOT Division 7 Engineer, provided an update on projects. The
181 Homestead Road project is complete. The Superstreet project is still continuing with a
182 completion date expected the end of October 2007. There are spot safety projects currently
183 under way. They are on NC-54 between Carrboro and Graham; they will receive turn lanes from
184 spot safety funds and board member funding.

185 **INFORMATIONAL ITEMS:**

186 **Recent News Articles**

187 The recent news articles are attached for review.

188 **Adjournment**

189 There being no further business before the Technical Coordinating Committee, the
190 meeting was adjourned at 10:51 a.m.

2035 Long Range Transportation Plan Goals and Objectives

1. Overall Transportation System

Goal: A safe, sustainable, efficient, attractive, multi-modal transportation system that supports local land use; accommodates trip-making choices; maintains mobility; protects the environment and neighborhoods; and improves the quality of life for urban area residents.

Objectives:

- a) Establish performance standards that will measure the effectiveness of the urban area's overall transportation system in supporting access to goods, services, activities, and destinations.
- b) Select and program transportation projects, which are consistent with community goals and are a cost-effective use of funds.
- c) Develop and maintain a multi-modal regional transportation model that reflects travel patterns and incorporates innovative techniques for evaluating the impacts of proposed transportation investments on travel and land use patterns.
- d) Promote non-automobile transportation alternatives and create efficient connections between all transportation modes.
- e) Conserve natural resources and reduce the rate of energy consumption.
- f) Develop cooperative strategies with employers to reduce congestion and increase the efficiency of the transportation system.
- g) Use transportation funds based on the priority needs of the urban area, in keeping with community values, ~~and explore new funding options.~~
- h) Seek additional funding and funding sources to ensure implementation of the long range plan.
- i) Monitor the implementation of the Plan and the targets through the biannual TIP process.
- j) Ensure that the transportation needs of the youth and elderly, the mobility impaired, and the economically disadvantaged are met.
- k) Work cooperatively with the North Carolina Department of Transportation, neighboring Metropolitan Planning Organizations and Rural Planning Organizations and other transportation-related organizations to address the transportation issues of the broader region.

2. Multi-Modal Street and Highway

Goal: An attractive multi-modal street and highway system that allows people and goods to be moved safely, conveniently, and efficiently.

Objectives:

- a) Establish performance standards and report on the condition and effectiveness of the multi-modal street and highway system.
- b) Create multi-modal street patterns that: encourage safe pedestrian, bicycle, and vehicular travel; provide access to public transportation; and ensure connectivity.
- c) Develop and implement level of service (LOS) standards for the urban area that are based on a cooperative agreement between state and local agencies.
- d) Preserve and enhance the traffic carrying capacity of arterial street systems, while minimizing traffic intrusion in residential neighborhoods.
- e) Identify and recommend design standards that: establish safe speeds; increase pedestrian and bicycle usage of streets; and enhance the attractiveness and appeal of the street and highway system.

3. Public Transportation System

Goal: A convenient, accessible, and affordable public transportation system, provided by public and private operators, that enhances mobility and economic development.

Objectives:

- a) Establish performance standards and report on the condition and effectiveness of the public transportation system.
- b) Increase public transit ridership by enlarging the service area and increasing the frequency of service to within the urban area.
- c) Coordinate transit service within the urban area by promoting high quality, seamless, integrated, and customer-friendly service.
- d) Expand ridesharing, carpool, and vanpool services and opportunities.
- e) Develop and implement alternatives to the use of single occupant vehicles, including high occupancy vehicle (HOV) facilities and regional rail services.
- f) Develop and implement the Regional Transit Plan.
- g) Develop a regional park and ride system for cars and bicycles to support transit services and encourage ridesharing.
- ~~h) Ensure that the transportation needs of the youth and elderly, the mobility impaired, and the economically disadvantaged are met.~~
- ~~i) Identify and recommend land use patterns, parking requirements, and development regulations, which create compact, mixed use, transit friendly, walkable development.~~
- ~~j) Identify and recommend ways that the state and the urban area should work together to maintain and enhance the quality of public transportation service throughout the urban area.~~

4. Pedestrian and Bicycle System

Goal: A pedestrian and bicycle system that: provides ~~an~~ a safe alternative means of transportation; allows greater access to public transit; ~~and~~ supports recreational opportunities; includes off-road trails.

Objectives:

- a) Establish performance standards and report on the condition and effectiveness of the pedestrian and bicycle system.
- b) Maintain and ~~Develop and~~ implement a Regional Pedestrian Plan and a Regional Bicycle Plan.
- ~~e) Update and maintain the Regional Bicycle Plan.~~
- ~~d) c) Identify and recommend ways that local governments may provide adequate staff and resources to meet the goals of their pedestrian and bicycle programs.~~
- ~~e) d) Develop a regional bicycle and pedestrian policy that establishes linkages between activity centers and provides for access to public transit.~~
- ~~f) e) Document whether and how~~ Ensure that bicycle and pedestrian facilities are included in the planning, design, and construction of every roadways project ~~where applicable~~ and every development, site and subdivision plan, including the connection to external transportation facilities.
- ~~g) f) Increase education about the benefits of pedestrian and bicycle alternatives.~~
- ~~h) g) Support the enforcement of pedestrian and bicycle regulations.~~
- ~~i) h) Pursue strong funding commitment for building both pedestrian and bicycle facilities.~~
- ~~j) i) Provide greater safety for pedestrians and bicyclists of all levels of ability, and safer interaction with users of other modes of transportation.~~
- ~~k) j) Encourage the efforts and activities of citizen advocacy groups for pedestrian and bicycling by providing information and support for their programs.~~
- ~~l) Promote the construction of bicycle and pedestrian facilities that will encourage greater use of these modes by the public.~~

5. Integration of Land Use and Transportation

Goal: A Transportation Plan that is integrated with local land use plans and development policies.

Objectives:

- a) Establish performance standards and report on the integration and consistency of the Transportation Plan with local land use plans and development policies.
- b) Create transportation systems that enhance the livability of all communities.
- ~~e) Identify and recommend land use patterns that improve and support transportation efficiency.~~
- ~~d) c) Identify the impacts of different land use patterns and site designs on travel behavior.~~
- ~~e) d) Evaluate the changes in land use brought about by the expansion of existing transportation facilities and the construction of new facilities.~~

~~f~~e) Identify and recommend land use patterns, parking requirements and development policies that increase overall mobility and that improve and support transportation efficiency, and compact, mixed-use, transit-friendly, and walkable development.

6. Protection of Natural Environment and Social Systems

Goal: A multi-modal transportation system which provides access and mobility to all residents, while protecting the public health, natural environment, cultural resources, and social systems.

Objectives:

- a) Establish performance standards and report on transportation impacts on the public health, natural environment, cultural resources, and social systems.
- b) Protect and preserve archaeological, historic, and culturally valuable areas.
- c) Identify and protect environmentally sensitive areas early in the planning process.
- d) Develop and implement modifications to the transportation system that reduce the rate of growth in vehicle miles traveled (VMT).
- e) Modify the transportation system to reduce the pollutants in highway runoff and the vehicle emissions, in accordance with federal, state and local Clean Air and Water legislation.
- f) Minimize the noise and dust generated by transportation facilities in neighborhoods and the urban area.
- ~~g) Preserve culturally diverse areas of the region.~~
- ~~h~~g) Ensure that transportation facilities do not negatively effect—affect disadvantaged populations disproportionately.
- h) Develop and implement a transportation system that supports the reduction of greenhouse gases and carbon production and is coordinated with local greenhouse gas and carbon reduction plans.

7. Public Involvement

Goal: An ongoing program to inform and involve citizens throughout all stages of the development, update, and implementation of the Transportation Plan.

Objective:

- a) Establish performance standards and report on the effectiveness of the public involvement element of the Transportation Plan.
- ~~b~~) Encourage a broad cross section of citizens to take a proactive role in the public policy and transportation planning process. ~~development of the Transportation Plan.~~
- ~~e~~b) ~~Bring a broad cross-section of members of the public into the public policy and transportation planning decision-making process.~~

- ~~d)c~~ Educate the public and elected officials, in order to increase public understanding of both the options and the constraints of transportation alternatives.
- ~~e)d~~ Determine the public's knowledge of the metropolitan transportation system, and public values, ~~and attitudes~~ and concerns toward ~~concerning~~ transportation.
- ~~f) Determine public concerns and/or perceived impacts of elements of the Transportation Plan.~~
- ~~g)e~~ Determine which elements of the Transportation Plan would support or diminish the public's desired lifestyle.

8. Safety and Security

Goal: Continue to improve transportation safety and ensure the security of the transportation system.

Objective:

- a) Reduce fatality, injury, and crash/incident rates on all modes.
- b) Reduce vulnerability of transportation facilities/users to terrorists, natural disasters and risks by implementing and monitoring an evaluation plan, and working with the regional emergency management team.
- c) Reduce economic losses due to transportation crashes and incidents.
- d) Improve the ability to identify high accident locations, and evaluate their impacts in TIP project prioritization.
- e) Provide a safe environment for transportation users through the "3 Es" (Engineering, Enforcement and Education).
- f) Increase transit safety and security for riders and employees.

9. Freight

Goal: Improve mobility and accessibility of freight movement.

Objective:

- a) Relieve congestion on heavily-traveled truck routes.
- b) Improve mobility and access to intermodal operations and facilities.
- c) Establish and designate truck routes consistent with federal, state and local regulations.-

2035 Goals and Objectives
Relationship to FHWA Planning Factors

<p>Planning Factors</p> <p>Goals and Objectives</p>	<p>Economic Vitality: Productivity and Efficiency</p>	<p>Safety of Transportation: Motorized and Nonmotorized Users</p>	<p>Security of Transportation: Motorized and Nonmotorized Users</p>	<p>Access and Mobility: Accessibility for people and freight</p>	<p>Environment: Energy, conservation, Quality of Life, growth and economic development</p>	<p>Integration and Connectivity: People and Freight</p>	<p>Management and Operation: Efficient system</p>	<p>System Preservation</p>
<p>Goal 1: Overall Transportation System</p>								
<p>1a Establish performance standards that will measure the effectiveness of the urban area's overall transportation system in supporting access to goods, services activities, and destinations.</p>							√	
<p>1b Select and program transportation projects, which are consistent with community goals and are a cost-effective use of funds</p>					√			
<p>1c Develop and maintain a multi-modal regional transportation model that reflects travel patterns and incorporates innovative techniques for evaluating the impacts of proposed transportation investments on travel and land use patterns</p>					√			
<p>1d Promote non-automobile transportation alternatives and create efficient connections between all transportation modes</p>				√				
<p>1e Conserve natural resources and reduce the rate of energy consumption</p>					√			
<p>1f Develop cooperative strategies with employers to reduce congestion and increase the efficiency of the transportation system</p>	√			√				
<p>1g Use transportation funds based on the priority needs of the urban area, in keeping with community values.</p>							√	
<p>1h Seek additional funding and funding sources to ensure implementation of the long range plan</p>								
<p>1i Monitor the implementation of the Plan and the targets through the biannual TIP process</p>							√	
<p>1j Ensure that the transportation needs of the youth and elderly, the mobility impaired, and the economically disadvantaged are met.</p>				√				
<p>1k Work cooperatively with the North Carolina Department of Transportation, neighboring Metropolitan Planning Organizations and Rural Planning Organizations and other transportation-related organizations to address the transportation issues of the broader region.</p>								

2035 Goals and Objectives
Relationship to FHWA Planning Factors

Planning Factors Goals and Objectives	Economic Vitality: Productivity and Efficiency	Safety of Transportation: Motorized and Nonmotorized Users	Security of Transportation: Motorized and Nonmotorized Users	Access and Mobility: Accessibility for people and freight	Environment: Energy, conservation, Quality of Life, growth and economic development	Integration and Connectivity: People and Freight	Management and Operation: Efficient system	System Preservation
Goal 2: Multi-Modal Street and Highway								
2a Establish performance standards and report on the condition and effectiveness of the multi-modal street and highway system							✓	✓
2b Create multi-modal street patterns that; encourage safe pedestrian, bicycle, and vehicular travel; provide access to public transportation; and ensure connectivity		✓		✓		✓		
2c Develop and implement level of service (LOS) standards for the urban area that are based on a cooperative agreement between state and local agencies.				✓			✓	
2d Preserve and enhance the traffic carrying capacity of arterial street systems, while minimizing traffic intrusion in residential neighborhoods		✓			✓			
2e Identify and recommend design standards that: establish safe speeds; increase pedestrian and bicycle usage of streets; and enhance the attractiveness and appeal of the street and highway system		✓						

2035 Goals and Objectives
Relationship to FHWA Planning Factors

Goals and Objectives	Economic Vitality: Productivity and Efficiency	Safety of Transportation: Motorized and Nonmotorized Users	Security of Transportation: Motorized and Nonmotorized Users	Access and Mobility: Accessibility for people and freight	Environment: Energy, conservation, Quality of Life, growth and economic development	Integration and Connectivity: People and Freight	Management and Operation: Efficient system	System Preservation
Goal 3 - Public Transportation System								
3a Establish performance standards and report on the condition and effectiveness of the public transportation system							✓	
3b Increase public transit ridership by enlarging the service area and increasing the frequency of service to the urban area.				✓				
3c Coordinate transit service within the urban area by promoting height quality, seamless, integrated, and customer-friendly service						✓		
3d Expand ridesharing, carpool, and vanpool services and opportunities				✓				
3e Develop and implement alternative to the use of single occupant vehicles, including high occupancy vehicle (HOV) facilities and regional rail services						✓		
3f Develop and implement the Regional Transit Plan				✓				
3g Develop a regional park and ride system for cars and bicycles to support transit services and encourage ridesharing						✓		

2035 Goals and Objectives
Relationship to FHWA Planning Factors

Planning Factors Goals and Objectives	Economic Vitality: Productivity and Efficiency	Safety of Transportation: Motorized and Nonmotorized Users	Security of Transportation: Motorized and Nonmotorized Users	Access and Mobility: Accessibility for people and freight	Environment: Energy, conservation, Quality of Life, growth and economic development	Integration and Connectivity: People and Freight	Management and Operation: Efficient system	System Preservation
Goal 4 - Pedestrian and Bicycle System								
4a Establish performance standards and report on the condition and effectiveness of the pedestrian and bicycle system								
4b Maintain and implement a Regional Pedestrian Plan								
4c Identify and recommend ways that local governments may provide adequate staff and resources to meet the goals of their pedestrian and bicycle programs								
4d Develop a regional bicycle and pedestrian policy that establishes linkages between activity centers and provides for access to public transit				√				
4e Document whether and how bicycle and pedestrian facilities are included in the planning, design, and construction of every roadway project and every development, site and subdivision plan, including the connection to external transportation facilities.						√		
4f Increase education about the benefits of pedestrian and bicycle alternatives								
4g Support the enforcement of pedestrian and bicycle regulations								
4h Pursue strong funding commitment for building both pedestrian and bicycle facilities								
4i Provide greater safety for pedestrians and bicyclists of all levels of ability, and safer interaction with users of other modes of transportation			√					
4j Encourage the efforts and activities of citizen advocacy groups for pedestrian and bicycling by providing information and support for their programs								

2035 Goals and Objectives
Relationship to FHWA Planning Factors

Planning Factors Goals and Objectives	Economic Vitality: Productivity and Efficiency	Safety of Transportation: Motorized and Nonmotorized Users	Security of Transportation: Motorized and Nonmotorized Users	Access and Mobility: Accessibility for people and freight	Environment: Energy, conservation, Quality of Life, consistency between planned growth and economic development	Integration and Connectivity: People and Freight	Management and Operation: Efficient system	System Preservation
Goal 5 - Integration of Land Use and Transportation								
5a Establish performance standards and report on the integration and consistency of the Transportation Plan with local land use plans and development policies					✓			
5b Create transportation systems that enhance the livability of all communities					✓			
5c Identify the impacts of different land use patterns and site designs on travel behavior					✓			
5d Evaluate the changes in land use brought about by the expansion of existing transportation facilities and the construction of new facilities					✓			
5e Identify and recommend land use patterns, parking requirements and development policies that increase overall mobility and that improve and support transportation efficiency, and compact, mixed-use, transit-friendly, and walkable development.					✓			

2035 Goals and Objectives
Relationship to FHWA Planning Factors

Planning Factors Goals and Objectives	Economic Vitality: Productivity and Efficiency	Safety of Transportation: Motorized and Nonmotorized Users	Security of Transportation: Motorized and Nonmotorized Users	Access and Mobility: Accessibility for people and freight	Environment: Energy, conservation, Quality of Life, growth and economic development	Integration and Connectivity: People and Freight	Management and Operation: Efficient system	System Preservation
Goal 6 - Protection of Natural Environment and Social Systems								
6a Establish performance standards and report on transportation impacts on the public health, natural environment, cultural resources, and social systems					✓			
6b Protect and preserve archaeological, historic and culturally valuable areas					✓			
6c Identify and protect environmentally sensitive areas early in the planning process					✓			
6d Develop and implement modifications to the transportation system that reduce the rate of growth in vehicle miles traveled (VMT)				✓				
6e Modify the transportation system to reduce the pollutants in highway runoff and the vehicle emissions, in accordance with federal, state and local Clean Air and Water legislation					✓			
6f Minimize the noise and dust generated by transportation facilities in neighborhoods and the urban area					✓			
6g Ensure that transportation facilities do not negatively effect disadvantaged populations disproportionately					✓			
6h Develop and implement a transportation system that supports the reduction of greenhouse gases and carbon production and is coordinated with local greenhouse gas and carbon reduction plans.					✓			

2035 Goals and Objectives
Relationship to FHWA Planning Factors

Goals and Objectives	Economic Vitality: Productivity and Efficiency	Safety of Transportation: Motorized and Nonmotorized Users	Security of Transportation: Motorized and Nonmotorized Users	Access and Mobility: Accessibility for people and freight	Environment: Energy, conservation, Quality of Life, consistency between planned growth and economic development	Integration and Connectivity: People and Freight	Management and Operation: Efficient system	System Preservation
Goal 7 - Public Involvement								
7a Establish performance standards and report on the effectiveness of the public involvement element of Transportation Plan								
7b Encourage a broad cross section of citizens to take a proactive role in the public policy and transportation planning process.								
7c Educate the public and elected officials, in order to increase public understanding of both the options and the constraints of transportation alternatives								
7d Determine the public's knowledge of the metropolitan transportation system, and public values, attitudes and concerns toward transportation.								
7e Determine which elements of the Transportation Plan would support or diminish the public's desired lifestyle					√			

2035 Goals and Objectives
Relationship to FHWA Planning Factors

Planning Factors Goals and Objectives	Economic Vitality: Productivity and Efficiency	Safety of Transportation: Motorized and Nonmotorized Users	Security of Transportation: Motorized and Nonmotorized Users	Access and Mobility: Accessibility for people and freight	Environment: Energy, conservation, Quality of Life, growth and economic development	Integration and Connectivity: People and Freight	Management and Operation: Efficient system	System Preservation
Goal 8 - Safety and Security								
Note: Goal 8 is not in 2030's LRTP. The addition of this goal is proposed to comply with recent federal legislation changes (i.e., SAFETEA-LU)								
8a Reduce fatality, injury, and crash/incident rates on all modes		√						
8b Reduce vulnerability of transportation facilities/users to terrorists, natural disasters and risks by implementing and monitoring an evaluation plan, and working with the regional emergency management team.			√					
8c Reduce economic losses due to transportation crashes and incidents		√						
8d Improve the ability to identify high accident locations, and evaluate their impacts in TIP project prioritization.		√						
8e Provide a safe environment for transportation users through the "3 Es" (Engineering, Enforcement and Education)		√						
8f Increase transit safety and security for riders and employees.		√	√					

2035 Goals and Objectives
Relationship to FHWA Planning Factors

Goals and Objectives	Economic Vitality: Productivity and Efficiency	Safety of Transportation: Motorized and Nonmotorized Users	Security of Transportation: Motorized and Nonmotorized Users	Access and Mobility: Accessibility for people and freight	Environment: Energy, conservation, Quality of Life, consistency between planned growth and economic development	Integration and Connectivity: People and Freight	Management and Operation: Efficient system	System Preservation
Goal 9 - Freight								
Note: Goal 9 is not in 2030's LRTP. The addition of this goal is proposed to comply with recent federal legislation changes (i.e., SAFETEA-LU)								
9a Relieve congestion on heavily traveled truck routes	√					√	√	
9b Improve mobility and access to intermodal operations and facilities.	√					√	√	
9c Establish and designate truck routes consistent with federal, state and local regulations.						√		

**2035 Long Range Transportation Plan
Targets (Draft)**

		2005	2035 Baseline	Good	Better	Best
1	Mobility Targets					
1.1	VMT per capita					
1.2	Total VMT reduction from 2035 Baseline					
1.3	VHT per capita					
1.4	Total VHT reduction from 2035 Baseline					
1.5	Percent VMT at congestion (V/C)					
1.6	Average Travel Time (work trips)					
1.7	Average Travel Time (all trips)					
2	Transit Targets					
2.1	Transit mode share					
2.2	Percent ridership increase from 2035 Baseline					
3	TDM Targets					
3.1	Percent SOV trip share					
3.2	Percent SOV trip reduction from 2035 Baseline					
4	Air Quality Targets (emissions reduction from budget)					
4.1	CO			budget	budget	budget
4.2	NOX			budget	budget	budget
4.3	VOC			budget	budget	budget
5	Financial/Economics Targets					
5.1	Revenue gap closure - ratio (Revenue/cost)					
5.2	Cost effectiveness (cost per ATR)					
5.3	Transit user cost indicator (cost/new rider)					
6	Environment Justice/Land Use					
6.1	Population within 1/4 mile of transit					
6.2	Employment accessibility by transit (jobs within 30 minutes via transit)					
6.3	Ratio of average travel time (All/EJ)					

2035 LRTP and CTP

Goals and Objectives/Measures of Efficiency

Goal 1 - Overall Transportation System: A safe, sustainable, efficient, attractive, multi-modal transportation system that: supports local land use; accommodates trip-making choices; maintains mobility; protects the environment and neighborhoods; and improves the quality of life for urban area residents.

	Objectives	Measures
1 (a)	Establish performance standards that will measure the effectiveness of the urban area's overall transportation system in supporting access to goods, services activities, and destinations.	Do performance measures exist?
1 (b)	Select and program transportation projects, which are consistent with community goals and are a cost-effective use of funds	Benefit-Cost Ratio Linkage to Targets Cost effectiveness
1 [c]	Develop and maintain a multi-modal regional transportation model that reflects travel patterns and incorporates innovative techniques for evaluating the impacts of proposed transportation investments on travel and land use patterns.	Calibrated/validated multi-modal model that meets performance measures ----- ----- -----
1 (d)	Promote non-automobile transportation alternatives and create efficient connections between all transportation modes.	Application of weights to TIP Regional Priority List ----- L RTP Targets ----- Number of inter-modal connectivity ----- Existance of Regional Pedestrian and Bicycle Plans -----
1 (e)	Conserve natural resources and reduce the rate of energy consumption	Meet Greenhouse Gas and emissions reduction tagets ----- ----- -----
1 (f)	Develop cooperative strategies with employers to reduce congestion and increase the efficiency of the transportation system.	Implmentation of Transportation Demand Management (TDM) Plan ----- ADT ----- VMT (vehicle miles traveled) -----
1 (g)	Use transportation funds based on the priority needs of the urban area, in keeping with community values.	Implmentation of Public Involvement Plan ----- Relationship between Deficiency Analysis and Needs Assessment, and adopted LRTP ----- -----
1 (h)	Seek additional funding and funding sources to ensure implementation of the long range plan.	Proportion of transportation funding from non-traditional and local sources ----- Number of feasible non traditional fundig sources ----- -----
1 (i)	Monitor the implementation of the Plan and the targets through the biannual TIP process.	Summary report to TAC members ----- Number of LRTP projects in TIP ----- -----

2035 LRTP and CTP

Goals and Objectives/Measures of Efficiency

1 (j)	Ensure that the transportation needs of the youth and elderly, the mobility impaired, and the economically disadvantaged are met.	Evaluate extent to which Environmental Justice, transit and non-motorized Targets are met ----- Comparison of investment in the different modes
1 (k)	Work cooperatively with the North Carolina Department of Transportation, neighboring Metropolitan Planning Organizations and Rural Planning Organizations and other transportation-related organizations to address the transportation issues of the broader region.	Number of joint projects and programs with partner agencies.

2035 LRTP and CTP

Goals and Objectives/Measures of Efficiency

Goal 2 - Multi-Modal Street and Highway: An attractive multi-modal street and highway system that allows people and goods to be moved safely, conveniently, and efficiently.

	Objectives	Measures
2 (a)	Establish performance standards and report on the condition and effectiveness of the multi-modal street and highway system.	Do performance standards and reports exist? ----- ----- -----
2 (b)	Create multi-modal street patterns that: encourage safe pedestrian, bicycle, and vehicular travel; provide access to public transportation; and ensure connectivity.	Applications of criteria in the TIP Regional Priority ranking methodology ----- Policy to incorporate bicycle and pedestrian facilities in all highway projects ----- Develop multimodal street cross section for LRTP ----- Number of park and ride facilities -----
2 [c]	Develop and implement level of service (LOS) standards for the urban area that are based on a cooperative agreement between state and local agencies.	TRM protocol that defines the Level of Service (LOS) ----- ----- -----
2 (d)	Preserve and enhance the traffic carrying capacity of arterial street systems, while minimizing traffic intrusion in residential neighborhoods.	Number and value of Transportation System Management (TSM) projects in the LRTP ----- Ratio of new-to-existing projects in the LRTP ----- -----
2 (e)	Identify and recommend design standards that: establish safe speeds; increase pedestrian and bicycle usage of streets; and enhance the attractiveness and appeal of the street and highway system.	Neighborhood Development Guidelines ----- Are local land use plans consistent with TIP and LRTP? ----- ----- -----

Goal 3 - Public Transportation System: A convenient, accessible, and affordable public transportation system, provided by public and private operators, that enhances mobility and economic development.

	Objectives	Measures
3 (a)	Establish performance standards and report on the condition and effectiveness of the public transportation system.	Do standards exist? ----- Bi-annual report on section 15 (National Transit Database) ----- -----
3 (b)	Increase public transit ridership by enlarging the service area and increasing the frequency of service within the urban area.	Ridership per square mile ----- Percent of population within service area ----- -----
	Coordinate transit service within the urban area by promoting high quality, seamless, integrated, and customer-friendly service.	The number of regional transit coordination committees and extent of their activities ----- -----

2035 LRTP and CTP

Goals and Objectives/Measures of Efficiency

3 {c}		The level of coordination with other agencies and governments Level of LRTP implementation with other agencies
3 (d)	Expand ridesharing, carpool, and vanpool services and opportunities.	Level to which LRTP Targets are met
3 (e)	Develop and implement alternatives to the use of single occupant vehicles, including high occupancy vehicle (HOV) facilities and regional rail services.	Level to which mode split Targets are met
3 (f)	Develop and implement the Regional Transit Plan.	TAC approve Transit Element of LRTP? TAC approve Transit Map of CTP?
3 (g)	Develop a regional park and ride system for cars and bicycles to support transit services and encourage ridesharing.	Number of park and ride facilities Utilization of park and ride facilities

2035 LRTP and CTP

Goals and Objectives/Measures of Efficiency

Goal 4 - Pedestrian and Bicycle System: A pedestrian and bicycle system that: provides a safe alternative means of transportation; allows greater access to public transit; and supports recreational opportunities; includes off-road trails.

	Objectives	Measures
4 (a)	Establish performance standards and report on the condition and effectiveness of the pedestrian and bicycle system.	What performance standards exist? ----- ----- -----
4 (b)	Maintain and implement a Regional Pedestrian Plan and a Regional Bicycle Plan.	Does LRTP produce pedestrian and bicycle elements? Does CTP produce pedestrian and bicycle map? ----- -----
4 {c}	Identify and recommend ways that local governments may provide adequate staff and resources to meet the goals of their pedestrian and bicycle programs.	Assessing resource needs and availability as part of the Unified Planning Work Program (UPWP) ----- -----
4 (d)	Develop a regional bicycle and pedestrian policy that establishes linkages between activity centers and provides for access to public transit.	Level to which LRTP produce pedestrian and bicycle elements that are linked Level to which CTP produce pedestrian and bicycle map that is linked ----- -----
4 (e)	Document whether and how bicycle and pedestrian facilities are included in the planning, design, and construction of every roadway project and every development, site and subdivision plan, including the connection to external transportation facilities.	Number of TIP roadway projects with bike and pedestrian improvements Number of pedestrian and bicycle improvements in resurfacing projects ----- -----
4 (f)	Increase education about the benefits of pedestrian and bicycle alternatives.	Percent of resources and time dedicated to bicycle and pedestrian education Level of ancillary programs implementing the 3Es (Engineering, Enforcement and Education) ----- -----
4 (g)	Support the enforcement of pedestrian and bicycle regulations	Level of coordination with law enforcement agencies ----- -----
4 (h)	Pursue strong funding commitment for building both pedestrian and bicycle facilities.	Level of funding for bicycle and pedestrian facilities ----- -----
	Provide greater safety for pedestrians and bicyclists of all level of ability, and safer interaction with users of other	Accident rate/crash data -----

2035 LRTP and CTP

Goals and Objectives/Measures of Efficiency

4 (i)	level of ability, and safer interaction with users of other modes of transportation.	Level of safety programs
4 (j)	Encourage the efforts and activities of citizen advocacy groups for pedestrian and bicycling by providing information and support for their programs.	Number of improvements implemented Level of coordination with bike and pedestrian citizen groups

2035 LRTP and CTP

Goals and Objectives/Measures of Efficiency

Goal 5 - Integration of Land Use and Transportation: A Transportation Plan that is integrated with local land use plans and development policies.

	Objectives	Measures
5 (a)	Establish performance standards and report on the integration and consistency of the Transportation Plan with local land use plans and development policies.	Do performance standards exist? Level of coordination between MPO and Planning agencies Degree of linkages between transportation and land use
5 (b)	Create transportation systems that enhance the livability of all communities.	Level of consistency between LRTP and development patterns
5 (c)	Identify the impacts of different land use patterns and site designs on travel behavior.	Model alternative land use scenarios
5 (d)	Evaluate the changes in land use brought about by the expansion of existing transportation facilities and the construction of new facilities.	Use product from Land Use Model project
5 (e)	Identify and recommend land use patterns and development policies that increase overall mobility and that support compact, mixed-use, transit-friendly, walk able development.	Model alternative land use scenarios

2035 LRTP and CTP

Goals and Objectives/Measures of Efficiency

Goal 6 - Protection of Natural Environment and Social Systems: A multi-modal transportation system which provides access and mobility to all residents, while protecting the public health, natural environment, cultural resources, and social systems.

	Objectives	Measures
6 (a)	Establish performance standards and report on transportation impacts on the public health, natural environment, cultural resources, and social systems.	Do performance standards exist? ----- Do environmental evaluations criteria exist? ----- -----
6 (b)	Protect and preserve archaeological, historic, and culturally valuable areas.	Use of LRTP and CTP evaluation criteria ----- Weight of criteria in TIP Regional Priority ranking methodology ----- -----
6 {c}	Identify and protect environmentally sensitive areas early in the planning process.	Use of LRTP and CTP evaluation criteria ----- Weight of criteria in TIP Regional Priority ranking methodology ----- -----
6 (d)	Develop and implement modifications to the transportation system that reduce the rate of growth in vehicle miles traveled (VMT).	VMT (vehicle miles traveled) reduction ----- VHT (vehicle hours traveled) reduction ----- PMT (person miles traveled) reduction ----- Monitor VMT and VHT Targets
6 (e)	Modify the transportation system to reduce the pollutants in highway runoff and the vehicle emissions, in accordance with federal, state and local Clean Air and Water legislation.	Greenhouse Gas emission reduction targets ----- TAC, state and federal approval of Conformity Determination Report ----- -----
6 (f)	Minimize the noise and dust generated by transportation facilities in neighborhoods and the urban area.	Use of noise studies in project impact analysis (planning and design phase) ----- ----- -----
6 (g)	Ensure that transportation facilities do not negatively effect disadvantaged populations disproportionately.	Monitor Environmental Justice Targets ----- ----- -----
6 (h)	Develop and implement a transportation system that supports the reduction of greenhouse gases and carbon production and is coordinated with local greenhouse gas and carbon reduction plans.	Monitor success of Greenhouse Gas emission reduction plan ----- ----- -----

2035 LRTP and CTP

Goals and Objectives/Measures of Efficiency

Goal 7 - Public Involvement: An ongoing program to inform and involve citizens throughout all stages of the development, update, and implementation of the Transportation Plan.

	Objectives	Measures
7 (a)	Establish performance standards and report on the effectiveness of the public involvement element of the Transportation Plan.	Do performance standards exist? ----- Number of Web site hits ----- Use survey instrument -----
7 (b)	Encourage a broad cross section of citizens to take a proactive role in the public policy and transportation planning process.	Number and type of public involvement activities ----- Survey of results ----- Number of public comments received ----- Number of attendance
7 {c}	Educate the public and elected officials, in order to increase public understanding of both the options and the constraints of transportation alternatives.	Opportunities for elected bodies to provide input ----- Use of survey -----
7 (d)	Determine the public's knowledge of the metropolitan transportation system, and public values, and concerns toward transportation.	Number of Responses ----- Use of survey -----
7 (e)	Determine which elements of the Transportation Plan would support or diminish the public's desired lifestyle.	Use of survey ----- ----- -----

2035 LRTP and CTP

Goals and Objectives/Measures of Efficiency

Goal 8 - Safety and Security: Continue to improve transportation safety and ensure the security of the transportation system.

	Objectives	Measures
8 (a)	Reduce fatality, injury, and crash/incident rates on all modes	Fatality rates ----- Crash rates ----- Rail road crossing crashes ----- Transit crashes ----- Highway crashes ----- Bike/Ped incidents/injuries
8 (b)	Reduce vulnerability of transportation facilities /users to terrorists, natural disasters and risks by implementing an evacuation plan and monitoring the effectiveness of the plan.	Emergency evacuation plan exist? ----- ----- -----
8 {c}	Reduce economic losses due to transportation crashes and incidents	Cost of crashes per 100 million VMT ----- ----- -----
8 (d)	Improve the ability to identify high accident locations, and evaluate their impacts in TIP project prioritization.	Weight of criteria in TIP Regional Priority ranking methodology
8 (e)	Provide a safe environment for transportation users through the "3 Es" (Engineering, Enforcement, and Education).	Assess the implementation of the 3Es (Engineering, Enforcement and Education) ----- Accident reduction attributable to education ----- -----
8 (f)	Increase transit safety and security for riders and	Number of transit incidents

Goal 9 - Freight: Improve mobility and accessibility of freight movement

	Objectives	Measures
9 (a)	Relieve congestion on heavily traveled truck routes	Percentage of truck VMT under congested conditions ----- Percentage of truck VMT in off-peak -----
9 (b)	Improve mobility and access to intermodal operations and facilities.	Level of access to intermodal terminal operations ----- ----- -----
9 {c}	Establish and designate truck routes consistent with federal, state and local regulations.	Designation of truck routes ----- ----- -----

A RESOLUTION PROVIDING COMMENTS AND RECOMMENDATIONS TO THE DURHAM-CHAPEL HILL-CARRBORO TRANSPORTATION ADVISORY COMMITTEE ON THE DRAFT 2035 LONG RANGE TRANSPORTATION PLAN GOALS AND OBJECTIVES.

WHEREAS; the Durham-Chapel Hill-Carrboro Urban Area has begun the development of a 2035 Long Range Transportation Plan; and

WHEREAS, the Durham-Chapel Hill-Carrboro Transportation Advisory Committee has released draft 2035 Goals and Objectives intended to guide the development of the 2035 Plan; and

WHEREAS, the Town Council has reviewed the draft 2035 Goals and Objectives.

NOW, THEREFORE, BE IT RESOLVED, by the Council of the Town of Chapel Hill, that the Council endorses the draft 2035 Long Range Transportation Plan with the following modifications:

The following objective should be added to goal 6, Protection of Natural Environment and Social Systems.

- Develop and implement a transportation system that supports the reduction of greenhouse gases and carbon production and is coordinated with local greenhouse gas and carbon reduction plans.

Goal 1, Overall Transportation System should be amended as follows:

- A safe, sustainable, efficient, attractive, multi-modal transportation system that supports local land use; accommodates trip-making choices; maintains mobility; protects the environment and neighborhoods; and improves the quality of life for urban area residents

Goal 4, Pedestrian and Bicycle System should be amended as follows:

- A pedestrian and bicycle system that: provides a safe alternative means of transportation; allows greater access to public transit; and supports recreational opportunities.

This the 10th day of September, 2007

2030 LONG RANGE TRANSPORTATION PLAN

GOALS AND OBJECTIVES

September 12, 2007, (DCHC-MPO) public hearing suggestions by Bob Jentsch, 3906 Springstop Lane, Durham, North Carolina 27705

- As part of 1. Overall Transportation System

Goal: add a definition of multi-modal that includes "off-road trails, pedestrian and bicycle systems."

- As part of 4. Pedestrian and Bicycle System

Change Objective f) to read as follows:

"Ensure that bicycle and pedestrian facilities are included in the planning, design, and construction of roadways by requiring that all development plan, site plan, and subdivision plans designate a comprehensive pedestrian and bicycle system that not only connects all elements within the development but also connects the development to adjacent and nearby developments, bicycle and pedestrian systems, trails, greenways, open space and transit stops."

Durham-Chapel Hill Carrboro Metropolitan Planning Organization (DCHC MPO) *Goals and Objectives Summary (as of September 12, 2007)*

Background

The MPO has published a draft set of Goals and Objectives for a public comment period that runs from August 1 through September 12, 2007. The Goals and Objectives will guide the overall development of the 2035 Long Range Transportation Plan (2035 LRTP) and the specific tasks such as the selection of transportation projects and policies. The MPO staff has received feedback from several sources, including:

- A Web-based online survey;
- Completed comment forms that were mailed to citizens and also distributed at two public workshops; and,
- Documents in which citizens edited copies of the Goals and Objectives.

The remainder of this document provides a summary of the feedback from the comment forms and the survey.

Full Documentation Available

A compilation of all the completed comment forms and a summary of the online survey are available for review on the MPO's Web site – www.dchcmpo.org.

Summary of Comment Forms

The MPO received thirty-two comment forms. Overall, the respondents support the existing Goals and Objectives, especially those related to the Bicycle and Pedestrian transportation, Natural Resources and Environment, Public Transportation, and Land Use integration. Some respondents believed the list of Goals and Objectives could be consolidated to reduce redundancy. Several contemporary issues were often identified as the motive for supporting a certain Goal or Objective; these issues include global warming, fossil fuel depletion, sustainability and health and exercise.

The remainder of this section provides an additional summary of the major (i.e., often identified) and minor themes (i.e., identified enough to merit mentioning).

Major Themes

Bicycle and Pedestrian – This transportation mode received the most frequent support among respondents, and some people believed that new development should be required to connect to a planned bicycle and pedestrian system. Others

identified this transportation mode as essential to a multimodal transportation system and a necessary alternative for low-income people.

Public Transportation – This transportation mode received strong support, and was frequently identified as essential to a sustainable and equitable transportation system, and a healthy environment.

Natural Environment and Social Systems – This goal received strong support, and was often identified as a product of a balanced, multimodal transportation system.

Integration of Land Use and Transportation – This goal received strong support, and was often identified as a necessary condition to support public transportation, a multimodal transportation system, the natural environment and other Goals.

Overall Transportation System – A balanced, multimodal transportation system received fairly strong support, and a few respondents identified this Goal as one that would lead to the accomplishment of the other Goals.

Opportunity for Input Appreciated – Many respondents commented that they appreciated the opportunity to provide input to the transportation planning process.

Good Set of Goals – Many respondents believed the set of Goals and Objectives were very comprehensive and specific enough for planning purposes.

Reduce and Clarify – Some respondents believed there were too many Goals and Objectives. They believed that the redundant, “self-evident,” and overly generalized Goals and Objectives could be eliminated. A few respondents wanted them to be more specific or attached to a measurement.

Minor Themes

Implementation – Some respondents believed the Goals and Objectives were good but that implementation was lacking.

Money and funding – The need for additional transportation funding was identified several times.

Seniors, Children, Low-Income and Good Health – The need to support non-automobile transportation modes, such as transit, and bicycle and pedestrian transportation, was identified as essential for the seniors, children and low-income population, and for good health.

Summary of Survey

The MPO developed an online survey to capture the public's level of support for the various Goals and Objectives. The survey Web link was distributed to citizens by mail and electronic mail (approximately 1,000 citizens are on the mailing address list), and was often redistributed by a neighborhood or interest group to its members. At this point, there have been 191 survey respondents. This section summarizes the two main survey parts. A copy of the original survey summary, which includes a few additional questions and general socioeconomic data on the respondents, is available on the MPO's Web site – www.dchcmo.org, and as Attachment 8C in the September 12, 2007 TAC meeting packet. Please note that the survey incorporated two draft Goals based on the requirements of the most recent federal transportation legislation, i.e., SAFETEA-LU. These two draft Goals are Safety and Security, and Freight Transportation.

Support for Goals

The survey asked respondents to award points to Goals based on their level of support. They could award a total of 100 points among the nine Goals, but no more than 20 points to any single Goal. The results in the table below list the Goals in their order of overall support, and provide response data to indicate the relative strength of support. Support appears to be strong for all Goals except Public Involvement, Safety and Security and Freight, shown below the solid black line in the table below.

No.	Goal	Total Points	Mean
1	Public Transportation System	180	15.2
2	Overall Transportation System	176	16.2
3	Pedestrian and Bicycle System	176	16.0
4	Protection of the Natural Environment and Social Systems	175	14.8
5/6	Multimodal Street and Highway	172	16.2
5/6	Integration of Land Use and Transportation	170	12.3
7	Public Involvement	148	8.9
8	Safety and Security	133	9.5
9	Freight Transportation	122	5.4

Support for Objectives

The survey asked respondents to award points to clusters of similar Objectives based on their level of support. They could award a total of 100 points among the twenty groups of Objectives, but no more than 10 points to any single Goal. The results in the table below lists the groups of Objectives in their order of overall support, and provides response data to indicate the relative strength of support. Support appears strongest among non-automobile transportation modes, preservation of the environment and community assets, and reduced resource consumption, shown above the solid black line in the table on the next page.

No.	Group of Objectives	Total Points	Mean
1	Clean air and clean water	181	8.8
2	Bicycle transportation	174	8.3
3	Public transportation	173	8.4
4	Reduce gas and electrical consumption	172	8.1
5	Preserve historic and valued sites, natural areas and plants and animals	170	7.8
6	Land use to support bicycling and walking	169	8.2
7	Pedestrian transportation	167	7.8
8	Agency coordination	162	6.9
9	Educate public on safety and multimodal use	146	5.8
10	Transportation projects that are beautiful and functional	143	6.1
11	Cost efficient transportation projects	136	6.6
12	Low-income and minorities in decision-making process	130	5.2
13	Seek innovative funding mechanisms	128	5.8
14	Reduce congestion on roads	125	5.8
15	Projects should reflect local community values	125	5.2
16	Adopt uniform performance standards	122	5.6
17	Accommodate freight	120	4.9
18	Monitor and communicate progress	119	4.8
19	Make transportation system safer	110	4.6
20	Greater security	97	3.3

MEMORANDUM

TO: Technical Coordinating Committee (TCC)
DCHC MPO

FROM: Lead Planning Agency

DATE: September 26, 2007

RE: STAC Contract Amendment

LPA staff requests an additional allocation of STP-DA funds to reimburse the Triangle Transit Authority (TTA) for an amendment to the contract between TTA and the Institute for Transportation Research and Education (ITRE). This contract is for support services for the Special Transit Advisory Commission (STAC) and the joint MPO "Blueprint" transit process. The proposed contract amendment is to extend the period of performance from December 31, 2007 to March 15, 2008 and to increase the contract amount from \$100,000 to \$150,000. The TTA will be bringing this contract amendment to their Board in October. The City of Durham has entered into an inter-local agreement with TTA and the City of Raleigh to reimburse TTA for a portion of the cost of the contract. The TCC has recommended that STP-DA funds be used for this project.

The Special Transit Advisory Commission (STAC) charge originally assumed a completion date of October 31, 2007 and a budget of \$100,000. Based on the sharing arrangement among the four funding partners (TTA, 25%; NC DOT 25%; CAMPO 30%; and DCHC MPO 20%), DCHC MPO's share was \$20,000.

The contract scope of work has taken longer than anticipated and the STAC co-chairs are making plans for at least two more STAC meetings beyond the October 31, 2007 presentation to the Joint MPO TAC. This action alone will produce a deficit of at least \$16,260 unless additional funds are authorized. TTA and ITRE staffs are requesting an extension to March 15, 2008 and a corresponding increase in contract value of \$50,000.

Original Contract Value	\$100,000
Increase in contract through December 31, 2007	\$16,260
10 additional weeks at the monthly expense rate	\$29,065
<u>10% contingency on scope beyond October 31, 2007</u>	<u>\$4,532</u>
Total Cost Estimate	\$149,857
 Suggested Not-to-Exceed Contract Value	 \$150,000

The total DCHC MPO STP-DA funds needed for this project will be \$30,000 (\$26,000 federal and \$4,000 local match).

Farrington/Stagecoach Road Corridor Study – Outline of Work Scope

Task 1: Analysis of Existing Conditions

1.1 Traffic

- Intersection LOS
- V/C Ratio
- ADT
- Existing facilities (thoroughfares, collectors and local roads)
- Existing transit routes and bike-pedestrian facilities

1.2 Travel

- Regional Traffic Patterns - From Western Chatham County (Jordan Lake) to RTP
- Commuting pattern – County-County flow from 2000 Census JTW
- 2005 Base year model traffic diversion from Chatham Co.
- 2005 model Select Link analysis (provided by the MPO)
- 2006 HH Survey commute flow and All-Trips flow (MPO)

1.3 Land Use

- Existing land use plan
- Existing building permits and COs
- Existing development/site plans.
- 2005 SE dwelling units (provided by the MPO)
- 2005 employment (provided by the MPO)

1.4 Environmental

- Mapping of environmental features and constraints
- Existing Army Corp of Engineers features and permit

Task 2: Evaluation of Future Conditions

1.1 Future Land-Use

- Planned, Submitted and approved development/site plan
- 2035 dwelling units
- 2035 employment
- Land-use scenarios

1.2 Future Traffic and Travel Conditions

- 2035 Intersection LOS (MPO to provide model 2035 daily volume)
- 2035 V/C Ratio (MPO to provide 2035 model results)
- 2035 select links (MPO)
- 2035 trips analysis O-D pairs (district-to-district)
- 2035 trips analysis O-D pairs (district-to-district)
- Mapping of future roadway facilities, including collectors and subdivision local roads

Task 3: Identification of Issues & Articulation of Problem

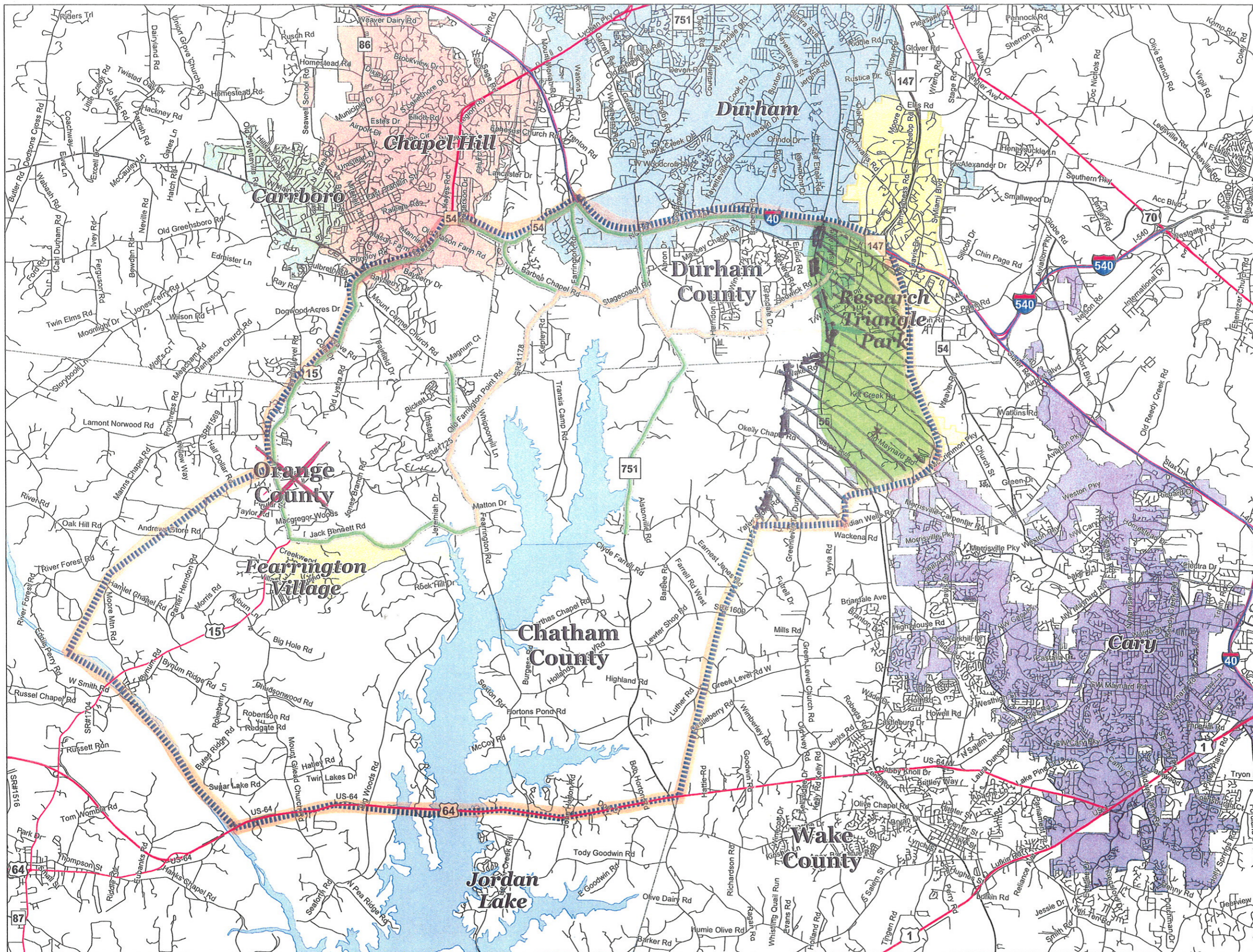
- Summary traffic and travel issues, challenges and implications
- Summary of land-use issues, challenges and implications
- Summary of environmental issues and implications

Task 4: Recommendation, Opportunities & Potential solutions

- Transportation improvements
- Proposed roadway connectivity (collector and local roads).
- Minor improvements (TSM type projects- intersection, phasing, etc)
- Integrated land-use/Transportation opportunities

FIGURE 1

Proposed Farrington Road Corridor Study



- Proposed Study Corridor
- Proposed Study Area Roads
- Interstates
- US Highways
- State Highways
- State Roads
- Study Area
- Counties
- Lakes
- Research Triangle Park
- Surrounding Communities**
- Durham
- Chapel Hill
- Fearington Village
- Cary
- Carrboro

RTP may come out of study because of data limitations.

Kimley-Horn and Associates, Inc.



1 0.5 0 1 2 Miles
Page 3 of 3

Memorandum

TO: Felix Nwoko

FROM: Laura McWethy, Tom Rossi, John (Jay) Evans, P.E., AICP

DATE: September 18, 2007

RE: Task 3 - Nonmotorized Model Estimation Methods
Durham-Chapel Hill-Carrboro MPO Nonmotorized Model Development

This memo details the work conducted to develop a new nonmotorized model for the Durham-Chapel Hill-Carrboro (DCHC) Metropolitan Planning Organization (MPO), to be used with the Triangle Regional Model. It lists the initial set of model formulations, the variables from Task 2 of the project to be considered for the model, the data input needs of the model, the outputs produced, the data preparation, the model estimation procedures used, and the validation standards to be attained by the model.

Initial Model Formulations

The initial set of model formulations was taken from the Triangle Regional Model (TRM) 2006 documentation and was a binary logit model with the dependent variable being the probability that a trip would be nonmotorized. The independent variables included household income of the traveler, car ownership, zone area type of the traveler (a measure of area density), and an accessibility measure.

The accessibility measure is defined below:

$$A(i) = \sum_j \frac{S(j)}{T_{i,j}^2}$$

Where,

$A(i)$ = accessibility for zone i

$S(j)$ = a measure of activity in zone j : population, employment, or population plus employment

$T_{i,j}$ = impedance separating zones i and j (highway distance, not including freeways)

The exact variables used are detailed in Table 1 below, adapted from the TRM 2006 documentation.

Table 1. Initial Variables Used in the Nonmotorized Model

Variable	Description
Str1dum	No Car Indicator, 1 if Car = 0
Str2dum	Low Income Indicator, 1 if Inc<=19,999
Str3dum	Med. Inc and Less Cars Indicator, 1 if 20,000<=Inc<=99,999 and Cars<Workers
Str4dum	Med. Inc and More Cars Indicator, 1 if 50,000<=Inc<=99,999 and Cars >=Workers
Str5dum	High Income Indicator, 1 if Inc>=100,000
EmpDis	Employment Distance Accessibility Measure
PopDis	Population Distance Accessibility Measure
EPDis	Emp + Pop Distance Accessibility Measure
Urban	High Density Indicator, 1 if Area Type = 1
Suburban	Medium Density Indicator, 1 if Area Type = 2
Rural	Low Density Indicator, 1 if Area Type = 3

Additional Variables to be Included in Updated Model

Task 2 of the project identified three potential areas for new variables to be incorporated into the model, including land use mix and density, zonal network characteristics, and person and household characteristics. A new variable was tested in each of the three areas to determine which variables are best to include in the model. The current density indicators used were retained and a variable indicating the population and employment mix in the zone was included. This variable was defined as $((2 * (People + Jobs)) - abs(People - Jobs))$ per acre in the zone. The network variable tested in the model estimation was average block perimeter in the zone. The household income and vehicle ownership were retained in the model, although formulated differently than the original model, as well as including the presence of children in the traveler's household. Table 2 details the variables added to the original nonmotorized model.

Table 2. Additional Variables Used in the Phase 1 Nonmotorized Model

Variable	Description
Inc2	Low-Medium Income Indicator, $25,000 \leq \text{Inc} \leq 49,999$
Inc3	Medium-High Income Indicator, $50,000 \leq \text{Inc} \leq 99,999$
Inc4	High Income Indicator, $\text{Inc} \geq 100,000$
Inc234	Not Low Income Indicator, $\text{Inc} \geq 25,000$
LessVeh	Less vehicles than workers in the household, with at least one vehicle, $\text{Cars} < \text{Workers}$
MoreVeh	At least or more vehicles than workers in the household, $\text{Cars} \geq \text{Workers}$
PChild	Presence of children in the household
Suburb	Medium Density Indicator
LUMix	Land Use Mix = $((2 * (\text{People} + \text{Jobs}) - \text{abs}(\text{People} - \text{Jobs})) / \text{acre})$
AveBlock	Average Street Block Perimeter in Zone

Data Input Needs

The model's data input needs include the trips by zone from the Trip Production step of the TRM model, zonal-level density, population, employment, and average block perimeter information, as well as traveler information for each trip. The traveler information needed includes household vehicle ownership, household income, and presence of children in the household.

Outputs Produced

The outputs from the model are the probabilities for each zone that a trip will be nonmotorized. These probabilities are then used to calculate the number of nonmotorized trip productions in each zone and are subtracted from the trip tables that are fed into the trip distribution model.

Data Preparation

The TAZ-level data were compiled into one file and the variables and their origins are detailed in Table 3.

Table 3. TAZ-Level Data File Variable Description

Variable	Description	Origin
TAZ_02	TAZ label from the 2002 TRM	TRM data files
Urban	High Density Indicator, 1 if Area Type = 1	TRM socioeconomic data file
Suburban	Medium Density Indicator, 1 if Area Type = 2	TRM socioeconomic data file
Rural	Low Density Indicator, 1 if Area Type = 3	TRM socioeconomic data file
Pop	TAZ Population	TRM socioeconomic data file
Emp	TAZ Employment	TRM socioeconomic data file
LUMix	Land Use Mix = $((2*(\text{People}+\text{Jobs})-\text{abs}(\text{People}-\text{Jobs}))/\text{acre})$	Calculated from TRM socioeconomic data
EmpDis	Employment Distance Accessibility Measure	TRM data file - TRM2005EN\Interim\raccstr.dat
PopDis	Population Distance Accessibility Measure	TRM data file - TRM2005EN\Interim\raccstr.dat
EPDis	Emp + Pop Distance Accessibility Measure	TRM data file - TRM2005EN\Interim\raccstr.dat
AveBlock	Average Block Perimeter	Calculated from the CCDATA Streets file from Caliper

The trip-level data was compiled into one Excel file, along with the TAZ-level variables. This file was used for the estimation preparation and for summary statistics. The Trip Purpose sheets were used for the estimation files. This file has multiple sheets, the definition of which is located in Table 4.

Table 4. Trip Records Data File Sheet Description

Sheet	Description
Summary	Summary tables
Total Act	Complete set of activity records prior to cleaning, with extraneous variables removed
Total Trip	Complete set of trip records prior to cleaning, with at-home activities removed
Cleaned	Complete set of cleaned trip records, with records missing variable data removed
HBW	Home-based work trips for estimation
HBSH	Home-based shopping trips for estimation
HBO	Home-based other trips for estimation
HBSC	Home-based school trips for estimation
NHB	Nonhome-based trips for estimation
Removed	Trips with missing variable data removed from the estimation files

Table 5 describes the variables and their origins in the trip-level data file.

Table 5. Trip Record File Variable Description

Variable	Description	Origination
TripID	Unique Trip Identifier	Determined by CS
SAMPN	Unique Household Identifier	Household Survey
PerNo	Unique Person Identifier within Household	Household Survey
PerID	Unique Person Identifier	Calculated as SAMPN*100+PerNo
PType	Type of Place (home, work, school, etc.)	Household Survey
TPurp	Trip Purpose	Household Survey
HBW	Home-Based Work Trip Indicator	Calculated (See below for logic)
HBSH	Home-Based Shopping Trip Indicator	Calculated (See below for logic)
HBO	Home-Based Other Trip Indicator	Calculated (See below for logic)
NHB	Nonhome-Based Trip Indicator	Calculated (See below for logic)
Mode	Trip Mode	Household Survey
NonMotor	Nonmotorized Trip Indicator	Calculated (Mode = Walk or Bicycle)
PChild	Presence of Children in Household	Calculated from Household Survey
NChild	Number of Children in Household	Calculated from Household Survey
INCOM	Household Income	Household Survey
HHVEH	Number of Household Vehicles	Household Survey
HHWRK	Number of Household Workers	Household Survey
FINWT	Household Weight	Household Survey
EXPWT	Household Expansion Factor	Household Survey
Str1dum	No Car Indicator, 1 if Car = 0	Calculated from Household Survey
Str2dum	Low Income Indicator, 1 if Inc<=24,999	Calculated from Household Survey
Str3dum	Med. Inc and Less Cars Indicator, 1 if 25,000<=Inc<=99,999 and Cars<Workers	Calculated from Household Survey
Str4dum	Med. Inc and More Cars Indicator, 1 if 50,000<=Inc<=99,999 and Cars >=Workers	Calculated from Household Survey
Str5dum	High Income Indicator, 1 if Inc>=100,000	Calculated from Household Survey
Inc1	Low Income Indicator, Inc<25,000	Calculated from Household Survey
Inc2	Low-Med Income Indicator, 25,000<=Inc<=49,999	Calculated from Household Survey
Inc3	Med-High Income Indicator, 50,000<=Inc<=99,999	Calculated from Household Survey
Inc4	High Income Indicator, Inc>=100,000	Calculated from Household Survey
NoVeh	No vehicles in the household	Calculated from Household Survey
LessVeh	Less vehicles than workers in the household, with at least one vehicle, Cars<Workers	Calculated from Household Survey
MoreVeh	At least or more vehicles than workers in the household, Cars >=Workers	Calculated from Household Survey

To determine the trip purpose, the following logic is applied. If the previous activity has the same person identifier (PerID) and the previous type of place (PType) is home, or if the next activity has the same PerID and the next PType is home, it is determined to be a home-based trip. For home-based trips, if the current activity is work or work-related, it is a home-based work trip. If the current activity is shopping, it is a home-based shopping trip. If the current activity is either a drop-off/pick-up someone at school, attending school, or school-related activity, it is considered a home-based school trip. If the current activity is any other activity, including visit friends/relatives, personal business, eat meal outside of home, entertainment, recreation/fitness, civic/religious activities or other, it is a home-based other trip. If the previous activity has the same PerID and neither the previous or the next PType is not home, then it is a nonhome-based trip.

Estimation Procedure

The nonmotorized model is a disaggregate binary choice model separated into five trip purposes, including home-based work, home-based shopping, home-based other, home-based school, and nonhome-based.

The estimation file for the nonmotorized model was created from the 2006 Greater Triangle Travel Study Household Travel Survey. This survey contained approximately 5,000 households, detailing each individual's travel patterns during a 24-hour period. After linking "pick-up/drop-off," "changing mode," and "quick stop" activities in the activities file from the 2006 Household Travel Survey and converting activities into trips, there were a total of 35,343 trips. A total of 7,313 trips were removed because there were outside the 2002 TAZ structure, 1,660 trips were removed because they did not have block perimeter data, and 1,302 trips were removed because the households did not report income.

The total number of trips and nonmotorized trips for each purpose are shown in Table 6. The home-based school trip nonmotorized percentage is lower than the typical regional model would suggest, but the TRM includes all trips made to the school, such as adults visiting the schools, rather than solely the student trips. This could perhaps increase the motorized mode share, as adults are more likely to drive to the school.

Table 6. Percent Nonmotorized Trips by Trip Purpose

Purpose	Number of Nonmotorized Trips	Total Trips	Percent Nonmotorized of All Trips	
			Cleaned 2006 Data	1994 Data
Home-based work	162	4435	3.65%	2.79%
Home-based shopping	40	1,408	2.84%	4.68%
Home-based other	613	12,186	5.03%	9.09%
Home-based school	73	1,809	4.04%	7.74%
Nonhome-based	486	5,230	9.29%	13.12%
Total	1,374	25,068	5.48%	7.61%

The updated models were estimated using the SAS software package using the same procedure as the original model. This was done by preparing the estimation file, hypothesizing an equation for the utility of a trip being nonmotorized, applying the binary logit procedure in SAS and examining the results. This process was repeated until all possible variables were included in the utility equations that retained coefficients with logical signs and demonstrated a t-statistic of at least 1.96, which allows for a five percent error.

The modeling format was changed from the original TRM nonmotorized model to account for multiple factors. The original nonmotorized model was estimated without using the weights in the travel survey data, as they did not show much impact. The 2006 survey data weights did show an impact on the model estimation results, and were used for the final estimation process. To allow for ease of interpretation of the socioeconomic variables, they were redefined as shown in Table 5, separating the income and auto ownership variables.

Validation Standards

To validate the nonmotorized model, targets were developed using the total trip file (not cleaned for estimation purposes) of the Household Trip File, expanded to the entire population. These include the percentage of trips that are nonmotorized for each of the five trip types, home-based work, home-based shopping, home-based other, home-based school and nonhome-based trips. Table 7 enumerates the validation standards used for the nonmotorized model.

Table 7. Validation Standards for Each Trip Type

	HBW	HBSH	HBO	HBSC	NHB	Total
Nonmotorized Expanded Trips	13,969.3	9,146.4	54,004.5	10,423.0	173,149.9	260,693.2
Total Expanded Trips	533,171.3	189,176.4	455,783.8	317,362.5	2,876,355.7	4,371,849.7
Nonmotorized Share	2.62%	4.83%	11.85%	3.28%	6.02%	5.96%

Memorandum

TO: Felix Nwoko

FROM: Laura McWethy, Tom Rossi, John (Jay) Evans, P.E., AICP

DATE: September 18, 2007

RE: Phase 1 - Nonmotorized Model Estimation Results
Durham-Chapel Hill-Carrboro MPO Nonmotorized Model Development

This memo details the binary logit nonmotorized model currently used in the Triangle Regional Model (TRM) and the model estimation results for the revised nonmotorized model to be included in the TRM for the Durham-Chapel Hill-Carrboro (DCHC) Metropolitan Planning Organization (MPO) area.

Existing Nonmotorized Model

The existing nonmotorized model in the TRM uses the variables listed in Table 1.

Table 1. Descriptions of Existing Variables in the Nonmotorized Model

Variable	Description
Str1dum	No Car Indicator, 1 if Car = 0
Str2dum	Low Income Indicator, 1 if Inc ≤ 19,999
Str3dum	Med. Inc and Less Cars Indicator, 1 if 20,000 ≤ Inc ≤ 99,999 and Cars < Workers
Str4dum	Med. Inc and More Cars Indicator, 1 if 50,000 ≤ Inc ≤ 99,999 and Cars ≥ Workers
Str5dum	High Income Indicator, 1 if Inc ≥ 100,000
EmpDis	Employment Distance Accessibility Measure
PopDis	Population Distance Accessibility Measure
EPDis	Employment and Population Distance Accessibility Measure
Urban	High Density Indicator, 1 if Area Type = 1
Suburban	Medium Density Indicator, 1 if Area Type = 2
Rural	Low Density Indicator, 1 if Area Type = 3

The accessibility measures are calculated as follows:

$$A(i) = \sum_j \frac{S(j)}{T_{i,j}^2}$$

Where,

$A(i)$ = accessibility for zone i

$S(j)$ = a measure of activity in zone j (population, employment, or population plus employment)

$T_{i,j}$ = impedance separating zones i and j (highway distance, not including freeways)

The existing model formulations were re-estimated with the 2006 household survey data to compare the coefficients with the originals for each trip purpose – home-based work (HBW), home-based shopping (HBSH), home-based other (HBO), home-based school (HBSc), and nonhome-based (NHB). Both the original and re-estimated model coefficients are located in Table 2 to Table 6. The original models were estimated without using the survey weights, without an intercept, and have as their base: households in which the number of vehicles is greater than or equal to the number of workers in the household and a household income greater than or equal to \$20,000 and less than \$50,000. This format also was used for the re-estimated models, with one exception. The income strata in the 2006 Household Survey data breaks at \$25,000 instead of \$20,000, so this break was used in re-estimating the models.

The existing models could not be duplicated by re-estimating with the 2006 household survey data, as the tables show. For the most part, the coefficient signs were retained, with a few exceptions, including the Str1dum for HBW and HBO; the urban indicator for all HBW and HBSH; employment and population accessibility for HBO, HBSc, and NHB; and the employment accessibility for HBW. The differences arise primarily from the format of most variables being indicators, which allows the coefficients to vary greatly with populations that change slightly.

Table 2. Existing Nonmotorized Model for Home-Based Work Trips

Variable	Existing Model		Re-Estimated Model	
	Coefficient	t-stat	Coefficient	t-stat
Str1dum	-2.758	-8.5	1.655	3.9
Str2dum	-3.546	-12.1	-2.197	-8.0
Str3dum	-3.716	-12.4	-1.788	-6.2
Str4dum	-5.11	-21.4	-2.886	-20.5
Str5dum	-5.251	-17.2	-3.021	-18.5
Urban	1.261	5.1	-1.045	-8.9
EmpDis	2.48E-05	3.7	-2.07E-06	-2.2

Table 3. Existing Nonmotorized Model for Home-Based Shopping Trips

Variable	Existing Model		Re-Estimated Model	
	Coefficient	t-stat	Coefficient	t-stat
Str1dum	-1.017	-3.9	-0.144	-0.2
Str2dum	-2.979	-11.2	-1.355	-4.0
Str3dum	-3.652	-7.7	-0.088	-0.2
Str4dum	-4.57	-19.9	-3.223	-10.4
Str5dum	-4.869	-14.7	-4.665	-6.6
Urban	1.056	4.6	-1.660	-8.2

Table 4. Existing Nonmotorized Model for Home-Based Other Trips

Variable	Existing Model		Re-Estimated Model	
	Coefficient	t-stat	Coefficient	t-stat
Str1dum	-0.4956	-2.8	1.655	8.7
Str2dum	-2.088	-13	-1.623	-12.3
Str3dum	-3.579	-8.4	-1.376	-7.5
Str4dum	-2.655	-29.2	-2.294	-30.1
Str5dum	-3.062	-19.7	-2.453	-29.0
EPDis	7.97E-06	3.1	-2.00E-05	-21.6

Table 5. Existing Nonmotorized Model for Home-Based School Trips

Variable	Existing Model		Re-Estimated Model	
	Coefficient	t-stat	Coefficient	t-stat
Str1dum	-2.991	-8.2	-0.007	0.0
Str2dum	-4.223	-8.4	-1.448	-4.2
Str3dum	-3.263	-10	-1.316	-2.8
Str4dum	-3.757	-18.4	-2.589	-10.5
Str5dum	-3.571	-14.9	-2.678	-12.1
Urban	1.249	5.4	0.809	3.1
EPDis	1.22E-05	2.7	-3.00E-05	-8.0

Table 6. Existing Nonmotorized Model for Nonhome-Based Trips

Variable	Existing Model		Re-Estimated Model	
	Coefficient	t-stat	Coefficient	t-stat
St1 or Str2dum	-1.121	-10.1	-1.659	-10.3
Str3dum	-1.592	-8.3	-1.323	-6.2
Str4dum	-2.562	-31.5	-2.271	-26.6
Str5dum	-2.905	-24.4	-2.492	-26.6
EPDis	1.21E-05	5.3	-2.04E-06	-3.4
Urban	0.2006	1.9	0.172	2.0

Estimation Procedure

The nonmotorized model is a disaggregate binary choice model separated into five trip purposes, including home-based work, home-based shopping, home-based other, home-based school, and nonhome-based. The estimation file for the nonmotorized model was created from the 2006 Greater Triangle Travel Study Household Travel Survey, as detailed in the model development memo. Table 7 details the total and nonmotorized trips for each purpose for both the 2006 and the 1994 data. The home-based school trip nonmotorized percentage is lower than the typical regional model would suggest, but the TRM includes all trips made to schools, such as adults visiting, rather than solely the student trips. This could perhaps increase the motorized mode share, as adults are more likely to drive to the school.

Table 7. Percent Nonmotorized Trips by Trip Purpose

Purpose	Number of		Percent Nonmotorized of All Trips	
	Nonmotorized Trips	Total Trips	Cleaned 2006 Data	1994 Data
Home-based work	162	4,435	3.65%	2.79%
Home-based shopping	40	1408	2.84%	4.68%
Home-based other	613	12,186	5.03%	9.09%
Home-based school	73	1,809	4.04%	7.74%
Nonhome-based	486	5,230	9.29%	13.12%
Total	1,374	25,068	5.48%	7.61%

The updated models were estimated using the SAS software package, using the same procedure as the original model. The estimation criteria for retaining variables in the utility equations were a t-statistic of at least 1.96, which allows for a five percent error, and a logical explanation of the variable's impact on the utility of a nonmotorized trip.

The modeling format was changed from the original TRM nonmotorized model to account for multiple factors. The original nonmotorized models were estimated without intercepts, forcing the utility formulas through zero. This causes problems when comparing the impacts of variables, as the variables themselves have to incorporate the natural propensity towards motorized travel. This was overcome by adding an intercept into the new models. Also, the original nonmotorized models were estimated without using the weights in the travel survey data, as they did not show much impact. The 2006 survey data weights did show an impact on the model estimation results, and were used for the final estimation process. A final change made to the model formulation was a redefinition of the socioeconomic variables (income and vehicle ownership) to allow for ease of interpretation. Instead of having five variables representing both income and vehicle ownership, which could be combined in multiple ways, the new model has four income variables and three vehicle ownership variables, as shown in Table 8. The new base socioeconomic values are a low-income household (income<25,000), and owning no vehicles.

Table 8. Descriptions of Variables Used in the New Nonmotorized Model

Variable	Description
Inc1	Low Income Indicator, Inc<25,000 (Base)
Inc2	Low-Med Income Indicator, 25,000<=Inc<=49,999
Inc3	Med-High Income Indicator, 50,000<=Inc<=99,999
Inc4	High Income Indicator, Inc=>100,000
Inc234	Not Low Income Indicator, Inc=>25,000
NoVeh	No Vehicles in the household (Base)
LessVeh	Less vehicles than workers in the household, with at least one vehicle, Cars<Workers
MoreVeh	At least or more vehicles than workers in the household, Cars >=Workers
PChild	Presence of children in the household
EmpDis	Employment Distance Accessibility Measure
PopDis	Population Distance Accessibility Measure
Urban	High Density Indicator
Suburb	Medium Density Indicator
LUMix	Land Use Mix = ((2*(People+Jobs)-abs(People-Jobs))/acre
AveBlock	Average Street Block Perimeter in Zone

To ensure that each socioeconomic variable is adequately represented in the individual models, the share for each variable for the various trip purposes was examined in Table 9 and deemed adequate.

Table 9. Socioeconomic Variable Values by Trip Purpose

	Inc1	Inc2	Inc3	Inc4	NoVeh	LessVeh	MoreVeh	PChild
HBW	5.48%	17.20%	41.76%	35.56%	1.06%	4.96%	93.98%	40.83%
HBSH	10.16%	17.97%	40.98%	30.89%	2.91%	3.48%	93.61%	42.76%
HBO	8.32%	17.77%	39.33%	34.58%	2.09%	3.61%	95.36%	49.37%
HBSc	8.24%	13.82%	34.44%	43.50%	2.71%	4.04%	94.14%	91.65%
NHB	6.23%	16.94%	39.62%	37.21%	0.86%	4.19%	95.28%	44.30%
Total Trips	7.48%	17.22%	39.56%	35.74%	1.74%	3.99%	95.04%	49.48%
Population	13.39%	22.50%	34.95%	23.58%	3.60%	2.94%	93.46%	30.81%

Table 10 summarizes the statistics of the variables used in the model estimation. The variables were summed over the survey households for the socioeconomic variables and the over the TRM TAZs for the TAZ-level variables. No abnormalities were found in the data summary.

Table 10. Model Variables Summary Statistics

Variable	Average	Minimum	Maximum	St. Dev.
HHVEH	2.006	0	8	1.020
INCOM	5.081	1	9	2.021
HHWRK	1.320	0	7	0.835
Inc1	0.134	0	1	0.341
Inc2	0.225	0	1	0.418
Inc3	0.350	0	1	0.477
Inc4	0.236	0	1	0.425
NoVeh	0.036	0	1	0.186
LessVeh	0.029	0	1	0.500
MoreVeh	0.935	0	1	0.500
St1dum	0.036	0	1	0.186
St2dum	0.134	0	1	0.341
Str3dum	0.285	0	1	0.451
Str4dum	0.179	0	1	0.383
Str5dum	0.236	0	1	0.425
PChild	0.308	0	1	0.462
Urban	0.283	0	1	0.4505
Suburb	0.442	0	1	0.4967
Rural	0.275	0	1	0.4466
POP	513.030	0	8,755	661.13
Emp	289.263	0	8,940	670.99
LUMix	10.699	0	650.239	35.34
EmpDis	19,737.351	368.359	449,365.8	35,307.68
PopDis	21,911.329	716.580	421,550.6	21,640.55
AveBlock	3,011.945	182.88	49,871.71	3,886.64

Estimation Results

Table 11 to Table 15 show the detailed model specifications, including coefficients and t-statistics.

Home-Based Work Trips (HBW)

The final model formulation for home-based work trips is shown in Table 11. As with all of the trip purposes, the negative intercept is expected, as it indicates a propensity towards motorized trips. The negative coefficient on the high-income indicator also is expected, as high-income households tend to make more motorized trips. The less vehicles than workers and more vehicles than workers both indicate a higher likelihood of motorized travel relative to the base of no household vehicles, with the more vehicles variable being more negative. The positive urban variable coefficient indicates a higher propensity in urban areas to nonmotorized trips, which is the expected result with higher density areas. The employment accessibility index coefficient is positive, indicating the more employment close to the trip origin zone the more likely it will be a nonmotorized trip, as expected for the HBW trip purpose. The population accessibility index coefficient has the opposite sign, as the more population around the origin zone, the more likely the individual resides in a residential area, indicating that the place of work will be farther away, requiring a motorized trip. The average block perimeter of the zone also has the expected effect, as it decreases the probability of the trip being nonmotorized as the perimeter increases.

Table 11. Nonmotorized Model for Home-Based Work Trips

Parameter	Estimate	Standard Error	t-stat	Pr > ChiSq
Intercept	-1.0888	0.376	-2.90	0.0038
Inc4	-0.4644	0.199	-2.34	0.0195
LessVeh	-1.0605	0.328	-3.24	0.0012
MoreVeh	-1.8645	0.271	-6.87	<.0001
Urban	0.6337	0.222	2.86	0.0043
EmpDis	3.48E-06	0.000	4.00	<.0001
PopDis	-1.00E-05	0.000	-2.02	0.0064
AveBlock	-3.80E-04	0.000	-4.32	<.0001

Home-Based Shopping Trips (HBSH)

The final model formulation for home-based shopping trips is shown in Table 12. The variable coefficients all behave as expected, as described for the HBW trip purpose model.

Table 12. Nonmotorized Model for Home-Based Shopping Trips

Parameter	Estimate	Standard Error	t-stat	Pr > ChiSq
Intercept	-0.0952	0.3291	-0.29	0.7723
Inc2	-1.3209	0.428	-3.09	0.002
Inc3	-0.8446	0.3439	-2.46	0.0141
Inc4	-3.496	1.0244	-3.41	0.0006
MoreVeh	-1.3848	0.3213	-4.31	<.0001
AveBlock	-0.00066	0.000179	-3.69	0.0002

Home-Based Other Trips (HBO)

The final model formulation for home-based other trips is shown in Table 13. The variable coefficients behave as expected, similarly to the HBW model. In addition to the variables of the HBW model, the presence of children in the home has a positive impact on the probability of a trip being nonmotorized. This could be due to children making trips to visit friends, etc., which are included in the HBO trip purpose.

Table 13. Nonmotorized Model for Home-Based Other Trips

Parameter	Estimate	Standard Error	t-stat	Pr > ChiSq
Intercept	-1.6016	0.1736	-9.23	<.0001
Inc2	-0.3219	0.1204	-2.67	0.0075
Inc3	-0.4469	0.1158	-3.86	0.0001
Inc4	-0.7137	0.1279	-5.58	<.0001
LessVeh	-0.6312	0.1849	-3.41	0.0006
MoreVeh	-1.0844	0.1541	-7.04	<.0001
PChild	0.2879	0.0798	3.61	0.0003
Urban	0.7598	0.0849	8.95	<.0001
AveBlock	-0.00015	0.000033	-4.55	<.0001

Home-Based School Trips (HBSc)

The final model formulation for home-based school trips is shown in Table 14. The variable coefficients behave as expected, as described in the above models. In addition to the descriptions above, the land use mix variable has a positive coefficient, indicating that the denser and more balanced zones (population versus employment), have a positive impact on

the likelihood of a trip being nonmotorized. This is expected, as schools are more likely to be located near residences in balanced, urban zones, which allows for more nonmotorized travel to the school.

Table 14. Nonmotorized Model for Home-Based School Trips

Parameter	Estimate	Standard Error	t-stat	Pr > ChiSq
Intercept	-2.317	0.3128	-7.41	<.0001
MoreVeh	-1.098	0.2734	-4.02	<.0001
Urban	0.9329	0.2721	3.43	0.0006
LUMix	0.00337	0.000865	3.90	<.0001
EmpDis	6.50E-06	2.89E-06	2.24	0.0248
PopDis	-0.00003	8.44E-06	-3.55	0.0029

Nonhome-Based Trips (NHB)

The final model formulation for nonhome-based trips is shown in Table 15. The NHB trip purpose has the highest mode share of nonmotorized trips, indicated by the smaller negative impacts of the variables relative to the other models. With the exception of the smaller magnitudes, all of the variables maintain the same signs as previously described in the other models.

Table 15. Nonmotorized Model for Nonhome-Based Trips

Parameter	Estimate	Standard Error	t-stat	Pr > ChiSq
Intercept	-1.1188	0.2296	-4.87	<.0001
Inc234	-0.3907	0.1627	-2.40	0.0163
MoreVeh	-0.6362	0.1592	-4.00	<.0001
PChild	-0.2485	0.1047	-2.37	0.0176
Urban	0.6572	0.1282	5.13	<.0001
LUMix	0.00203	0.000635	3.20	0.0014
EmpDis	0.00001	9.23E-07	10.84	<.0001
PopDis	-0.00002	2.58E-06	-7.74	<.0001
AveBlock	-0.00034	0.000057	-5.96	<.0001



CITY OF DURHAM, DURHAM COUNTY, AND DURHAM-CHAPEL HILL-CARRBORO METROPOLITAN PLANNING ORGANIZATION:

DRAFT GREENHOUSE GAS EMISSIONS INVENTORY, FORECAST & TARGET

DURHAM'S COMMITMENT TO CLIMATE PROTECTION

In 1996, the City of Durham joined the Cities for Climate Protection (CCP) and committed to achieving quantifiable reductions in local greenhouse gas emissions, improved air quality, and enhanced urban livability and sustainability. In the United States, over 160 municipalities have joined the CCP. Together, these communities are home to 55 million Americans and are reducing greenhouse gases by 23 million tons per year, equivalent to the emissions produced annually by four million passenger vehicles.

In 1999, the City of Durham completed a greenhouse gas inventory and action plan as part of the CCP. This new inventory is a follow up to that document. By joining the City in the development of this inventory and local action plan, Durham County and the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) have indicated their desire to take a leadership role in climate change mitigation and air quality improvement within the community.

Apart from Durham's responsibility to reduce its contribution to global climate change, there are numerous other benefits of reducing emissions in the region. Some of these benefits include, but are not limited to, increased

efficiency for local government operations, improved air quality and public health - leading to a better quality of life for all citizens, reduced energy costs which will in turn lead to the community becoming less vulnerable to the market price of energy, and job creation within new fields as well as construction.

In 2005, ICLEI Energy Services (the consulting division of ICLEI – Local Governments for Sustainability) was

retained by Durham to help develop a greenhouse gas (GHG) and criteria air pollutant (CAP) inventory and action plan and set a reduction target for the community and local governments of Durham. Using the CCP Framework and Protocol, ICLEI worked in collaboration with City and County staff and a community Advisory Committee to develop the inventory and action plan using 2005 as the baseline year and 2030 as a target year. In addition, a public

forum was held in June 2007 and public input was solicited through a survey. The targets for GHG emissions reductions proposed for the City and County of Durham as a result of this process include a **30%** reduction from 2005 emissions levels by 2030 for the community and a **50%** reduction from 2005 emissions levels for local government operations.



This is the Executive Summary of the Draft Durham Greenhouse Gas and Criteria Air Pollutant Emissions Inventory and Local Action Plan for Emission Reductions. The full report is available online at www.durhamnc.gov/ghg. Approval of the plan by the Durham City Council and Board of County Commissioners is expected in fall 2007.

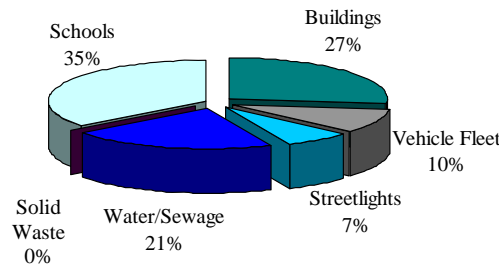
LOCAL GOVERNMENT INVENTORY, FORECAST & TARGET

Local government operations for the City of Durham and Durham County resulted in the production of approximately **158,710** tons of greenhouse gases in 2005. This accounts for approximately **2.5%** of the community's total emissions. Figure 1 illustrates the relative contribution of each sector of Durham's local government operations (including buildings, fleets, water and sewage treatment, streetlights and solid waste) to the total local government emissions profile. Durham requested that this inventory also include emissions from Durham Public Schools buildings and fleets. These emissions have been included in the schools sector.

A business-as-usual (BAU) emissions forecast scenario was developed for local government operations for the target year 2030. It was estimated that by 2030, if energy use and waste production continue to follow existing patterns, local government operations would result in approximately **205,146** tons of GHG, or a **29%** increase from the baseline year emissions.

Information was then gathered about energy efficiency and emission reduction measures that have been implemented or are planned for future implementation by the City and County. Historic measures (before 2005) have resulted in a reduction of approximately **5,630** tons of GHGs emissions annually

Figure 1. 2005 Local Government GHG Emissions

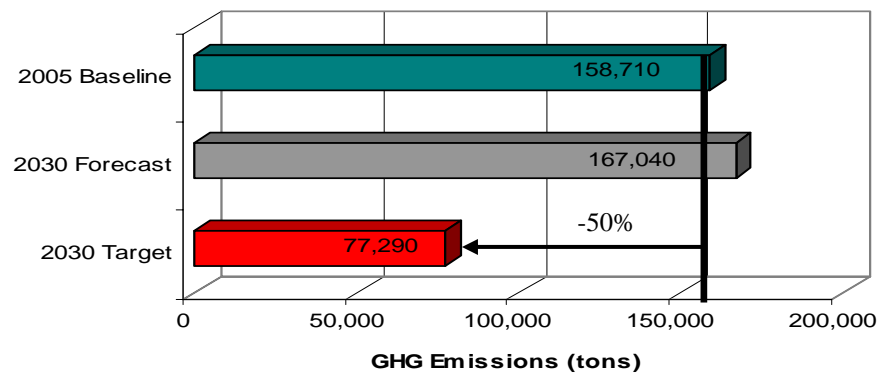


and annual energy costs savings of approximately **\$510,380**. Measures that Durham has planned to undertake in the future will result in an annual reduction of approximately **38,110** tons of GHG and **\$3,566,310** annually in energy cost savings. These reductions and savings have been through measures such as retrofitting buildings, a County green building policy, a police bike fleet, education and awareness programs and public school energy efficiency initiatives. The "2030 Forecast" scenario in Figure 2 takes into account the business-as-usual scenario and the future planned measures to provide

a more realistic estimate of where emissions are likely to be by 2030. In the forecast scenario, local government GHG emissions will be **167,040** tons in 2030, which is a **5%** increase from the 2005 baseline year emissions.

ICLEI, City and County staff and the Advisory Committee then collaborated to identify new measures that could be implemented before the target year 2030. Low, medium and high target scenarios were developed to illustrate the levels of emissions reduction that could be achievable given different levels of commitment on the part of the City and County. The low scenario predicted a **38%** reduction in emissions, the medium, a **51%** reduction and the high scenario a **72%** reduction in emissions by 2030. The Advisory Committee has decided to recommend that the City and County adopt a **50%** reduction in local government emissions by 2030.

Figure 2. Local Government GHG Emissions, Forecast, and Target



Recommended Actions for Local Government Emission Reductions

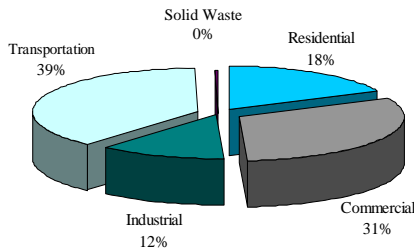
In the Local Action Plan, the Advisory Committee and ICLEI have made many recommendations for ways in which the local governments of Durham can reduce emissions in each sector of operations. Some examples include:

- Expanded energy efficiency improvements in the buildings of both the City, County, and Durham Public Schools and implementing a green building policy for all new construction and major renovations.
- New efficiency improvements in both the City and County's water and sewage operations including treatment processes, pumps, motors, etc.
- Considering offsetting emissions from buildings, streetlights and water & sewage operations by purchasing green electricity or green tags.

COMMUNITY INVENTORY, FORECAST & TARGET

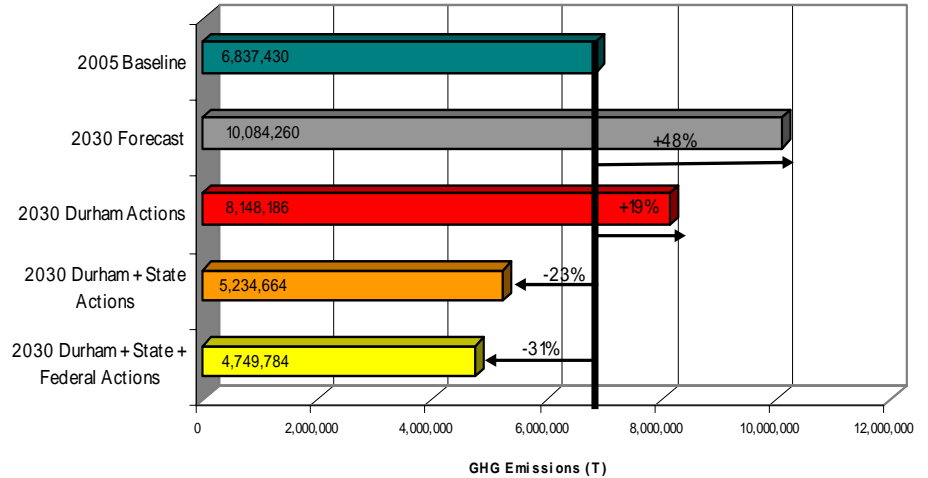
The community inventory provides an estimate of all of the greenhouse gas and criteria air pollutant emissions produced within Durham County, both by residents in their homes and by local businesses and agencies as they carried out their operations in the 2005 baseline year. In 2005, Durham produced approximately **6,837,430** tons of GHGs. Figure 3 illustrates the contribution of each sector to Durham’s community emissions profile. Transportation is the largest single sector, however if the residential, commercial, and industrial sectors are combined, it is clear that buildings are the most significant source of GHG emissions in the community.

Figure 3. 2005 Community GHG Emissions



A business-as-usual (BAU) emissions forecast scenario was developed for the community for the target year 2030 using socio-economic growth factors to help determine what level of emissions reduction could be achieved. It was estimated that by 2030, if energy use and waste production continue to follow existing patterns, the community would produce approximately **10,237,010** tons of

Figure 4. Community GHG Emissions, Forecast, and Target



GHG in that year, equivalent to a **50%** increase from 2005 emissions.

Working with the Advisory Committee, ICLEI analyzed some of the emissions reduction measures already in place in the community as well as those planned for future implementation. Historic measures have resulted in approximately **152,280** tons of savings and planned measures will result in approximately **152,750** tons of emissions savings. The “2030 Planned” scenario was then developed by combining these emission reduction estimates with the BAU forecast. In the planned scenario, Durham’s emissions in 2030 will be approximately **10,084,260** tons of GHG; a **47%** increase from 2005 levels.

As was done with the local government sector, potential new measures were identified and high, me-

dium and low emissions reduction scenarios were developed based on different levels of commitment on the part of the local governments. Given the scale of growth anticipated in the County and the amount of time between Durham’s selected baseline and target years, it will not be possible for local governments of Durham to reduce emissions below baseline levels by 2030 on their own. The high scenario results in a **19%** increase in emissions from baseline levels by 2030, the medium scenario results in a **33%** increase and the low scenario results in a **41%** increase. The Advisory Committee has recommended that the City and County adopt the high target, which when combined with the impact of potential state and federal actions will result in a **30%** reduction in emissions from 2005 levels by 2030. Figure 4 illustrates the cumulative impact of local government, state and federal emissions mitigation strategies.

Recommended Actions for Community Emission Reductions

In the Local Action Plan, the Advisory Committee and ICLEI have made many recommendations for ways in which the local governments of Durham can reduce emissions in each community sector. Some examples include:

- Expand energy conservation measures in the commercial, residential and industrial sectors in both existing and new construction through education and awareness campaigns, partnerships, energy audits and design standards.
- Expand and enforce land use planning strategies to avoid transportation emissions related to new development through controlling urban sprawl and encouraging active transportation and transit use.
- Promote the use of alternative vehicles and fuels in the transportation sector.

IMPLEMENTATION — NEXT STEPS

The completion of the *Durham Greenhouse Gas Emissions Inventory and Local Action* report qualifies Durham for recognition of Milestones 1 and 3 in the Cities for Climate Protection Framework. The next step is for the Durham City Council, the Durham County Board of Commissioners, and the DCHC MPO to formally adopt the local government and community targets in order to achieve Milestone 2.

The Local Action Plan section of the report highlights many areas in which emissions reductions could be wrought in both the community and local government sectors. As the level of government closest to their citizens, the City and County have a unique ability to influence the community. The local governments have a major role to play in encouraging the public to reduce emissions through education and incentives. The governments of Durham can also help to coordinate the efforts of local businesses and non-profit groups in the community. Land use and transportation planners have a significant influence on the shape that a community will take and their decisions can impact not only the emissions profile of Durham, but can also help to make Durham a more socially, environmentally and economically sustainable community. In terms of the local governments' own operations, energy efficiency initiatives will result in financial savings which can be redirected into other community programming.

The development of an inventory and local action plan are major steps toward achieving GHG emissions mitigation; however, unless the plan is implemented, it will not be successful. The CCP Campaign divides these two steps into Milestones 3 and 4. Milestone 4 involves the implementation of the action plan. In order for the action plan to be successful, programs and efforts need to be coordinated across departments and between the two local governments and the DCHC MPO.

The Advisory Committee recommends that the City and County jointly fund a sustainability coordinator staff position to fulfill this role and ensure that progress is being made towards the targets. The sustainability coordinator would organize the work of City and County departments, monitor progress, update the inventory and provide regular plan updates to the City Council and County Commissioners (Milestone 5: Measuring Progress and Reporting Results). This person will ensure that the experiences, successes and failures of both governments are shared with one another. The sustainability coordinator would also pursue grants and funding and would coordinate community outreach and educational programs and work with citizens in identifying and pursuing new incentive programs, regulations, and policies to implement the plan. Timelines should also be developed to guide the implementation of the local action plan over the next 25 years.

CITIES FOR CLIMATE PROTECTION (CCP) PROTOCOL AND ACHIEVING THE MILESTONES

The City of Durham has committed to following the five milestone framework of the CCP program. These milestones are:

- **Milestone One:** Create a GHG Emissions Inventory and Forecast
- **Milestone Two:** Set a Reduction Target
- **Milestone Three:** Develop a Local Action Plan
- **Milestone Four:** Implement the Local Action Plan
- **Milestone Five:** Measure Progress and Report Results

The final plan will be presented for adoption by the Durham City Council and the Durham Board of County Commissioners on September 19, 2007. Adoption by the DCHC MPO is expected in at a later date.

For more information please visit:

www.durhamnc.gov/ghg

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This executive summary brochure was created for the City and County of Durham and the DCHC MPO by ICLEI Energy Services. For more information please contact icleicanada@iclei.org. This is a summary of a full document for the City and County of Durham and the DCHC MPO

The Municipality, when procuring architectural, professional and engineering services, must adhere to Title 23 of the Code of Federal Regulations (CFR), Part 172. The Municipality shall comply with the policies and standards for negotiated contracts as contained in the Federal-Aid Policy Guide, Part 172; said policies and standards being incorporated in this Agreement by reference, and currently available at <http://www.fhwa.dot.gov/legsregs/directives/fapgtoc.htm>.

Electronic Code of Federal Regulations (e-CFR)

e-CFR Data is current as of May 21, 2007

Title 23: Highways

[Browse Previous](#) | [Browse Next](#)

PART 172—ADMINISTRATION OF ENGINEERING AND DESIGN RELATED SERVICE CONTRACTS

Section Contents

[§ 172.1 Purpose and applicability.](#)

[§ 172.3 Definitions.](#)

[§ 172.5 Methods of procurement.](#)

[§ 172.7 Audits.](#)

[§ 172.9 Approvals.](#)

Authority: 23 U.S.C. 112, 114(a), 302, 315, and 402; 40 U.S.C. 541 *et seq.*; sec.1205(a), Pub. L. 105–178, 112 Stat. 107 (1998); sec. 307, Pub. L. 104–59, 109 Stat. 568 (1995); sec. 1060, Pub. L. 102–240, 105 Stat. 1914, 2003 (1991); 48 CFR 12 and 31; 49 CFR 1.48(b) and 18.

Source: 67 FR 40155, June 12, 2002, unless otherwise noted.

§ 172.1 Purpose and applicability.

[↑ top](#)

This part prescribes policies and procedures for the administration of engineering and design related service contracts under 23 U.S.C. 112 as supplemented by the common grant rule, 49 CFR part 18. It is not the intent of this part to release the grantee from the requirements of the common grant rule. The policies and

procedures involve federally funded contracts for engineering and design related services for projects subject to the provisions of 23 U.S.C. 112(a) and are issued to ensure that a qualified consultant is obtained through an equitable selection process, that prescribed work is properly accomplished in a timely manner, and at fair and reasonable cost. Recipients of Federal funds shall ensure that their subrecipients comply with this part.

§ 172.3 Definitions.

[↑ top](#)

As used in this part:

Audit means a review to test the contractor's compliance with the requirements of the cost principles contained in 48 CFR part 31.

Cognizant agency means any Federal or State agency that has conducted and issued an audit report of the consultant's indirect cost rate that has been developed in accordance with the requirements of the cost principles contained in 48 CFR part 31.

Competitive negotiation means any form of negotiation that utilizes the following:

- (1) Qualifications-based procedures complying with title IX of the Federal Property and Administrative Services Act of 1949 (Public Law 92-582, 86 Stat. 1278 (1972));
- (2) Equivalent State qualifications-based procedures; or
- (3) A formal procedure permitted by State statute that was enacted into State law prior to the enactment of Public Law 105-178 (TEA-21) on June 9, 1998.

Consultant means the individual or firm providing engineering and design related services as a party to the contract.

Contracting agencies means State Departments of Transportation (State DOTs) or local governmental agencies that are responsible for the procurement of engineering and design related services.

Engineering and design related services means program management, construction management, feasibility studies, preliminary engineering, design, engineering, surveying, mapping, or architectural related services with respect to a construction project subject to 23 U.S.C. 112(a).

One-year applicable accounting period means the annual accounting period for which financial statements are regularly prepared for the consultant.

§ 172.5 Methods of procurement.

[↑ top](#)

(a) *Procurement*. The procurement of Federal-aid highway contracts for engineering and design related services shall be evaluated and ranked by the contracting agency using one of the following procedures:

- (1) *Competitive negotiation*. Contracting agencies shall use competitive negotiation for the procurement of engineering and design related services when Federal-aid highway funds are involved in the contract. These contracts shall use qualifications-based selection procedures in the same manner as a contract for architectural and engineering services is negotiated under title IX of the Federal Property and Administrative Services Act of 1949 (40 U.S.C. 541-544) or equivalent State qualifications-based requirements. The proposal solicitation (project, task, or service) process shall be by public announcement, advertisement, or

any other method that assures qualified in-State and out-of-State consultants are given a fair opportunity to be considered for award of the contract. Price shall not be used as a factor in the analysis and selection phase. Alternatively, a formal procedure adopted by State Statute enacted into law prior to June 9, 1998 is also permitted under paragraph (a)(4) of this section.

(2) *Small purchases.* Small purchase procedures are those relatively simple and informal procurement methods where an adequate number of qualified sources are reviewed and the total contract costs do not exceed the simplified acquisition threshold fixed in 41 U.S.C. 403(11). Contract requirements should not be broken down into smaller components merely to permit the use of small purchase requirements. States and subrecipients of States may use the State's small purchase procedures for the procurement of engineering and design related services provided the total contract costs do not exceed the simplified acquisition threshold fixed in 41 U.S.C. 403(11).

(3) *Noncompetitive negotiation.* Noncompetitive negotiation may be used to procure engineering and design related services on Federal-aid participating contracts when it is not feasible to award the contract using competitive negotiation, equivalent State qualifications-based procedures, or small purchase procedures. Contracting agencies shall submit justification and receive approval from the FHWA before using this form of contracting. Circumstances under which a contract may be awarded by noncompetitive negotiation are limited to the following:

- (i) The service is available only from a single source;
- (ii) There is an emergency which will not permit the time necessary to conduct competitive negotiations; or
- (iii) After solicitation of a number of sources, competition is determined to be inadequate.

(4) *State statutory procedures.* Contracting agencies may procure engineering and design related services using an alternate selection procedure established in State statute enacted into law before June 9, 1998.

(b) *Disadvantaged Business Enterprise (DBE) program.* The contracting agency shall give consideration to DBE consultants in the procurement of engineering and design related service contracts subject to 23 U.S.C. 112(b)(2) in accordance with 49 CFR part 26.

(c) *Compensation.* The cost plus a percentage of cost and percentage of construction cost methods of compensation shall not be used.

§ 172.7 Audits.

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(a) *Performance of audits.* When State procedures call for audits of contracts or subcontracts for engineering design services, the audit shall be performed to test compliance with the requirements of the cost principles contained in 48 CFR part 31. Other procedures may be used if permitted by State statutes that were enacted into law prior to June 9, 1998.

(b) *Audits for indirect cost rate.* Contracting agencies shall use the indirect cost rate established by a cognizant agency audit for the cost principles contained in 48 CFR part 31 for the consultant, if such rates are not under dispute. A lower indirect cost rate may be used if submitted by the consultant firm, however the consultant's offer of a lower indirect cost rate shall not be a condition of contract award. The contracting agencies shall apply these indirect cost rates for the purposes of contract estimation, negotiation, administration, reporting, and contract payment and the indirect cost rates shall not be limited by any administrative or de facto ceilings. The consultant's indirect cost rates for its one-year applicable accounting period shall be applied to the contract, however once an indirect cost rate is established for a contract it may be extended beyond the one year applicable accounting period provided all concerned parties agree. Agreement to the extension of the one-year applicable period shall not be a condition of contract award. Other procedures may be used if permitted by State statutes that were enacted into law prior to June 9, 1998.

(c) *Disputed audits.* If the indirect cost rate(s) as established by the cognizant audit in paragraph (b) of this section are in dispute, the parties of any proposed new contract must negotiate a provisional indirect cost rate or perform an independent audit to establish a rate for the specific contract. Only the consultant and the parties involved in performing the indirect cost audit may dispute the established indirect cost rate. If an error is discovered in the established indirect cost rate, the rate may be disputed by any prospective user.

(d) *Prenotification; confidentiality of data.* The FHWA and recipients and subrecipients of Federal-aid highway funds may share the audit information in complying with the State or subrecipient's acceptance of a consultant's overhead rates pursuant to 23 U.S.C. 112 and this part provided that the consultant is given notice of each use and transfer. Audit information shall not be provided to other consultants or any other government agency not sharing the cost data, or to any firm or government agency for purposes other than complying with the State or subrecipient's acceptance of a consultant's overhead rates pursuant to 23 U.S.C. 112 and this part without the written permission of the affected consultants. If prohibited by law, such cost and rate data shall not be disclosed under any circumstance, however should a release be required by law or court order, such release shall make note of the confidential nature of the data.

§ 172.9 Approvals.

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(a) *Written procedures.* The contracting agency shall prepare written procedures for each method of procurement it proposes to utilize. These written procedures and all revisions shall be approved by the FHWA for recipients of federal funds. Recipients shall approve the written procedures and all revisions for their subrecipients. These procedures shall, as appropriate to the particular method of procurement, cover the following steps:

- (1) In preparing a scope of work, evaluation factors and cost estimate for selecting a consultant;
- (2) In soliciting proposals from prospective consultants;
- (3) In the evaluation of proposals and the ranking/selection of a consultant;
- (4) In negotiation of the reimbursement to be paid to the selected consultant;
- (5) In monitoring the consultant's work and in preparing a consultant's performance evaluation when completed; and
- (6) In determining the extent to which the consultant, who is responsible for the professional quality, technical accuracy, and coordination of services, may be reasonably liable for costs resulting from errors or deficiencies in design furnished under its contract.

(b) *Contracts.* Contracts and contract settlements involving design services for projects that have not been delegated to the State under 23 U.S.C. 106(c), that do not fall under the small purchase procedures in §172.5(a)(2), shall be subject to the prior approval by FHWA, unless an alternate approval procedure has been approved by FHWA.

(c) *Major projects.* Any contract, revision of a contract or settlement of a contract for design services for a project that is expected to fall under 23 U.S.C. 106(h) shall be submitted to the FHWA for approval.

(d) *Consultant services in management roles.* When Federal-aid highway funds participate in the contract, the contracting agency shall receive approval from the FHWA before hiring a consultant to act in a management role for the contracting agency.

MEMORANDUM

To: Transportation Advisory Committee (TAC)
DCHC MPO

From: DCHC MPO Lead Planning Agency

Date: September 12, 2007

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

This memorandum provides a summary status of tasks for projects in the FY 2007-2008 Unified Planning Work Program.

- ✓ Indicates that task is complete.
- Indicates that task is ongoing or not complete.

2007-08 Unified Planning Work Program (UPWP) – Projects

Long Range Transportation Plan (LRTP) / Comprehensive Transportation Plan (CTP) Update

- ✓ Draft schedule – August 2006
- ✓ Release SE Data for public comment – January 2007
- ✓ Release Goals and Objectives for public comment – July 2007
- TAC approve SE Data – September 2007
- Goals and Objectives – TAC hold public hearing, September 2007, and approve, October 2007.
- TAC review Deficiency Analysis – October 2007.

Travel Time Survey/Speed Study

- ✓ Consultant has been selected for the survey.
- ✓ Scoping and contract negotiations completed.
- ✓ Field reconnaissance and data collection – in progress.
- Survey in progress

GIS/Data Integration and Automation

- ✓ Issue RFQ – September 11, 2006
- ✓ Non-mandatory pre-proposal conference – September 25, 2006
- ✓ Receive written proposals – October 15, 2006
- ✓ Consultant short list by October 23-27, 2006
- ✓ Consultant short list interviews/references check and city issues Notice of Intent to Award a Contract by October 30-November 13, 2006
- Contract negotiation and scoping in progress
- Council approves contract – August 13, 2007

- City issues contract
- Notice to proceed

Land-use Model development

- ✓ Issue RFQ – August 7, 2006
- ✓ Pre-proposal conference – August 29, 2006
- ✓ Receive written proposals – September 8, 2006
- ✓ Consultant short list – September 13-22, 2006
- ✓ Consultant short list interviews/references check and City issues notice of intent to award a contract – September 25-29, 2006
- ✓ Contract negotiation and scoping completed
- ✓ Council approves contract March 5, 2007
- ✓ City issues contract – March 25, 2007
- ✓ Notice to proceed – March 25, 2007
- Study underway –completion December 2008

Non-Motorized Model development

- ✓ Issue RFQ – August 21, 2006
- ✓ Non-mandatory pre-proposal conference – September 6, 2006
- ✓ Receive written proposals – September 21, 2006
- ✓ Consultant short list – September 25-29, 2006
- ✓ Consultant short list interviews/references check and City issues notice of intent to award a contract – October 2-6, 2006
- ✓ Contract negotiation and scoping completed
- ✓ Council approves contract – March 5, 2007
- ✓ City issues contract – March 25, 2007
- ✓ Notice to proceed – March 25, 2007
- Study underway –completion December 2008

ITS Deployment Plan

- Two Triangle regional stakeholder coordination meetings held.
- ✓ Update of ITS short range strategies for the 2007-2013 TIP.
- Update of 2007-2010 ITS project – December 2006
- Update of the deployment plan including development of measures of effectiveness, IDAS, Turbo Architecture.
- Request for funding from NCDOT
- Draft scope of services and Request for Proposals.
- Consultants selection in fall of 2007
- Notice to proceed in January 2008
- Completion of Project expected in Fall of 2008.

Farrington Road/Stagecoach Road Corridor Study

- This study would involve the following tasks:
 1. Data collection and analysis
 2. Traffic circulation plan (including a collector street system plan)
 3. Sub-area modeling analysis and forecast of future demand

4. Alternative evaluation
 5. Recommendation
- Kimley Horn and Associates is the consultant
 - Data collection underway
 - Steering Committee proposed
 - Completion of study expected in January
 - Integration in the 2035 LRTP

MPO Collector Street Plan

- ✓ Supplemental Agreement with Kimley Horn and Associates
- ✓ Data collection underway
- ✓ Completion of study and integration with the 2035 LRTP in Spring 2008

Regional Transit Infrastructure Blueprint

- ✓ Establish and convene sponsors and partners teams, agree on detailed task list, responsibilities, products, begin infrastructure and corridor descriptions; begin investment principles - summer 2006
- ✓ Finish corridor and infrastructure descriptions; finalize principles fall 2006
- ✓ Begin land use, travel and cost analysis - winter 2006
- ✓ Finish land use, travel, cost analysis - spring 2007
- Conclude work, issue Blueprint, implement tracking mechanism - summer 2007

Chapel Hill/Carrboro/UNC Long Range Transit Plan

Unified Planning Work Program (UPWP) – Continuing Projects

Greenhouse Gas (GHG) Emission Inventory and Action Plan

- ✓ Execute contract and give consultant Notice-to-Proceed – March 2006 (delayed due to contract issues)
- ✓ Formation of Technical Committee finalized in February 2006.
- ✓ Formation of stakeholder committee (Advisory Committee) finalized in February 2006.
- ✓ Kick off meeting for the study held March 23, 2006
- ✓ Establish Project Team List serve in February 2006
- ✓ Base Year data Collection and Information Gathering to be completed in March-August 2006 (Durham – complete; Orange – in progress).
- ✓ Data Analysis and Projection likely to be completed in (Durham - August 2006; Orange - ?).
- ✓ Determine and quantify historic and existing measures likely to be completed in July-August 2006.
- ✓ Identify new measures to be completed in August 2006.
- ✓ Criteria Air Pollutant (CAP) Analysis anticipated to be completed in September 2006.

- ✓ Identify GHG target and model reduction targets anticipated to be completed in February-March 2006.
- ✓ Formulate Action Plan anticipated to be completed in March 2007.
- ✓ Recommend reduction targets, strategies and action plan anticipated to be done by March 2007.
- ✓ Draft Plan finalized in June 2007.
- ✓ Durham Public Forum - June 21, 2007
- Plan Adoption anticipated occurring during fall 2007. Durham City and Durham County expected on September 19, 2007.
- The Orange County plan has been delayed several months beyond the Durham County plan.

Congestion Management System (CMS)/Mobility Report Card

- ✓ Consultants selected for the study.
- ✓ Data collection for the Mobility Report Card underway
- ✓ Data Collection for the Durham study about 80% complete.
- Data Collection and field inventory to be completed by fall 2007.
- Level of Service analysis anticipated to be completed by fall 2007.
- Development of CMS performance measures and guidelines likely to be completed in fall 2007.
- Evaluation of congestion management strategies and development of cost-effective mitigation measures expected to be done by fall 2007.
- Draft CMS State of System Report likely to be done in fall 2007.
- Public Comment and local review in fall 2007.
- Adoption anticipated in winter 2008.

Travel Demand Model Update – Model Revision to Incorporate FTA New Start Enhancement

- ✓ Consultant has been selected to assist the Triangle Regional Model (TRM) Service Bureau at ITRE in the model update.
- ✓ Data collection is complete.
- ✓ Migration of model from Tranplan to TransCad has been completed.
- ✓ Phase I (TTA new start model revision) completed in October 2005.
- ✓ Phase II TTA New Start model conversion to TransCad to be completed in August 2006.
- Calibration of 2002 model in TransCad anticipated to be completed in fall 2007.
- Validation of 2002 model against 2005 count data anticipated to be completed in fall 2007.

Unified Planning Work Program (UPWP) – Routine and Other Special Projects

MPO Environmental Justice (EJ) and Limited English Proficiency (LEP) Plan Integration

- Mandated by federal regulations
- Draft plan to be prepared in 2007.

Update of the MPO Public Involvement Policy Consistent with SAFETEA-LU

- ✓ Draft to be ready for fall of 2007.
- ✓ Adopted anticipated in Spring of 2008

MPO Expansion for the next LRTP Update

- ✓ Initiated dialogue with Person County, Granville County, Butner, Roxboro and Pittsboro – July 2006
- ✓ Met with governing bodies of these jurisdictions – September 2006
- MPO expansion and revision of MOU expected to be completed as part of the 2035 LRTP update.

Public Outreach for the East End Connector Planning and Environmental Study

- ✓ LPA working on the Public Involvement and Outreach Program for the East End Connector Planning and Environmental Study (NEPA).
- ✓ Development of mailing list database complete.
- ✓ Received project schedule and time line from NCDOT.
- ✓ Newsletter distributed May 2006
- ✓ Speakers Bureau presentations June 2006 – ongoing
- ✓ First public meeting September 26, 2006
- ✓ Second public meeting – January 30, 2007
- ✓ Alternative 3 selected as LEDPA – June 19, 2007
- ✓ Ad Hoc Committee Meetings – August 9, 2007, August 27, 2007, September 19, 2007

NCDOT PROJECTS UNDER CONSTRUCTION IN DURHAM COUNTY - 9/1/2007

County	TIP #	Route	Location Description	Contract Amount	Length	Contractor Name	Resident Engineer	RE Ph. #	Contract Completion	Scheduled Progress	Actual Progress	Estimated Completion
Durham, Wake	R-2906A/C	NC-55	WIDENING OF NC-55 FROM NORTH OF US-64 IN WAKE COUNTY TO CORNWALLIS RD.	\$ 34,668,947.33	11.634 miles	Blythe Development Co	Phillip R. Johnson, PE, PLS	(919) 678-0444	06/01/2006	100%	97.1%	10/1/2007
Durham	I-306C	I-85	WIDENING OF I-85 FROM EAST OF COLE MILL RD TO WEST OF BROAD STREET.	\$ 66,628,382.65	3.416 km	Granite Construction Company	Aaron V. Earwood, PE	(919) 220-4680	12/31/2006	100%	98.9%	10/1/2007
Durham	I-306DB	I-85	WIDENING OF I-85 FROM WEST OF BROAD STREET TO WEST OF CAMDEN AVE.	\$ 73,297,064.77	4.093 km	Granite Construction Company	Aaron V. Earwood, PE	(919) 560-6857	12/31/2004	100%	100%	10/1/2007
Durham	U-2055C/H/I	GARRETT ROAD	WIDENING GARRETT RD AT INTERSECTIONS OF TROTTER RIDGE, COLORADO, SWARTHMORE	\$ 743,997.00		Triangle Grading and Paving	Aaron V. Earwood, PE	(919) 220-4680	6/30/2007	100%	100.0%	COMPLETE
Durham, Wake	R-2000AB/AC	I-540	CONSTRUCTION OF I-540 FROM RESEARCH TRIANGLE PARK EAST LIMITS TO I-40.	\$ 68,368,301.43	5.346 km	The Lane Construction Corp.	Phillip R. Johnson, PE, PLS	(919) 733-9499	08/01/2007	100%	96.6%	10/1/2007
DURHAM	I-3306BB	I-40	I-40 FROM ORANGE COUNTY LINE TO NC-147, MILL AND FILL DESIGN BUILD	\$ 21,749,430.00	10.401 miles	The Lane Construction Corp.	Phillip R. Johnson, PE, PLS	(919) 733-9499	5/10/2008	61.6%	71.6%	5/10/2008
DURHAM / WAKE	U-4026A/B 2904	R DAVIS DRIVE / NC-54	WIDENING OF DAVIS DRIVE FROM MORRISVILLE-CARPENTER ROAD TO NC 54, WIDENING OF NC-54 FROM DAVIS DRIVE TO MIAMI BLVD	\$ 35,467,891.08	6.363 miles	C C Mangum Company LLC	Phillip R. Johnson, PE, PLS	(919) 733-9499	11/1/2009	16.3%	20.1%	11/1/2009
DURHAM	RESURFACING	SECONDARY	21 SECTIONS OF SECONDARY ROADS	\$ 2,795,584.75	18.9 miles	Barnhill Contracting	Bob Shultes	(919) 840-0914	9/1/2007	37.0%	59.8%	9/15/2007
DURHAM	RESURFACING	PRIMARY	NC-54 FROM FALCONBRIDGE ROAD TO DRESDEN DRIVE	\$ 318,281.20	1.45 miles	Barnhill Contracting	Aaron V. Earwood, PE	(919) 220-4680	8/30/2007	90.0%	80.0%	9/10/2007
DURHAM	RESURFACING	PRIMARY	5 SECTIONS OF US-15/501, 1 SECTION OF US-15/501 BYPASS, AND 1 SECTION OF NC-55 SB	\$ 920,361.66	5.16 miles	REA CONTRACTING LLC	Bob Shultes	(919) 840-0914	9/20/2007	16.7%	29.0%	9/20/2007
DURHAM	U-4010	NC 98	WIDENING OF NC 98 (HOLLOWAY ST) FROM EAST OF US 70 TO EAST OF JUNCTION ROAD	\$ 3,288,207.30	0.369 miles	Triangle Grading and Paving	Bob Shultes	(919) 840-0914	6/15/2008			
DURHAM	U-4410DB	HOPSON ROAD	NEW ALIGNMENT OF HOPSON ROAD FROM NC-55 TO LOUIS STEPHENS DRIVE	\$ 3,800,000.00	0.587 miles	NOT YET AWARDED	Phillip R. Johnson, PE, PLS	(919) 733-9499				
DURHAM	B-3450 / U-4009 / U-4012	GARRETT ROAD	TWO BRIDGES ON GARRETT RD; SERVICE ROAD NEAR US 15-501 AND GARRETT RD INTERSECTION; US 15-501 FROM NORTH MT. MORIAH RD SOUTH OF GARRETT RD	\$ 20,300,000.00	1.769 miles	NOT YET AWARDED	Aaron V. Earwood, PE	(919) 220-4680				

NCDOT PROJECTS FOR LET NEXT 12 MONTHS IN DURHAM COUNTY - 9/1/2007

County	TIP #	Route	Location Description	Contract Estimate	Length	Contact Engineer	Phone #	Contract Let Date
DURHAM	B-3169	RIVERMONT ROAD	BRIDGE 158 ON RIVERMONT ROAD	\$ 550,000.00	0.067 miles	J. MOORE	(919) 250-4016	1/15/2008
DURHAM	B-4109	PICKETT ROAD	BRIDGE OVER MUD CREEK	\$ 850,000.00	0.078 miles	D. TAYLOR	(919) 250-4016	5/20/2008

12 MONTH TENTATIVE LET LIST MAY BE FOUND ONLINE AT: <http://www.ncdot.org/planning/development/ProjectMgmt/12month/>

PROGRESS REPORTS MAY BE FOUND ONLINE AT: <https://apps.dot.state.nc.us/traffictravel/progloc/>

ACTIVE NCDOT PROJECTS LOCATED IN ORANGE COUNTY - DCHC WFO TC 09/07 Attachment 14

Orange	US-3925 31914	NC 86 @ Rosemary St.	Upgrade signal heads, install a protected/permitted left turn phase for NC 86 and install 2 metal strain poles REVISION: Mast arm to be used in lieu of metal strain poles	\$85,000.00	Rev. Compl. 10/31/07
Orange	U-4008 35009.3.2	US 15-501 & SR1734 (Erwin Rd.)	Grading, drainage, paving and intersection improvements (Super Street)	\$4.98 million	Const. underway for completion 10/31/07
Orange	36945	SR 1010 (Franklin St.) @ Mallette St.	Upgrade traffic signal and install pedestrian signal heads REVISION: Install mast arm	\$110,000.00	Rev. compl. 12/31/07
Orange	37708	SR 1733 (Weaver Dairy Rd.) @ Sedgefield Dr.	Construct left turn lane	\$150,000.00	100% complete
Orange	40553	SR 1777 (Homestead Rd.)	Widening for sidewalks and bikeways from SR 1834 (High School Road) to SR 1729 (Rogers Road) and a turn lane at SR 1834	\$650,000.00	Barrett, Irvin & Jordan- 100% complete
Orange	SF-4907 B 41699.1	US 70 (Hillsborough Rd.) and NC 751 near Durham	Install a right turn lane for traffic travelling east on US 70 and turning right onto NC 751	\$35,000 PE	Survey requested
Orange	SF-4907 C 41698.1	NC 57 @ NC157 near Hillsborough	Install center traffic islands with stop signs on NC 157	\$7,000 PE	Survey requested
Orange	SS-4907E 41026.3	NC 54 @ SR 1952 (White Cross Road)	Construct a left turn lane	\$173,000.00	Request for quotes pending
Orange	SS-4907 I 41395.3.1	NC86 @ SR 1332 (Coleman Loop)	Construct a left turn lane (Southern end)	\$100,000.00	FA const.= 85% complete
Orange	SS-4907 J 41634.3	NC 54 and SR 1945 (Neville Rd.)	Construct a left turn lane	\$187,000.00	Survey pending
Orange	41096	NC 54 @ SR 2016 (Southern Drive)	Construct a left turn lane on NC 54 westbound	\$140,000.00	Request for quotes pending additional funding
Orange	41488	US 15-501 @ SR 1900 (Old Mason Farm Road)	Extend the left turn lane on northbound US 15-501, revise the signal and add a right turn lane at SR 1900	\$147,500.00	District design pending
Orange	41593	Union Street	Construct 750 feet of sidewalk and a crosswalk to connect Hillsborough Elementary School to SR 1156 (Nash St.)	\$32,000.00	Town to construct by Encroachment Agreement w/ PE certification

ACTIVE NCDOT PROJECTS LOCATED IN ORANGE COUNTY - DCHC WFO TC 01/20/07 Attachment 14

Orange	41594	SR 1010 (W. Main St.) @ NC 54	Install pedestrian signal heads and crosswalk markings	\$40,000.00	FA const. pending for timing revisions, crosswalk & wheelchair ramps
Orange	41686	NC 54 @ SR 1102/1951 (Dodson's Crossroads/ Butler Rd.)	Construct left turn lanes in both directions	\$250,000.00	Survey pending
Orange	7CR.10681.5	Varied	Resurface 3 sections of US 15-501; 7 sections of NC 54; 1 section of NC 751 and 8 sections of secondary roads	\$2.74 million	S.T. Wooten Corp.= 100 % compl.; Final est. underway
Orange	7. 2068... SF-4907A 40740.1	SR 1567 (Pleasant Green Rd.) @ SR 1569 (Cole Mill Rd.)	Improve sight distance	\$25,000.00	Completed 8/17/07
Orange	SI-4807 40249.3.1	SR 1548 (Schley Rd.) @ SR 1538 (New Sharon Church Rd.)	Install center islands with stop signs on SR 1538	\$60,000.00	Const. pending; Utility relocation underway
NCDOT PROJECTS CURRENTLY IN 12 MONTH LETTING LIST					
County	TIP #	Route	Location Description	TIP Est.	Est. Let Date
Orange	I-4716	I-40	Grind and reseal joints on I-40 from I-85 to Durham Co.	\$1.5 million	Jan. 15, 2008; GeoTech to core slabs & grout slabs 9/19-9/20/07
Orange	B-4218	SR 1730 (Turkey Farm Rd.)	Replace Bridge # 108 over New Hope Creek	\$675,000.00	July 15,2008

Transportation funding solutions go nowhere this year in N.C.

By GARY D. ROBERTSON, Associated Press Writer
August 5, 2007 10:09 pm

RALEIGH, N.C. -- For all the boasting among Democrats about how much the General Assembly accomplished this year, the issue discussed most in the session's final days was something for which they had nothing to show.

Lawmakers went home without finding a way to cover the estimated shortfall in North Carolina's transportation spending needs, projected to reach \$65 billion over the next two decades by the Department of Transportation.

An argument can even be made that lawmakers made the situation worse by capping the gasoline tax for another two years, costing the state an estimated \$140 million in revenues, and failing to set aside the seed money needed to start work on the state's first toll road. Meanwhile, the cost of road-building materials continues to soar.

"Drivers in our state should be angry with the lack of action on transportation," said Beau Mills with NC GO!, a coalition of local governments and road-building trade groups. "We all know we are falling behind, yet the Legislature chose to do nothing."

The inactivity, along with the deadly collapse of an interstate bridge in Minnesota last week, has many talking about holding a special session on transportation issues. The high price tag of a fix, combined with the Legislature's recent wrangling over taxes, suggests getting lawmakers to return to Raleigh will be the easy part.

Should they come back to Raleigh, a solution isn't obvious. But some lawmakers think finding an answer to transportation woes is possible.

"I'm optimistic that it will happen," said Sen. Clark Jenkins, D-Edgecombe, chairman of the Senate transportation appropriations subcommittee. But he was quick to add that without "buy-in from both chambers, both parties, I just don't think we can even attempt to do it."

When the just completed session began in January, local governments -- including big cities that pay for road improvements within their boundaries -- pleaded with legislators for additional revenue sources for infrastructure.

But Gov. Mike Easley's budget proposal, released in late February, contained no method to cover the funding shortfall, in part so a commission reviewing North Carolina's tax structure could meet and make recommendations.

A commission subcommittee recommended raising the existing 3 percent tax paid on automobile sales, and giving local governments the option to tax land transfers to help pay for road construction. But the full commission declined to back specific tax changes to help pay for transportation needs.

Meanwhile, automobile dealers mobilized to oppose boosting the sales tax, and talk of a transportation bond package never amounted to much. The Legislature ultimately focused on county Medicaid costs, along with school construction and other infrastructure needs.

"We didn't have any consensus to make a big push on transportation funding in this session," said House Speaker Joe Hackney, D-Orange. "We had plenty of other things on our plate."

It's also a politically dangerous topic. Raising the sales tax on vehicles to 4 percent would raise \$200 million annually, but is sure to be widely unpopular. Lawmakers could boost motor vehicle fees, but they were raised across the board in 2005.

"It's a huge issue, but that (special) session ... should only occur if we are prepared to do so and if there is a bipartisan effort in that regard," said Senate leader Marc Basnight, D-Dare.

Hackney said he and Basnight have spoken with Easley's office about having another high-level panel examine transportation funding issues before the Legislature reconvenes as scheduled next year.

"The governor has said we still need to do something more for transportation in North Carolina," Easley spokeswoman Renee Hoffman said. "Rising highway construction costs mean we are going to have to look at different ways to fund our highway needs."

GOP leaders also want to know more before deciding on the wisdom of a special session. In the minority in both the House and Senate, Republicans failed to get Democrats to stop transferring \$172 million annually from the Highway Trust Fund to its general fund -- the budget only promised to begin a phaseout in mid-2009. They also blame Democrats for not taking advantage of the \$1.5 billion in revenue the state unexpectedly collected in the past year.

Given the extra revenues, "I just don't think the public would be prepared for additional taxes and additional fees," said Senate Republican Leader Phil Berger, R-Rockingham.

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Support for turnpike may slip, backers say

Regional rivalries could get ingrained

Jim Nesbitt, Staff Writer

RALEIGH - Proponents of a turnpike through western and southern Wake County fear the support they've forged may melt in the heat of rekindled cross-county jealousy now that the \$850 million project has been stalled.

In the aftermath of the legislature's failure two weeks ago to put up a \$20 million-a-year stake in the Triangle Expressway, political leaders along the proposed toll road's route say their constituents feel severely slighted.

"I've said before: It's a north-south issue," Holly Springs Mayor Dick Sears said. "It's characterized as the rich people of North Raleigh got what they wanted and don't care about us -- and that's just a shame that perception's out there."

The focus of this reignited taxpayer ire is the notion of paying twice to extend the Interstate 540 Outer Loop through their rapidly growing territory, said Sears and other small-town mayors who have supported the turnpike.

There's also jealousy about northern Wake residents enjoying a toll-free Outer Loop paid for the old-fashioned way -- with tax dollars. While residents in booming western and southern Wake have to slog along traffic-clogged roads such as U.S. 1 or N.C. 55, the mayors say, people living along the I-540 corridor can whisk along a new four-lane that now arcs north and east from Research Triangle Park to the U.S. 64 Bypass near Knightdale.

"Across the board, supporters and opponents of the toll road feel like it's been a slap in the face," Garner Mayor Ronnie Williams said.

The 18.9-mile project could be delayed up to two years and cost an estimated \$80 million more as a result of higher asphalt, concrete, steel and land prices.

A \$20 million-a-year stake from the state would have allowed the N.C. Turnpike Authority to float construction bonds on the Wake project and hit a 2010 deadline for opening the first phase of the toll road. Without the state money, turnpike officials have said they'll consider a public-private partnership to build the road.

In the face of this uncertainty, developers and real-estate brokers say traffic congestion in western and southern Wake will worsen as growth along the turnpike corridor continues to explode. But some fear a prolonged delay will slow the pace of new projects.

"It will delay some of the development, but it won't stop it," said Phillip Dickens, a broker with Raleigh Realty who has several small parcels of land for sale near Holly Springs. "It'll be slower than it would have been because of the congestion that's there already."

To overcome initial resentment about the turnpike, small-town mayors sold the project as a choice between a toll road and no road at all. Their pitch was simple: Pay to drive on a toll road that, in four or five years, could ease traffic congestion, or wait another two decades for state transportation officials to decide whether the project is a top priority.

This lesser-of-two-evils argument seemed effective when the legislature appeared poised to pump money into the project. Now, though, turnpike opponents say it's time to reconsider using tolls to build the road.

"I think we're back at square one in determining how we're going to build the western and southern route of the Outer Loop," said Apex Mayor Keith Weatherly, who cast the sole dissenting vote in May when the turnpike was approved by the Capital Area Metropolitan Planning Organization. "I think we need to go back and consider all options."

Toll road foes

Apex resident Russ Catania, a semiretired mainframe computer operator, hates the notion of a turnpike about half a mile from his home. That's partly because he spent 31 years living in New Jersey, a mecca for turnpikes.

"You can't even go get a loaf of bread without paying a toll," he said. "I hate toll roads."

Catania said he thinks North Carolina officials are pushing toll roads to avoid reforming the inequities of the system North Carolina uses to collect and distribute money for new highways. That strikes a chord with Wake County Commissioner Joe Bryan, who said the system is outdated and can't keep pace with North Carolina's voracious need for new roads.

In Wake County alone, road planners estimate there will be \$6 billion in unmet transportation needs in the next 25 years, said Bryan -- a reflection of an estimated \$65 billion gap statewide between revenue and new road and maintenance needs.

Bryan, the former Knightdale mayor who is also chairman of the Capital Area Metropolitan Planning Organization, favors calling a special session of the legislature to revamp a highway revenue system last revised in 1989. He also favors a summit on transportation reform -- high-level talks among Gov. Mike Easley, legislative leaders, local officials and transportation experts.

Roads money

Legislators also need to stop the flow of about \$170 million a year from the highway trust fund designed to pay for new roads into the state's general fund, Bryan said. Other transportation experts say legislators need to consider scrapping or retooling the "intrastate fund," established with the promise of putting a four-lane within 10 miles of every citizen when North Carolina was more of a rural state.

Even if such reforms are made, North Carolina's growth will still outstrip the money available for new roads and maintenance, said Bryan.

For example, it took 19 years for the U.S. 64 Bypass project to turn from blueprints to asphalt, Bryan said. To build new roads faster, the state needs to leverage highway money, placing a down payment on turnpike projects that primarily rely on tolls to pay off their construction bonds.

"Clearly, congestion and getting stuck in stop-and-go traffic is going to get worse unless we start finding a way to pay for new roads now," Bryan said. "People expect us to come up with solutions for this problem."

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Private money may aid toll road

Turnpike Authority looks to bridge gap

Bruce Sicheloff, Staff Writer

RALEIGH - Now that the General Assembly has balked at plugging the gap, the state Turnpike Authority will consider borrowing money from a private lender to cover an expected shortfall in toll revenues for the planned Triangle Expressway.

"It's not much more than doing a second mortgage," David W. Joyner, the turnpike agency's executive director, said Wednesday.

Local government and business groups across the state are urging legislative leaders and Gov. Mike Easley to convene a special session of the General Assembly this fall to come up with new money for state road improvements.

If legislators do return to Raleigh, they are expected to consider making annual payments to cover the expected gaps between toll collections and project costs for a handful of planned toll roads.

House and Senate leaders supported different ways of paying for turnpike revenue gaps, but the legislature adjourned this summer without taking action.

The turnpike board urged the legislature Wednesday to approve gap funding for its toll projects. Although it endorsed public funding, the board also agreed to explore private funding options for the Triangle toll project only.

Joyner said the 18.9-mile, \$850 million Triangle Expressway through Research Triangle Park and western Wake County could start construction on schedule next year, opening for traffic by 2011, if public or private gap money is assured in the next several months.

He said the turnpike agency will not consider a partnership with a private company and will not lease or give control of the Triangle Expressway to a private company. Some lenders have indicated interest in discussing terms that would keep the turnpike under full public control, he said.

The turnpike board will evaluate its options for public and private money for the Triangle project at its November meeting.

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Road 'pie' held not big enough

By Ray Gronberg, The Herald-Sun
August 15, 2007 9:55 pm

DURHAM -- Durham officials say that unless the state supplies more money for roads, transit and other transportation infrastructure, they might be forced to clamp down on the area's growth.

The saber rattling occurred this week after city Transportation Manager Mark Ahrendsen briefed elected officials on the widening shortfall that appears likely to dog the western Triangle's transportation program during the next 23 years.

Ahrendsen said that unless the state acts, the region is at least \$700 million short of being able to fund the \$6.1 billion in road and transit improvements it needs by 2030.

"The problem is the pie's just not big enough, even if you cut it up differently," Ahrendsen told elected officials who serve on the Joint City/County Committee. "The funds just aren't there, and aren't projected to get any better."

His assessment -- which included a comment that there are questions about whether the area "can sustain the growth we're projecting" -- prompted warnings from County Commissioner Chairwoman Ellen Reckhow and other officials.

"We may have to consider, if we don't have the resources for infrastructure, whether we begin to look at our other policies," Reckhow said, naming land-use and business incentives as two areas that might receive fresh scrutiny.

City Councilman Eugene Brown said state and federal leaders have neglected a mounting problem.

"It was my parents and grandparents who built this transportation system," he said. "Now we're turning our back on that investment. That's absolutely a public sin."

Those comments, and others like them, came as senior legislators and Gov. Mike Easley consider holding a special session of the General Assembly this winter to address the issue.

Legislators on both sides of the aisle, and outside observers like Chris Fitzsimon of N.C. Policy Watch, say it's possible state officials will propose a massive bond issue to finance roads and other transportation projects.

Whatever they come up with would be the state's first major transportation-funding initiative since the late 1980s, when former Gov. Jim Martin and legislators agreed to create the Highway Trust Fund.

The governors since -- Easley and former Gov. Jim Hunt -- have focused mostly on education policy and steered money there. Legislators went along, though lately they've pushed for additional spending on health care.

Republicans in the General Assembly say transportation just hasn't been a priority.

"The governor in his [February] State of the State address proposed not one extra dollar for transportation," said House Minority Leader Paul Stam, R-Wake. "Then the House passed its budget with not a dollar for transportation. Then the Senate passed its budget, with not a dollar for transportation extra. And now they say there's a big crisis."

The Easley administration did launch a study of the issue in 2005. But the committee involved, chaired by state Transportation Secretary Lyndo Tippet, quietly went out of business without generating a report.

"None of us were ever given much of an answer why," said Ellis Hankins, executive director of the N.C. League of Municipalities and a former member of Tippet's study committee.

Now, House Majority Leader Joe Hackney, D-Orange, Senate President Pro Tem Marc Basnight, D-Dare, and Easley supposedly are trying to work up a proposal.

It's not clear what exactly they might suggest, though talk of a bond issue abounds.

Hackney "wants what's best," said Bill Holmes, the speaker's press secretary. "And I don't know that he's reached a point where he has decided what that is yet."

Basnight's top lieutenant, Senate Majority Leader Tony Rand, D-Cumberland, said the key is figuring out whether the state has a revenue stream that can support the added debt payments for a bond.

Rand, Stam and Senate Minority Leader Phil Berger, R-Rockingham, all agreed a firm plan is a precondition for holding a special session.

Without it, legislators would only "haggle and fiddle and fight," Rand said.

Berger noted that the General Assembly's Republicans this spring proposed a \$1.25 billion transportation bond. They figured on paying for it by phasing out the annual transfer of \$172 million from the highway fund into other state programs.

The transfer -- also criticized by local officials like Ahrendsen -- is a legacy of the Martin-era compromise that produced the Highway Trust Fund. It kept the tax shuffles involved from affecting the rest of the state's budget.

But "what was a good idea in 1989 has not been a good idea for at least the last 10 years," Berger said.

Advocates like Fitzsimon, however, believe the rest of the budget still needs protection. They point to other potential revenue sources, including an increase of vehicle registration fees.

But "it certainly takes a bipartisan effort," Fitzsimon said. "For the most part, the people now fighting any increase in taxes or fees are Republicans, and the last time we addressed this, we had a Republican governor who was willing to raise taxes for a specific purpose."

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So much for "Thinking Ahead"

Tuesday, August 14th, 2007

The stage is being set behind the scenes for special legislative session on transportation. Governor Mike Easley and legislative leaders have been meeting to figure out how to build a consensus on how to raise new revenue for road improvements.

And unless something changes dramatically in the near future, roads are all that will be considered. There has been little talk of any other transportation solutions like mass transit or addressing the sprawling development in urban areas that increases the demand for highways and other services.

State leaders seem unwilling to have a real debate about a comprehensive transportation strategy and the roads only approach will demand billions more in state revenue in higher taxes or fees.

Earlier this year, the Department of Transportation announced that the state faces a \$65 billion highway funding shortfall in the next 25 years, a figure that Governor Easley called absurd. But a shortfall even half that size seems impossible to address.

The market fundamentalists are already peddling their anti-government alternative, advocating slashing the state's General Fund budget by hundreds of millions of dollars to pay for new highways. They just don't want to end the \$170 million transfer from the Highway Trust Fund to the General Fund, they want to take far more out of the operating budget of schools, human services and other state programs to pay for road construction.

Let's hope that approach is quickly dismissed by a commission Easley is likely to create to work on possible funding solutions. Easley and whoever he appoints ought to start their deliberations by looking at the work of the last group that was supposed to come up with solutions to our transportation woes. But looking at that work would require them to find it.

The group was called N.C. Thinking Ahead, an 11-member commission appointed in 2005 after Easley heard from urban mayors complaining about transportation problems. The group was created to develop a plan to address the transportation funding shortfall, complete with looking at revenue sources. It was important enough to be cited in a 2005 publication from Easley's office touting his accomplishments as Governor.

That report said that N.C. Thinking Ahead hosted eight forums across the state and conducted an online survey and that "Data from the regional forums and the poll will be incorporated into the group's final report." Reportedly, two outside consultants were hired to work with the project.

Minutes of a DOT committee meeting in November of 2005 show that a staff member predicted that all information from the regional meetings "will be summarized and reported to the task force by December 1, 2005."

Easley's DOT Secretary Lyndo Tippett hailed N.C. Thinking Ahead in speeches around the state that year, in March telling an audience in Charlotte that the group was working "to develop new ways to fund transportation improvements." A power point presentation by another DOT official at N.C. State said N.C. Thinking Ahead would study solutions to the revenue gap in the state's 25-year transportation plan.

Seems like all that would be valuable information now, as state officials are still trying to solve the same problem.

The regional meetings generated news coverage and press releases but the final report of N.C. Thinking Ahead is nowhere to be found. There's a reason for that. DOT Public Affairs Director Ernie Seneca says that while "the agency has moved forward with some of the information that was presented," no report was produced.

Seneca didn't respond directly to questions about how the public was supposed to read a report that doesn't exist or why Easley listed N.C. Thinking Ahead as a major accomplishment of his administration if there was nothing actually produced by the commission.

The Southern Pines Pilot included a quote from Easley in a July, 2005 story about N.C. Thinking Ahead. "Meeting transportation demands is a never-ending task," Easley said. "And we must continue to be creative and aggressive in our efforts to meet those demands."

Might also help to be aggressive in demanding that reports paid for by taxpayers are released to the public and don't just disappear into political thin air. There's a shortfall of more than just highway money in this Administration's transportation policy. There's some accountability missing too.

Now focus on roads

Aug 17, 2007 : 4:44 pm ET

When the talk turns to roads and transportation, the dollar figures that get kicked around can boggle the mind.

The East End Connector, a section of road linking the Durham Freeway to U.S. 70 and I-85, is expected to cost \$193 million.

Two proposed projects intended to smooth traffic coming into RTP -- an extension of the Freeway called the Triangle Parkway and the Western Wake Parkway, an extension of I-540 -- have a combined price tag of \$810 million.

Now planners in Durham are expressing concern about falling \$700 million short in state funding over the next 23 years. That's out of more than \$6 billion they figure we'll need in road and transportation improvements.

Indeed, roads are expensive. And although our modern conveyances of concrete and steel are crucial to contemporary life, they don't always work very well. Just take a drive on I-40 on a weekday around 5 p.m. to experience firsthand the stresses on our highways.

The state's lawmakers have recently, to their credit, focused much of their attention on education. But transportation has been an afterthought. Recognizing that a change in attitude is needed, state leaders like Speaker of the House Joe Hackney (D-Orange) , are kicking around the possibility of a transportation bond issue and a special legislative session to address the issues.

We agree that it may be time for bold proposals to insure the future viability of the state's roads and transportation. But we also agree with House Republicans who say that a firm plan should be on the table before a special session is called.

Such a plan will need to take population growth into consideration, along with the importance of reducing the number of cars on the road and the pollutants they spew. Any new transportation plan must be about more than new highways for automobiles. It must also call for dedicated bus lanes and HOV lanes, bike lanes and money for mass transit, including buses and rail. We also need to consider "out of the box" ways to pay for new pavement, such as toll roads and highways built by private contractors.

Planning for future growth will be expensive, but then again, so are new highways.

Easley: commission, not special session, to study transportation

By GARY D. ROBERTSON, Associated Press Writer
August 27, 2007 6:19 pm

RALEIGH, N.C. -- Gov. Mike Easley and legislative leaders agreed to meet this week to discuss ways to handle a projected \$65 billion funding shortfall in the state's transportation needs over the next two decades.

Easley, who believes the shortfall estimated by the Department of Transportation is overstated, will meet Tuesday with House Speaker Joe Hackney and Senate leader Marc Basnight about creating a special committee to examine the state's transportation needs and recommend changes.

The move indicates the state's three top Democratic elected leaders would prefer to address the problem without calling lawmakers back to Raleigh for a special legislative session in the near future.

"Any discussion of a special session is premature," Basnight spokesman Schorr Johnson said Monday. Easley and Hackney have made similar comments.

The General Assembly adjourned earlier this month without finding ways to narrow the shortfall. Lawmakers said they couldn't reach agreements on new revenue sources, working instead on phasing out Medicaid expenses for counties and giving them new tax options.

The Legislature isn't expected to reconvene until May, unless Easley orders lawmakers back for a special session. Lawmakers also could be forced back to work if three-fifths of House and Senate members ask to return.

Easley has said he wants a commission to examine what lawmakers could do next spring, or possibly earlier if there's broad agreement on a solution. Otherwise, a special session doesn't make sense, he said.

Hackney isn't necessarily opposed to a special session but wants guidelines in place outlining the needs and funding options before lawmakers reconvene, said his spokesman, Bill Holmes.

Raising taxes and fees or issuing more debt for road construction and expanding mass transit are often mentioned as possible solutions, but both could prove detrimental to Democrats in an election year without GOP support.

Republicans already have complained that Democrats failed to stop transferring \$172 million annually from the Highway Trust Fund to the state's general operating fund. The annual transfer began in the late 1980s as part of a deal to create the dedicate trust fund for urban loops and intrastate roads.

GOP lawmakers, and some Democrats, want those transfers to end.

A coalition of local governments and road-building trade groups that want a special session have said raising the tax on automobile sales from 3 percent to 5 percent would generate \$400 million more annually.

"The needs and the solutions are not new -- those have been on the table," said Beau Mills, chairman of NC Go!, an organization heading the coalition. "What we need now is action and leadership."

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Federal Register

**Wednesday,
July 11, 2007**

Part II

Environmental Protection Agency

40 CFR Part 50

**National Ambient Air Quality Standards
for Ozone; Proposed Rule**

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 50

[EPA-HQ-OAR-2005-0172; FRL-8331-5]

RIN 2060-AN24

National Ambient Air Quality Standards for Ozone

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: Based on its review of the air quality criteria for ozone (O₃) and related photochemical oxidants and national ambient air quality standards (NAAQS) for O₃, EPA proposes to make revisions to the primary and secondary NAAQS for O₃ to provide requisite protection of public health and welfare, respectively, and to make corresponding revisions in data handling conventions for O₃.

With regard to the primary standard for O₃, EPA proposes to revise the level of the 8-hour standard to a level within the range of 0.070 to 0.075 parts per million (ppm), to provide increased protection for children and other "at risk" populations against an array of O₃-related adverse health effects that range from decreased lung function and increased respiratory symptoms to serious indicators of respiratory morbidity including emergency department visits and hospital admissions for respiratory causes, and possibly cardiovascular-related morbidity as well as total nonaccidental and cardiopulmonary mortality. The EPA also proposes to specify the level of the primary standard to the nearest thousandth ppm. The EPA solicits comment on alternative levels down to 0.060 ppm and up to and including retaining the current 8-hour standard of 0.08 ppm (effectively 0.084 ppm using current data rounding conventions).

With regard to the secondary standard for O₃, EPA proposes to revise the current 8-hour standard with one of two options to provide increased protection against O₃-related adverse impacts on vegetation and forested ecosystems. One option is to replace the current standard with a cumulative, seasonal standard expressed as an index of the annual sum of weighted hourly concentrations, cumulated over 12 hours per day (8 a.m. to 8:00 p.m.) during the consecutive 3-month period within the O₃ season with the maximum index value, set at a level within the range of 7 to 21 ppm-hours. The other option is to make the secondary standard identical to the proposed primary 8-hour standard. The

EPA solicits comment on specifying a cumulative, seasonal standard in terms of a 3-year average of the annual sums of weighted hourly concentrations; on the range of alternative 8-hour standard levels for which comment is being solicited for the primary standard, including retaining the current secondary standard, which is identical to the current primary standard; and on an alternative approach to setting a cumulative, seasonal secondary standard(s).

DATES: Written comments on this proposed rule must be received by October 9, 2007.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2005-0172, by one of the following methods:

- *www.regulations.gov*: Follow the on-line instructions for submitting comments.
- *E-mail*: a-and-r-Docket@epa.gov.
- *Fax*: 202-566-1741.
- *Mail*: Docket No. EPA-HQ-OAR-2005-0172, Environmental Protection Agency, Mail code 6102T, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Please include a total of two copies.
- *Hand Delivery*: Docket No. EPA-HQ-OAR-2005-0172, Environmental Protection Agency, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA-HQ-OAR-2005-0172. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *www.regulations.gov*, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *www.regulations.gov* or e-mail. The *www.regulations.gov* Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through *www.regulations.gov*, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic

comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket, visit the EPA Docket Center homepage at <http://www.epa.gov/epahome/dockets.htm>.

Docket: All documents in the docket are listed in the *www.regulations.gov index*. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in *www.regulations.gov* or in hard copy at the Air and Radiation Docket and Information Center, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744 and the telephone number for the Air and Radiation Docket and Information Center is (202) 566-1742.

Public Hearings: The EPA intends to hold public hearings around the end of August to early September in several cities across the country, and will announce in a separate **Federal Register** notice the dates, times, and addresses of the public hearings on this proposed rule.

FOR FURTHER INFORMATION CONTACT: Dr. David J. McKee, Health and Environmental Impacts Division, Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Mail code C504-06, Research Triangle Park, NC 27711; telephone: 919-541-5288; fax: 919-541-0237; e-mail: mckee.dave@epa.gov.

SUPPLEMENTARY INFORMATION:

General Information

What Should I Consider as I Prepare My Comments for EPA?

1. *Submitting CBI.* Do not submit this information to EPA through *www.regulations.gov* or e-mail. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD ROM that

you mail to EPA, mark the outside of the disk or CD ROM as CBI and then identify electronically within the disk or CD ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

2. *Tips for Preparing Your Comments.* When submitting comments, remember to:

- Identify the rulemaking by docket number and other identifying information (subject heading, **Federal Register** date and page number).
- Follow directions—The Agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
- Explain why you agree or disagree, suggest alternatives, and substitute language for your requested changes.
- Describe any assumptions and provide any technical information and/or data that you used.
- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- Provide specific examples to illustrate your concerns, and suggest alternatives.
- Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
- Make sure to submit your comments by the comment period deadline identified.

Availability of Related Information

A number of documents relevant to this rulemaking are available on EPA Web sites. The Air Quality Criteria for Ozone and Related Photochemical Oxidants (Criteria Document) (two volumes, EPA/ and EPA/, date) is available on EPA's National Center for Environmental Assessment Web site. To obtain this document, go to <http://www.epa.gov/ncea>, and click on "Ozone." The Staff Paper, human exposure and health risk assessments, vegetation exposure and impact assessment, and other related technical documents are available on EPA's Office of Air Quality Planning and Standards (OAQPS) Technology Transfer Network (TTN) Web site. The Staff Paper is available at http://www.epa.gov/ttn/naaqs/standards/ozone/s_o3_cr_sp.html, and the exposure and

risk assessments and other related technical documents are available at http://www.epa.gov/ttn/naaqs/standards/ozone/s_o3_cr_td.html. EPA will be making available corrected versions of the final Staff Paper and human exposure and health risk assessment technical support documents on these same EPA Web sites on or around July 16, 2007. These and other related documents are also available for inspection and copying in the EPA docket identified above.

Table of Contents

The following topics are discussed in this preamble:

- I. Background
 - A. Legislative Requirements
 - B. Related Control Requirements
 - C. Review of Air Quality Criteria and Standards for O₃
- II. Rationale for Proposed Decision on the Primary Standard
 - A. Health Effects Information
 1. Mechanisms
 2. Nature of Effects
 3. Interpretation and Integration of the Health Evidence
 4. O₃-Related Impacts on Public Health
 - B. Human Exposure and Health Risk Assessments
 1. Exposure Analyses
 2. Quantitative Health Risk Assessment
 - C. Conclusions on the Adequacy of the Current Primary Standard
 1. Background
 2. Evidence- and Exposure/Risk-Based Considerations
 3. CASAC Views
 4. Administrator's Proposed Conclusions Concerning Adequacy of Current Standard
 - D. Conclusions on the Elements of the Primary Standard
 1. Indicator
 2. Averaging Time
 3. Form
 4. Level
 - E. Proposed Decision on the Primary Standard
- III. Communication of Public Health Information
- IV. Rationale for Proposed Decision on the Secondary Standard
 - A. Vegetation Effects Information
 1. Mechanisms Governing Plant Response to Ozone
 2. Nature of Effects
 3. Adversity of Effects
 - B. Biologically Relevant Exposure Indices
 - C. Vegetation Exposure and Impact Assessment
 1. Exposure Characterization
 2. Assessment of Risks to Vegetation
 - D. Conclusions on the Adequacy of the Current Standard
 1. Background
 2. Evidence- and Exposure/Risk-Based Considerations
 3. CASAC Views
 4. Administrator's Proposed Conclusions Concerning Adequacy of Current Standard

- E. Conclusions on the Elements of the Secondary Standard
 1. Indicator
 2. Cumulative, Seasonal Standard
 3. 8-Hour Average Standard
 - F. Proposed Decision on the Secondary Standard
 - V. Creation of Appendix P—Interpretation of the NAAQS for Ozone
 - A. Data Completeness
 - B. Data Handling and Rounding O₃ Conventions
 - VI. Ambient Monitoring Related to Proposed Revised Standards
 - VII. Statutory and Executive Order Reviews
- References

I. Background

A. Legislative Requirements

Two sections of the Clean Air Act (CAA) govern the establishment and revision of the NAAQS. Section 108 (42 U.S.C. 7408) directs the Administrator to identify and list "air pollutants" that "in his judgment, may reasonably be anticipated to endanger public health and welfare" and whose "presence * * * in the ambient air results from numerous or diverse mobile or stationary sources" and to issue air quality criteria for those that are listed. Air quality criteria are intended to "accurately reflect the latest scientific knowledge useful in indicating the kind and extent of identifiable effects on public health or welfare which may be expected from the presence of [a] pollutant in ambient air * * *."

Section 109 (42 U.S.C. 7409) directs the Administrator to propose and promulgate "primary" and "secondary" NAAQS for pollutants listed under section 108. Section 109(b)(1) defines a primary standard as one "the attainment and maintenance of which in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health."¹ A secondary standard, as defined in section 109(b)(2), must "specify a level of air quality the attainment and maintenance of which, in the judgment of the Administrator, based on such criteria, is requisite to protect the public welfare from any known or anticipated adverse effects associated with the presence of [the] pollutant in the ambient air."²

¹ The legislative history of section 109 indicates that a primary standard is to be set at "the maximum permissible ambient air level * * * which will protect the health of any [sensitive] group of the population," and that for this purpose "reference should be made to a representative sample of persons comprising the sensitive group rather than to a single person in such a group" [S. Rep. No. 91-1196, 91st Cong., 2d Sess. 10 (1970)].

² Welfare effects as defined in section 302(h) (42 U.S.C. 7602(h)) include, but are not limited to, "effects on soils, water, crops, vegetation, man-

Continued