BOARD OF ALDERMEN

ITEM NO.B(3)

AGENDA ITEM ABSTRACT

MEETING DATE: September 11, 2012

TITLE: 2040 Metropolitan Transportation Plan Alternatives Analysis

DEPARTMENT: Planning	PUBLIC HEARING: NO
ATTACHMENTS: **A.** 2040 MTP schedule (as of May 2012) **B.** 2040 MTP goals and objectives **C.** 2040 MTP dwelling unit and employment growth maps for Carrboro-Chapel Hill **D.** 2040 MTP 2040 congestion maps (E+C scenario) **E.** 2040 MTP excerpts from the draft Alternatives Analysis report	**FOR INFORMATION CONTACT:** Jeff Brubaker – 918-7329

PURPOSE

This agenda item presents an informational update on the 2040 Metropolitan Transportation Plan (formerly known as the 2040 Long Range Transportation Plan) being developed by the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC-MPO). It focuses on the current step in the process, which is the Alternatives Analysis, while summarizing previous steps.

INFORMATION

Background

The MPO is developing the 2040 Metropolitan Transportation Plan (MTP) to guide transportation investment in the western half of the Triangle over the next 30 years. Specifically, the DCHC-MPO area includes all of Durham County and the urbanized portions of Orange and Chatham Counties.

Consistent with federal requirements for a continuing, comprehensive, and cooperative (3-C) transportation planning process, each MPO in North Carolina and NCDOT must adopt long range transportation plans. The previous name of the MTP was the "Long Range Transportation Plan (LRTP)".

Goals, objectives, and targets

On June 13, 2012, the MPO adopted goals, objectives, and targets to guide the 2040 MTP (*Attachment B*). The targets are performance measures that can be evaluated using the Triangle Regional Model (TRM), the regionwide travel demand model.

Socioeconomic data

On March 14, 2012, the MPO released for public input socioeconomic data projections for 2040. The MPO took countywide population and employment projections out to 2040 and used the software application CommunityViz to allocate the growth within each county. This was a parcel-based allocation based on the land use (aka "place type") of the parcel, whether it is developed or undeveloped, and its suitability for development as measured by a number of factors that typically influence development decisions. Examples include proximity to major highways and proximity to transit stops. The land use and development status assigned to each parcel was based not only on its current land use, zoning, and-or development status, but also on the recommendations of a locally-adopted plan, such as a comprehensive plan. Therefore, the allocation resulted in a "Community Plans" scenario for 2040. After public input was collected via various means (e.g. workshops, a survey, email, etc.), and the SE data was reviewed by staff from the MPO and local jurisdictions, the SE data to be used in the Community Plans scenario was finalized in June 2012.

Maps showing the distribution of dwelling unit and employment growth from 2010-2040 in the Community Plans scenario are in *Attachments C-1* and *C-2*. The parcel-level data has been aggregated to traffic analysis zones (TAZs), which are the basic geographic unit used by the TRM. A downside of these maps is that they are not area-normalized: larger TAZs may show more growth mainly because of their geographic size.

More information:
http://www.dchcmpo.org/index.php?option=com_content&task=view&id=88&Itemid=35.

Deficiency Analysis and Needs Assessment

The MPO then completed a Deficiency Analysis and Needs Assessment to determine where investment is needed to improve on the performance measures. This modeled 2040 socioeconomic projections on the 2010 network – i.e. what if no transportation improvements were made as the MPO area grew in population and employment from 2010 to 2040. The analysis also modeled the 2010 network plus transportation projects that have received all their approvals but are not yet completed. This is called the "Existing plus Committed" (E+C) transportation network scenario. E+C is useful as a baseline for comparison with transportation network alternatives that include new highway and transit projects. It helps answer the question, "How can we improve overall system performance by investing in this set of transportation improvements, compared with doing nothing?".

The Deficiency Analysis measured congestion via volume-to-capacity ratio (V/C) and used V/C to assign a level of service (LOS) from A to F to major road segments, with the letters having similar meanings as school grades. A V/C ratio of 1.0 (i.e. the road is at capacity) is considered LOS E. It is possible to have roads over capacity (LOS F, >1.0 V/C). The Deficiency Analysis measured both daily average and afternoon peak V/C ratios.

Attachment D shows color-coded maps of congestion in the Carrboro-Chapel Hill area in the 2040 E+C scenario, daily (*D-1*) and in the afternoon peak (*D-2*). The daily map shows congestion (LOS F) on Main and Greensboro Sts. downtown, Estes Dr., and Jones Ferry Rd. west of NC-54. Some congestion is also shown on Smith Level Rd.; however, this is partly due to a

modeling issue that overallocated employment growth to the Carrboro High School area and is being addressed for the Alternatives Analysis. The PM peak map also shows congestion downtown, on Jones Ferry Rd., and on Estes Dr. as well as on sections of Homestead and Old Fayetteville Rd. Keep in mind that the TRM measures "bigger picture" congestion on street segments and does not model micro-level congestion at intersections.
More information:
http://www.dchcmpo.org/index.php?option=com_content&task=view&id=91&Itemid=35.

Alternatives Analysis

Since the baseline scenario has been established by the Deficiency Analysis, the MPO has developed a draft Alternatives Analysis to compare various plans for transportation investments with the 2010 and E+C scenarios. Each alternative is a combination of a land use scenario and transportation network.

Land use scenarios

- Community Plans – described earlier
- All-in-Transit – includes a greater emphasis on allocating population and employment density to bus stop and rail transit station areas.

Transportation networks

- Highway intensive
- Transit intensive
- Moderate – somewhat of a balance between the first two

Including two land use scenarios and three transportation networks would lead to the assumption that there will be six alternatives, except that one alternative – All-in-Transit land use scenario + Highway Intensive transportation network – is not modeled since this discord between land use and transportation planning is not likely. This leaves a total of five alternatives.

Alternatives Modeled

		Transportation network		
		Highway Intensive	Transit Intensive	Moderate
Land use scenario	Comm. Plan	✓	✓	✓
	All-in-Transit		✓	✓

All-in-Transit dwelling unit and employment growth maps for the Carrboro-Chapel Hill area are *Attachments C-3* and *C-4*.

Attachment E includes the first two sections of the Alternatives Analysis report: the introduction and performance measure results for each alternative. Page 1-5 of the introduction summarizes the highway and transit investments included in each of the three transportation networks. Following these two sections are congestion maps for each of the five alternatives.

The entire Alternatives Analysis may be accessed at the following link:
http://www.dchcmpo.org/index.php?option=com_content&task=view&id=92&Itemid=35.
Section 7 includes a list of all of the highway and transit projects included in each scenario.

Highway projects are classified as widenings, new facilities, modernizations (e.g. adding turn lanes or bike-ped facilities), and transportation system management (e.g. intersection capacity improvements, signal timing, etc.). Transit projects include new bus routes and new fixed-guideway transit such as light rail (LRT) and bus rapid transit (BRT).

Bicycle and pedestrian projects

Long range transportation plans in the past have also included bicycle and pedestrian plans. The transportation networks do not include bicycle and pedestrian facilities, but the TRM is able to model nonmotorized trips. Notice that the "mode share" performance measure reports the number of daily nonmotorized trips taken under each alternative. The final MTP will include a bicycle and pedestrian plan for the region.

Concurrent planning efforts

Concurrent with the development of the 2040 MTP, the MPO is also developing a Comprehensive Transportation Plan (CTP) and Collector Streets Plan (CSP). The CTP outlines 30-plus-year transportation needs for the region. Development of the CTP by MPOs is mandated by state law. The CTP is different from the MTP primarily in that it does not need to be fiscally constrained. However, it is similar enough to the MTP that it is being developed concurrently with the MTP. It will replace local jurisdictions' Thoroughfare Plans, the last of which was adopted for Carrboro in 1994. The CSP identifies streets that serve important functions in providing access between arterial facilities and local streets.

FISCAL AND STAFF IMPACT

No substantial fiscal or staff impacts accrue from receiving the update.

Since Transportation Improvement Program (TIP) projects must first be listed in the 2040 MTP before they can be implemented, the 2040 MTP is essential in shaping future transportation investments and expenditures in Carrboro.

RECOMMENDATION

Staff recommend that the Board of Aldermen receive the update on the 2040 MTP Alternatives Analysis.