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Program Review

Durham, Chapel Hill, Carrboro (DCHC) Metropolitan Planning Organization (MPO)

FINAL REPORT

July 12, 2019



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Executive Summary

Purpose

Pursuant to 23 United States Code (USC) (i)(5) and 49 USC 1607, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) must certify jointly the metropolitan transportation planning process in Transportation Management Areas (TMAs) at least once every four years. The Durham – Chapel Hill - Carrboro (DCHC) Metropolitan Planning Organization (MPO) is a TMA, a Metropolitan Planning Organization (MPO) with a population of at least 200,000 as defined by the United States Census Bureau.

Methodology

The review consisted of a desk audit, a public comment session conducted on Monday, May 20, 2019, and an on-site review also conducted on May 20, 2019. In addition to the formal review, routine oversight, including attendance at meetings, day-to-day interactions, review of work products, and working with the MPO on past certification review recommendations and corrective actions provide a major source of information upon which to base certification findings. After the on-site review is complete, a report is written to document the findings.

Statement of Finding

The FHWA and the FTA find that the metropolitan transportation planning process substantially meets Federal requirements and jointly certify the planning process.

Findings

The review identified four commendations and two recommendations. No corrective actions were issued.

Commendations:

- The MPO is commended for placing special emphasis on resiliency in its MTP.
- NCDOT is commended for their coordination with the MPO during the SPOT process, during TC meetings, and in helping the MPO solve its transportation issues.
- The MPO is commended for its website, which is public-facing, and contains readily accessible and current data.
- We commend the MPO for developing EJ metrics and for conducting detailed draft analyses.



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Recommendations:

- It is recommended that the MPO seek best practices to improve public involvement efforts during MTP development.
- We recommend that the MPO update its demographic profile before finalizing its EJ analyses, due to the potential change in communities of concern.

The Durham – Chapel Hill - Carrboro Metropolitan Planning Organization's metropolitan transportation planning process is certified for four years from the date of this Report.

Introduction

Purpose

The purpose of the Certification Review is to assess the extent of compliance with the Federal metropolitan transportation planning requirements, to recognize noteworthy practices, to identify problem areas, and to provide assistance and guidance, as appropriate. The Review consisted of a desk audit followed by discussions on a variety of transportation planning topics with State and local transportation officials directly involved in the MPO's highway and transit planning activities. The Review, which was held at City Hall in Durham, included a public involvement meeting on Monday, May 20, 2019, to provide the public an opportunity to offer comments on the MPO's metropolitan transportation planning process. No participants attended the public meeting. This report contains the Review Team's findings.

Scope

Pursuant to 23 USC (i)(5) and 49 USC 1607, the FHWA and the FTA must certify jointly the Federal metropolitan transportation planning process in Transportation Management Areas (TMAs) at least once every four years. A TMA is an urbanized area with a population of greater than 200,000, as defined by the United States Census Bureau. Certification reviews generally consist of three primary activities: 1) an extensive desk audit consisting of a review of planning products, 2) an on-site visit, and 3) preparation of a certification review report, which summarizes the review and contains findings, including commendations, recommendations, and corrective actions. Certification reviews address compliance with federal regulations and challenges, successes, and experiences of the cooperative relationship between the MPO, State Department of Transportation (DOT), and transit operators, who conduct the Continuing, Cooperative, and Comprehensive (3C) metropolitan transportation planning process. Joint FHWA/FTA certification review guidelines afford agency reviewers flexibility in designing the review to reflect local issues and circumstances. Consequently, the scope of the certification review reports varies from TMA to TMA.



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Methodology

The FHWA North Carolina Division Office and the FTA Region 4 Office conducted a joint Certification Review of the Durham – Chapel Hill - Carrboro MPO’s metropolitan transportation planning process, which included a site visit on May 20, 2019. The review was conducted in accordance with 23 Code of Federal Regulations (CFR) Part 450 and 49 CFR Part 613, which require FHWA and FTA to review and assess jointly the metropolitan transportation planning process for all TMAs at least once every four years. According to the 2010 Census, the DCHC MPO contained a population over 200,000, which makes it subject to the TMA transportation planning requirements.

The Federal Review team followed the guidance entitled, “A Risk-Based Transportation Management Area Planning Certification Review,” “TMA Certification Review State-of-the-Practice Review Report,” and the TMA Certification Process Field Handbook in conducting the Review. FHWA staff worked with the MPO to develop a schedule for the Certification Review that was compatible with ongoing workloads and the meeting schedules for the MPO’s Technical Committee (TC) and MPO Board. An extensive desk audit of the MPO’s planning documents was conducted prior to the on-site review. Advertisements for the certification review were posted in newspaper and public service announcement outlets. A public comment period was advertised as a part of the process for FHWA staff to receive comments. The topics addressed in this report document the regulatory basis, status, and findings. These terms are defined below.

Regulatory Basis – Defines where information regarding each planning topic can be found in the Code of Federal Regulations (CFR) and/or the United States Code (USC) – the “Planning Regulations” and background information on the planning topic.

Status – Defines what the Transportation Management Area (TMA) is currently doing regarding each planning topic.

Findings – Statements of fact that define the conditions found during the review, which provide the primary basis for determining commendations, recommendations, and corrective actions for each planning topic.

Commendation – A process or practice that demonstrates innovative, highly effective procedures for implementing the planning requirements. Examples include elements addressing items that have frequently posed problems nationwide, and significant improvements and/or resolution of past findings.

Recommendation – Addresses technical improvements to processes and procedures that, while somewhat less substantial and not regulatory, are still significant enough that FHWA and FTA are hopeful that State and local officials will take an action. The expected outcome is change that would improve the process, though there is no Federal mandate, and failure to respond could, but not necessarily, result in a more restrictive certification.



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Corrective Action – Indicates a serious situation that fails to meet one or more requirements of the metropolitan transportation planning statutes and regulations, thus seriously impacting the outcome of the overall planning process. The expected outcome is a change that brings the metropolitan planning process into compliance with a planning statute or regulation; failure to respond will likely result in a more restrictive certification.

Team Members

The Federal Review Team consisted of the following individuals:

- Mr. Bill Marley, Transportation Planner, FHWA, NC Division
- Mr. Joe Geigle, Congestion Management Engineer, FHWA, NC Division
- Ms. Lynise DeVance, Civil Rights Program Manager, FHWA, NC Division
- Mr. John Crocker, Community Planner, FTA, Region 4

Other participants consisted of staff from the DCHC MPO, the North Carolina Department of Transportation (NCDOT), Go Triangle, and the Triangle J Council of Governments (TJCOG), including:

- Mr. Felix Nwoko, DCHC MPO
- Mr. Andy Henry, DCHC MPO
- Ms. Meg Scully, DCHC MPO
- Mr. Kosok Chae, DCHC MPO
- Mr. Dale McKeel, DCHC MPO
- Mr. Aaron Cain, DCHC MPO
- Ms. Julie Bogle, NCDOT Transportation Planning Branch
- Mr. Jay Heikes, Go Triangle
- Mr. John Hodges-Copple, TJCOG

Findings from Previous Certification Review (2015)

The previous DCHC MPO Certification Review Report was issued on July 24, 2015. It contained six Commendations and six Recommendations. All Recommendations, listed below, have been addressed.

- It is recommended that the Raleigh-Durham-Chapel Hill (Triangle Area) continue to consider transportation conformity as they work on upcoming Metropolitan Transportation Plan (MTP) updates and beyond. As the project lists are prepared, they should be grouped by horizon years and projects should be identified as



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regionally significant, not regionally significant, or exempt. Doing this extra work will help keep the Triangle Area prepared for future conformity work in the event the area is designated under a future new National Ambient Air Quality Standard (NAAQS).

The DCHC MPO has continued the practice of identifying regionally significant projects and grouping their projects by horizon year. For the 2045 MTP update, completed on March 14, 2018, an unofficial conformity regional emissions analysis was completed even though it was not required since the Triangle Area was attainment for all NAAQS.

- It is recommended that the DCHC MPO consider all transportation modes in its federal metropolitan transportation planning activities, including highways, especially regarding the efficient intrastate and interstate movement of people and goods through the MPO.

The DCHC MPO MTP and TIP include projects on all major roadways as well as many projects on non-motorized modes of transportation.

- It is recommended that the DCHC MPO separately identify African Americans since they are the largest Environmental Justice (EJ) population and racial minority within the DCHC MPO boundary. As a best practice, the MPO may also want to present individual raw data for each racial minority within the MPO boundaries for information purposes, keeping in mind that the only racial minority to be mapped and analyzed separately would be African Americans, due to their significant size.

The DCHC MPO and CAMPO completed additional Environmental Justice work. The MPO's UPWP details this work and level of effort. A plan of action was developed and shared with FHWA.

- It is recommended that regarding public involvement and ensuring participation from all EJ populations that the MPO be more deliberate in seeking and documenting representatives from all its EJ populations to include on mailing lists, focus groups, advisory committees, etc.

The DCHC MPO and CAMPO completed additional Environmental Justice work. The MPO's UPWP details this work and level of effort. A plan of action was developed and shared with FHWA.

- It is recommended that the MPO include language in its Public Involvement Plan (PIP) objectives that specifically target EJ populations.

The DCHC MPO and CAMPO completed additional Environmental Justice work. The MPO's UPWP details this work and level of effort. A plan of action was



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developed and shared with FHWA.

- It is recommended that the DCHC MPO use measured data such as travel time and travel speeds in place of modeled/estimated measures such as Level of Service (LOS) and Volume to Capacity Ratio (V/C) to measure congestion.

The DCHC MPO's current model accounts for travel time and travel speeds.

General Comments

The review team discussed the risk-based approach to certification reviews, emphasizing the desk audit and the abbreviated on-site review. The review team also discussed new planning requirements under the Fixing America's Surface Transportation (FAST) Act legislation, which includes planning factors and Transportation Performance Management (TPM).

Following this discussion, there was a brief question and answer session in which MPO staff asked questions of the review team and offered comments on the Federal metropolitan transportation planning requirements and processes.

Organizational Structure and Policy Board Involvement

Regulation: 23 CFR 450.104
23 CFR 450.310

Status

The MPO Lead Planning Agency (LPA) serves as staff to the MPO. The LPA is housed in the City of Durham's Department of Transportation, located in City Hall in Durham. The MPO manages the metropolitan transportation planning process required by Federal law. The MPO plans for the area's surface transportation needs, including highways, transit, bicycle, and pedestrian facilities. MPO priorities include: 1) promoting the safe and efficient management, operation, and development of transportation systems; 2) serving the mobility needs of people and freight; 3) fostering economic growth and development; and 4) minimizing the negative effects of transportation, including air pollution.

The MPO serves the City of Durham, Durham County, Town of Chapel Hill, Town of Hillsborough, Town of Carrboro, and portions of Orange County and Chatham County. The MPO voting structure is highlighted in a Memorandum of Understanding (MOU), documented in its Bylaws, and displayed on the MPO's website, www.dchcmpo.org. The MPO designation has not changed since the initial designation by the Governor. In March 2014, the MOU was



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updated by the MPO Board and GoTriangle (formerly Triangle Transit Authority (TTA)) became a voting member of the MPO Board. No proposed changes to the MOU are currently envisioned.

The MPO's Board is the MPO's policy board, as prescribed in the MPO's MOU and By-Laws. The Board has a key role in making decisions about public investment in transportation services, infrastructure, and planning within the region, and in communicating those decisions to its member agencies. The Board is comprised of the following elected officials:

- City of Durham – 2 members, weighted votes = 16
- Town of Chapel Hill – 1 member, weighted votes = 6
- Town of Carrboro – 1 member, weighted votes = 2
- Town of Hillsborough – 1 member, weighted votes = 2
- Durham County – 1 member, weighted votes = 4
- Orange County – 1 member, weighted votes = 4
- Chatham County – 1 member, weighted votes = 2
- NCDOT – 1 member, weighted vote = 1
- GoTriangle – 1 member, weighted vote = 1
- FHWA and FTA are ex-officio non-voting members

The MPO's Technical Committee (TC) is comprised of technical staff from each MPO member jurisdiction or agency. The TC provides general and technical review, guidance, and coordination of the transportation planning process. The TC and TAC meet monthly. All TC and TAC meetings are open to the public. Attendance is good and a quorum is always met. Proxies are seldom used. The Board operates efficiently and effectively. In general, they do not stall or otherwise delay important actions. Weighted voting is permitted but is seldom invoked. There have been no issues with the concept of weighted voting; however, this is an issue in some MPOs in North Carolina.

Metropolitan Planning Area (MPA) Boundaries

Regulation: 23 CFR 420.109
23 CFR 450.312
23 CFR 450.314
23 CFR 450.321



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Status

The MPO's Metropolitan Planning Area boundary (MPA), based on the 2010 United States Census, was adopted by the MPO on November 14, 2012, and signed by the Governor on June 14, 2014. In 2014, GoTriangle (formerly the Triangle Transit Authority) was granted voting membership status on the MPO Board.

Geographical portions of the MPO are shared with the adjacent Capital Area Metropolitan Planning Organization (CAMPO), which is also a TMA. A small portion of the MPO's Urbanized Area Boundary (UZA) lies within the CAMPO MPA. Similarly, a small portion of CAMPO's UZA lies within the MPO MPA. By letters of agreement, the two MPOs agreed to be responsible for planning within their respective UZAs.

Possible future MPO MPA expansions include Pittsboro in Chatham County to the south, and Butner in Granville County to the northeast. A renegotiation of the boundary agreement with the Burlington-Graham MPO to the west is possible. Also, as the municipalities of Cary and Apex annex into Chatham County, a renegotiation of the boundary agreement with the Capital Area MPO may be necessitated. Factors in determining future expansions include rapid development and urbanization potential within the next 20 years, population density, and input from local jurisdictions. There are no Federal Lands or Indian Tribal lands within the MPA.

Agreements and Contracts

Regulation: 23 CFR 450.314

Status

Cooperative agreements have been established between the State DOT, the MPO, public transit operators, and the North Carolina Department of Environment and Natural Resources (NCDENR). Memorandums of Agreement (MOAs) and Memorandums of Understanding (MOUs) exist between various parties for purposes of statewide inter-agency consultation, pass-through agreements between NCDOT and the LPA, and between the LPA and sub-recipients. The MPO has agreed to accept NCDOT's targets with respect to PM1, PM2, and PM3.

Unified Planning Work Program (UPWP) Development

Regulation: 23 CFR 450.308 23 CFR 420.111



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Status

The MPO's UPWP is a product of a cooperative approach to development of the region's transportation program. Most of the work tasks and products in the UPWP are completed on time, despite the changing schedules and priorities of the various Federal, State, and local agencies. The UPWP tasks are the vehicle for implementing the MTP goals, policies, and recommendations. UPWP emphasis areas include proactive public outreach and dissemination, integration of land use in transportation planning involving low income and minority populations, consideration of safety and security, and environmental and air quality factors.

UPWP activities are developed, selected, and prioritized with the input of the MPO member jurisdictions based on the approved Prospectus. Staff identifies, selects, and prioritizes the work tasks in the UPWP that need to be and can be accomplished. Planning priorities facing the metropolitan area, and all metropolitan transportation and transportation-related air quality planning activities anticipated within the timeframe (one or two years), are typically included in the required narrative text for each work task.

The UPWP development process typically begins in late fall or early winter each year. NCDOT, transit operators, and member jurisdictions are consulted through subcommittee meetings and the TC to identify projects, studies, and work tasks that need to be included in the UPWP for the upcoming fiscal year. Their involvement in the development of emphasis areas supports and adheres to Federal requirements and meets the MPO's MTP and other planning objectives. The NCDOT Transportation Planning Branch (TPB) and Public Transportation Division (PTD) calculate and inform the MPO what Section 104(f) Planning (PL) funds and Section 5303 transit planning funds are available for programming. The total amount of planning funds plus the required 20 percent local match are then used to develop a budget for the MPO staff to pay salaries and benefits, plus operations charges. STPG-DA funds are also used to fund salaries and staff operations. Reporting and invoicing narratives are submitted to NCDOT by task code. The budget is then utilized to identify what types and how much work can be accomplished in the fiscal year. The UPWP contains enhanced funding tables to track obligations in real time. The draft UPWP is typically released in December. It is then reviewed by the member jurisdictions and sent electronically to NCDOT's TPB and PTD for review and comment. A public hearing is held prior to Board approval. Any comments or changes are then incorporated into a final UPWP, which is approved by the TC and Board in May. NCDOT provides the MPO a final letter of approval by June.

The UPWP is broken into three major components: 1) routine tasks, 2) major emphasis areas, and 3) regional activities such as maintenance of the Triangle Regional Model (TRM). There is a strategic linkage between the UPWP and the implementation of the required 3C planning process as well as the MTP, TIP, Environmental Justice (EJ), air quality, etc. The UPWP accounts for performance measures through the execution of MTP and CMP updates, transportation needs studies, and transit and bicycle and pedestrian plans. The MTP describes the MPO's vision while the UPWP identifies proposed activities to help achieve desired outcomes.



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UPWP amendments generally follow the same sequence as the development process beginning with subcommittee review, TC and Board approval, then NCDOT and FHWA approval. Amendments are processed by the LPA on an annual basis. They typically occur in late winter or early spring to adjust spending levels in the various UPWP funding categories.

NCDOT recently changed its Planning (PL) funds distribution formula. Carryover funds are no longer allowed. Instead, these funds are redistributed to the State's 19 MPOs with the intent that they be obligated where projects can receive the required local 20 percent match.

Metropolitan Transportation Plan (MTP) Development

Regulation: 23 CFR 450.322
23 CFR 450.324
23 CFR 450.306

Status

DCHC and CAMPO adopted jointly an MTP extending to 2045. It incorporates Performance Management (PM) PM1, PM2, and PM3, and complies with the new planning factors. The planning factors serve as a basis for identifying projects for inclusion in the MTP and TIP. The MPO placed special emphasis on resiliency in the 2045 MTP. It encompasses both MPO's Metropolitan Area Boundaries (MABs).

The MPO, NCDOT, and transit operators practice a participatory and cooperative 3C planning process. Coordination of statewide and metropolitan planning occurs through regular subcommittee meetings, collaborative planning for MTP and Comprehensive Transportation Plan (CTP) projects, inter-agency air quality meetings on the Triangle Regional Model (TRM), regional freight, and regional incident management initiatives. DCHC, CAMPO and NCDOT are finishing a joint Toll Study that should be approved by October 2019, and are working on a joint ITS plan. The Triangle J COG coordinates the MTP with CAMPO, which strengthens the MTP. There is a joint staff meeting of the two MPOs every other week, and the two MPO Boards meet twice a year. Regional Intelligent Transportation System (ITS) Architecture recommendations are reflected in the MPO planning process and the MTP. MTP and TIP ITS projects are derived from the Regional ITS Architecture and Deployment Plan. The Regional ITS Architecture tool is used for the evaluation of MTP and TIP ITS projects.

The MTP is multimodal. Funding for highway projects totals 58% while non-motorized projects total 42%. The highway element of the MTP includes contains projects on all major highways within the MAB. A significant amount of non-highway investment is earmarked for bus maintenance, bicycle facilities, and sidewalk maintenance and resurfacing. Pedestrian walkways and bicycle facilities are major components of the MTP. Pedestrian and bicycle facilities are an integral part of the MPO's goal of linking transportation and health issues. Sidewalk, bicycle,



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and transit projects figure prominently in the MPO's overall transportation initiatives and investments due to the MPO's demographics, which reflect a large numbers of students and persons over 65 years of age.

Consultation is carried out with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation through the establishment of a demographic forecasting group and the development of a regional land use scenario tool. The MPO meets with resource agencies to apprise them of assumptions and alternatives being evaluated in the MTP process.

The MTP is financially constrained and is well supported by many different sources of revenue. The MPO developed a financial plan that demonstrates how the adopted MTP can be implemented. It contains cost estimates, analysis of cost components, both traditional and non-traditional revenue forecasts, prioritization, and fiscal constraint.

The MPO identifies transportation and services to determine which projects should be included in the MTP through evaluating deficiencies in the transportation system, gathering project specific studies, reviewing community needs, and requesting and determining the feasibility of obtaining funding over the horizon year timeframe.

The MTP is coordinated with the Triangle Regional Model for purposes of Air Quality Conformity. The Triangle Regional Model is supported by both MPOs, NCDOT, and the transit operators. Community Viz is used to plot Socioeconomic (SE) data. Demographic, socioeconomic, and land use data are inputs in the Triangle Regional Model (TRM), a travel demand forecasting tool for the region. These data are also useful in assessing trip generation and modal choice models. Two alternative scenarios are provided by the MTP: one is based heavily on transit; the other is based heavily on single occupancy vehicles (SOV). The MTP also contains two different land use scenarios.

The MPO provides early, proactive, and meaningful public engagement during various stages of the MTP development. Public involvement is incorporated during MTP development via the following means: 1) implementation of the Public Involvement Plan; 2) public notices via email, posters at public sites, including printed material in the MPO's office, on buses, and the MPO website; and 3) public meetings at transit accessible sites. Project maps are provided online. Public workshops are held when the MTP goals, objectives, and performance measures are developed. Public participation in the MTP development has been less than anticipated. The MPO noted that unless there is a controversial project, the public shows no appreciable interest in the MTP. NCDOT's Transportation Planning Branch; its Division 5, 7, and 8 Offices; and the MPO's transit operators all evaluate the MTP, and collaboratively update its plans and projects. The public involvement process complies with Title VI and the Executive Order on Environmental Justice.



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Distribution of impacts to different socioeconomic and ethnic minorities is identified and measured through various means. Block group data from the 2010 United States Census was used to establish areas of low-income and minority population concentration.

MPO staff coordinates with their NCDOT Transportation Planning Division (TPD) coordinator, and communicates with other NCDOT departments, including Program Development and the Public Transportation Division. Agreements are in place with transit operators.

Commendation:

The MPO is commended for placing special emphasis on resiliency in its MTP.

Recommendation:

It is recommended that the MPO seek best practices to improve public involvement efforts during MTP development.

Financial Planning

**Regulation: 23 CFR 450.324
23 CFR 450.326**

Status

The MPO's financial plan is included as an element in the overall MTP. Available financial resources are listed and described in the TIP, and are incorporated into the MTP. The MTP is based on reasonably expected financial resources, and identifies other funding mechanisms where a shortfall exists. The MTP uses the best available data provided by NCDOT projections based on the Statewide Transportation Improvement Program (STIP) and other State funding sources. MTP updates involve trend analysis, updated project costs, and available State and Federal revenue forecasts.

The MTP process typically includes a review of project cost estimates obtained from NCDOT. Project cost estimates are updated for MTP projects that are not yet in the TIP. Such estimates are revised per any scope changes. Costs are reviewed and updated for MTP projects that are in the TIP based on TIP cost changes. Where warranted and in consultation with NCDOT, TIP cost assumptions may be revised for projects where the TIP estimate appears outdated. Assumptions and data sources for each revenue source are documented in the financial plan. A set of financial assumptions and calculations are established that guide the general approach to forecasting future revenues, and are included in the plan.

The MPO maintains a positive relationship with its member jurisdictions and manages its projects well. Financial information is developed in cooperation with NCDOT and MPO



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member jurisdictions and agencies. Staff from the TJCOG worked with both the DCHC and CAMPO MPOs to develop the financial plan. Revenues are forecast by source, and the MTP document provides assumptions for each. Financial analysis for roadways, transit, rail, bicycle, and pedestrian investments are included in MTP's financial plan chapter. Both existing and forecasted numbers for costs and revenues are evaluated.

NCDOT Powell Bill funds are used for operations and maintenance of the transportation system, and are distributed twice a year. Transportation Alternatives Program (TAP) funding is used for non-highway bicycle and pedestrian projects, but is not enough to do meaningful projects. The MPO is revisiting its bicycle and pedestrian allocations since it is difficult to build a regional network with limited funding. The MPO has several special studies ongoing, including corridor studies on US15/501, NC 98, and NC 54. NCDOT has been helpful in identifying supplemental funds to cover cost overruns associated with TAP projects. Surface Transportation Program – Direct Allocation (STP-DA) funds are programmed further out to minimize any lags in obligating them. The MPO uses almost all its funding, including PL funds.

Where appropriate, new revenue sources for the MTP and TIP are identified in consultation with the MPO partners. Typically, such sources are identified in a plan, a policy, a forecast, or a proposal from a member agency. For example, the MTP financial plan involves a review and consideration of the NCDOT's current long-range revenue forecast. However, this forecast merely extrapolates existing revenue streams into the future. The MTP documents assumptions for each revenue source. To ensure the TIP financial plans are consistent with the STIP, the MPO requests a copy of the most recent version of the STIP when updating the TIP.

Project consistency between the TIP and MTP is established at the outset. Financial plan consistency is a function of that. The MPO consults with NCDOT to generate the latest project cost estimates, and to ensure that the TIP financial plan is consistent with the STIP. NCDOT provides the MPO trend analysis data to assist TIP development. Ratios and percentages are applied to base numbers and balanced against project cost estimates. The TIP and STIP are required to match, so they must be consistent with each other. NCDOT provides tables of expenditures by funding categories, which assists in preparing conceptual project estimates. Data are adjusted for time (schedule), location, and other project specific conditions on an as needed basis. Generally, an amount of 10-20 percent is used for contingencies when estimating a project cost. Usually, when the TIP is being generated, comparisons of older estimated figures are compared with current ones. Estimates are sometimes updated when project scope changes significantly, or a significant change in the delivery of the project is anticipated. When new estimates are known, they are updated on an ongoing basis as project development progresses.

The MPO follows NCDOT's thresholds for determining an amendment versus an administrative modification.



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Air Quality (AQ) and Transportation Conformity

Regulation: 23 CFR 450.314
23 CFR 450.324
23 CFR 450.322
23 CFR 450.326
23 CFR 450.328
23 CFR 450.336

Status

The Triangle Area, including both the DCHC and CAMPO MPOs, is in attainment for the Carbon Monoxide (CO) and ozone standards. However, transportation conformity is still required for the TIP, MTP, and project actions based on a February 2018 federal court case involving the EPA and the 1997 Ozone NAAQS. The DCHC and CAMPO MPOs work together with the TJCOG to produce the required conformity determination report on ozone emissions, ozone, CO, particulate matter, and greenhouse gases as part of the 2045 MTP performance measure process.

Transportation Improvement Program (TIP) Development

Regulation: 23 CFR 450.316
23 CFR 450.324
23 CFR 450.326
23 CFR 450.328
23 CFR 450.332
23 CFR 450.334

Status

The MPO TIP is typically developed every two years on a schedule that is compatible with STIP development. It is a consensus based process whereby the MPO, NCDOT, and transit operators cooperatively develop the TIP through subcommittee meetings and technical meetings. The MPO works with the NCDOT STIP Unit, Transportation Planning Division (TPD), PTD, and Bicycle and Pedestrian Unit during the preparation of the draft TIP and STIP. The MPO provides a prioritized list of projects to the NCDOT with relevant local data for inclusion in the Strategic Prioritization Office of Transportation (SPOT) process. The SPOT process involves a data driven quantitative scoring of projects based on the Strategic Transportation Investments (STI) law. The North Carolina State Legislature passed a law requiring each MPO to develop



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and approve a local prioritization process. The NCDOT SPOT Office provides oversight of this legislation. The draft STIP is released and the MPO provides a local version of the document for the public review. Both the NCDOT and the MPO provide opportunities for the public to make comments on the draft STIP and TIP via public hearings. The draft STIP is due to be released in August 2019.

The TIP serves as a management tool for implementing the MTP by including the policies, investment choices, and priorities identified in the MTP. The MTP's transportation investments between highway and non-highway projects are split approximately 58% highway and 42% non-highway, whereas the STI mode investment split is approximately 75% highway and 25% non-highway. There is a transit tax in Orange and Durham Counties for transit projects, which funds the local match. The MPO believes that the TIP and STIP should better reflect the MPO's MTP priorities, and continues to have dialogue with NCDOT on this matter. The SPOT funding methodology does not allow for projects in the TIP to be implemented as planned since it does not afford the same weight to non-highway projects as it does to highway projects. As a result, the MPO uses STP-DA funding for them. The MPO also disagrees with NCDOT's policy to generally not maintain sidewalks and to not include them in its bridge designs. Other concerns include lack of funding for non-highway projects, and difficulty small municipalities have in providing match requirements. Despite differing opinions, the MPO and NCDOT Divisions work together well to assign points to projects when submitting them to the SPOT office. The MPO has had success with their current project ranking and selection methodologies.

The MPO's TIP development process has improved significantly primarily due to the recently created web application that allows for real-time online management of transportation funding and projects by the MPO. Recent years have seen better coordination from NCDOT during the SPOT process, increased NCDOT Division participation during TC meetings, and a more proactive approach from NCDOT to solving the MPO's transportation issues. The TC and Board appreciate this.

The MPO maintains a web-based TIP application process to streamline the amendment process. The TIP amendment and modification processes are also working better now that NCDOT submits their proposed amendments within the MPO area to the MPO prior to taking their official action. The NCDOT may ask the MPO to modify and/or amend the TIP based on project scope or time changes, and the MPO may modify or amend the TIP for time, project scope, and/or funding changes. The MPO's TIP amendment procedures define major and minor amendments, what triggers an amendment, and public involvement requirements. The amendment is presented at one Board meeting for information purposes, and is generally brought back for approval at the following meeting. Resolutions and action items are sent to the NCDOT for final approval by the North Carolina Board of Transportation, or vice-versa. If the MPO wishes to modify or amend the TIP, it contacts NCDOT to discuss the proposal. The MPO provides background information on amendments to the TC and Board, and approval by resolution is requested. This documentation is forwarded to NCDOT for final approval.



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The MPO's project selection process begins with a call for projects from member jurisdictions. The MPO's project ranking process closely mirrors that used by NCDOT. The MPO developed an STI and TIP prioritization methodology, which was subsequently endorsed by the Board and approved by NCDOT. It focuses on congestion, safety, feasibility, intermodal and multimodal considerations, local funding, and land use compatibility. An initial list of projects is evaluated for need, readiness, and funding feasibility. They are then ranked using the MPO's prioritization process.

The MPO ranks and prioritizes TIP projects using an established methodology, and Surface Transportation Program – Direct Allocation (STP-DA) and Transportation Alternatives Program (TAP) project ranking and selection criteria. Projects are then submitted to the NCDOT SPOT Office for inclusion in the 5 and 10-Year Work Programs, which include the TIP.

When the final STIP is released, the TIP must match it. Prior to release of the final STIP, if the TIP does not match the STIP, adjustments to funding and minor time changes may be required. The MPO follows the guidelines of the SPOT process and submits projects in the MTP for funding. Point assignments are based on joint consideration of the MPO and Divisions 5, 7, and 8 to maximize the potential for projects to be included in the TIP. The TIP contains all regionally significant transportation projects regardless of funding source within the five-year STIP Work Plan.

The allocation of STP-DA funds occurs as needed for different project types such as greenways, bicycle and pedestrian facilities, intersections, small roadway projects, transit, and enhancement projects. Ideally, the STIP matches the time horizons established by the MPO; however, NCDOT funding priorities are subject to change. Also, the general lack of funds for sub-regional projects means that many local projects slip into later horizon years with each successive STIP. There is a renewed commitment by NCDOT to provide more certainty on project delivery within the first five years of the STIP. The NCDOT and public transit operators provide the MPO with estimates of available Federal and State funds for the metropolitan area.

Demonstrating TIP fiscal constraint has been difficult for the MPO at times. The NCDOT develops the STIP and provides the MPOs with their relevant TIP. Except for STP-DA funds, the NCDOT generally controls the STIP and TIP financial programs.

Commendation:

NCDOT is commended for their coordination with the MPO during the SPOT process, during TC meetings, and in helping the MPO solve its transportation issues.

Public Outreach

Regulation: 23 CFR 450.316



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23 CFR 450.324

23 CFR 450.326

Status

The MPO's Public Involvement Plan (PIP) conforms to Federal regulations. Its goals are to provide timely notice, education, and information to the public regarding planning activities, and to provide the public reasonable opportunity to share views with decision-makers. It also affords citizens the opportunity to have their views considered and receive responses where appropriate. The MPO records public comments and shares them with the TC and Board members.

The MPO's public involvement is extensive, proactive, and timely. Evaluation metrics include number of email and mail responses received compared to that sent, workshop attendance, Twitter and Facebook comments, number of calls, and feedback. Successful activities include holding "pop up" meetings and specialized workshops, interviewing bus riders, and consultant-run corridor studies meetings. Public involvement and outreach for the MPO's TIP is coordinated with NCDOT's STIP public involvement and outreach. The MPO routinely evaluates the effectiveness of its public involvement procedures and endeavors to get more people involved early in the MTP process instead of waiting until a project alternative goes through their property. The MPO is currently updating its Limited English Proficiency (LEP) document, Title VI Civil Rights document, and reassessing its PIP to evaluate its effectiveness. The MPO stated it wants to "take the MTP to the public." They are interested in using crowdsourcing data for the next MTP update specifically when looking at scenario planning. The MPO considers and responds to public input by providing direct responses, providing summaries of responses posted to the MPO's website, and providing responses to the MPO Boards in the agenda packets.

The MPO maintains a robust, public-facing website. The MPO considers its website the backbone of its PIP. The website incorporates Google translate, web based maps, and a traffic data portal, which affords the public access to field collected data such as volumes, speeds, and bicycle and pedestrian counts. The MPO plans to migrate much of the information on its website to a cloud-based platform.

Some public participation items are performed administratively with limited public involvement. Such items do not require a formal public involvement process outside the regular MPO meeting structure. Residents may attend and speak at each Board meeting upon recognition by the Board Chair, who may impose a reasonable time limit for speakers.

The MPO's public involvement process is coordinated with that of NCDOT. The MPO highlights any statewide plans, programs, and workshops that are available for the public. The MPO works closely with the NCDOT when public involvement events are held within the MPO to schedule convenient and appropriate venues, assists in advertising meetings, and attends all NCDOT sponsored events held within a reasonable distance. The MPO coordinates with



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NCDOT's Divisions 5, 7, and 8 on specific projects. MPO staff also attends project meetings. MPO staff provides local concerns or information during merger and project review meetings. The MPO documents its consideration and response to public input.

Methods and venues that are successful continue to be a part of the MPO's ongoing public outreach, while activities that generate low turnouts have been minimized. The MPO staff works to make the language and concepts in all its documents more understandable and accessible to the public. Piggybacking on other meetings yields successful public input and interaction.

The MPO's PIP provides for traditionally underserved communities through newspaper advertisements in minority targeted newspapers. Special strategies such as providing food or child care during meetings are also considered.

Commendation:

The MPO is commended for its website, which is public-facing, and contains readily accessible and current data.

Self-Certifications

Regulation: 23 CFR 450.336

Status

A Certification Review by FHWA and FTA of the transportation planning process is required at least once every four years in TMAs, in addition to the required self-certification by the MPO and State. The MPO annually self certifies its planning process during development of the UPWP.

Title VI, Environmental Justice (EJ), and Limited English Proficiency (LEP)

**Regulation: 23 CFR 450.220
23 CFR 450.316
23 CFR 450.336**



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Status

MPOs must ensure that both benefits and burdens of their transportation plans are equitably distributed when comparing EJ populations to non-EJ populations. To achieve this, MPOs must conduct both qualitative and quantitative analyses. Qualitative analyses usually focus on public involvement efforts while quantitative analyses use data gathered based on specific metrics developed by the MPO. The foundation of qualitative analyses is an MPO's demographic profile.

During the last Certification Review in 2015, the MPO had recently completed their "Environmental Justice Report for the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization." The report was an extremely well-written and comprehensive document that contained an up-to-date demographic profile and addressed all aspects of EJ. The purpose of the report was to serve as an excellent foundation for the MPO as it moved forward with addressing EJ concerns and conducting EJ analyses. The report, which was completed in 2014 and adopted by the MPO in 2015, included nine commitments, one of which was to "*Update this EJ report following, or in conjunction with the adoption of future MTPs*" (see page 4-22 of the report).

Although DCHC adopted their 2045 MTP in March 2018, the review team found that the MPO has not yet completed an update of the EJ report. Staff indicated that an update may be completed later in 2019. The MPO also indicated that they are working on enhancing their EJ analyses with the development of two EJ metrics – one for Safety and one for Displacement, for which they provided draft data. The draft data for the Safety metric was broken out by vehicular, pedestrian, and bicycle crashes as they relate to communities of concern versus the MPO in its entirety. The draft data for the Displacement metric was broken out by type of project (widening, new location, and other) and type of displacement (residential, commercial, civic, and school), and compared communities of concern versus the MPO in its entirety.

We commend the MPO for developing EJ metrics and for conducting detailed draft analyses. However, the MPO needs to consider that the identified communities of concern, which are based on the demographic profile in the Environmental Justice Report, may have changed since the completion of the report in 2014, which relied on data from 2013 and earlier. We recommend that the MPO update its demographic profile before finalizing its EJ analyses, due to the potential change in communities of concern. We look forward to the completion of the safety and displacement EJ analyses as well as the update and republishing of the demographic profile and EJ report.

Commendation:

We commend the MPO for developing EJ metrics and for conducting detailed draft analyses.



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Recommendation:

We recommend that the MPO update its demographic profile before finalizing its EJ analyses, due to the potential change in communities of concern.

Congestion Management Process (CMP)

**Regulation: 23 CFR 450.320
23 CFR 450.322**

Status

The CMP defines a transportation network that was identified using the travel demand model, INRIX data, and shape files data. Bottlenecks have been identified and projects designed to alleviate congestion. CMP goals and objectives were derived from the goals within the MTP to effectively move vehicular traffic, expand public transportation, and reduce travel demand.

Consideration is given to examining traffic congestion conditions and problems on a regional basis since construction work, crashes, and other incidents along the Interstate highways, other freeways and expressways, and other major roads linking the entire Triangle area (Raleigh-Cary and Durham-Chapel Hill) may have impacts on congestion levels within the MPO boundary, and vice versa.

The MPO analyzes transportation deficiencies identified in the CMP and ensures projects are included in the MTP and TIP to address them. The effectiveness of the CMP is evaluated during each biennial report as the progress toward goals is measured, deficient segment data is updated with the latest information, the effectiveness of proposed projects and congestion management strategies is reviewed, and future initiatives are pursued. The CMP is also reevaluated during the MTP update process.

The major congestion issue in the MPO is vehicular; therefore, the main data source for the CMP is traffic counts. Congested locations exist along NCDOT roadways including I-40, I-85, and the Durham Freeway (NC 147). Proposed improvements incorporate additional ITS Architecture, which is being updated to include signal system upgrades.

The first step in data collection is the Average Annual Daily Traffic (AADT) values provided by NCDOT. If the AADT value and the corresponding V/C ratio show a segment or corridor is congested, additional data collection is collected if the segment or corridor contains signalized intersections. In this case, turning movement counts at signalized intersections and travel time/speed studies would be conducted to verify if there is an issue on the segment, or to show that level of service values and travel times and speeds are acceptable. This data collection and



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analysis allows for the evaluation of projects and proposed improvements as they are completed during the biennial report process.

Performance measures in the CMP include Volume to Capacity Ratio (V/C) and Level of Service (LOS); however, a transition to travel time data and volume data is underway. These performance measures provide a generalized analysis of roadway segments and allow for further data collection and analysis, if needed.

List of Obligated Projects

**Regulation: 23 CFR 450.334
23 CFR 450.314**

Status

The MPO provides the required list of obligated projects annually. It includes projects in all transportation modes. The listed projects are compared to the TIP. The list is included on the MPO's website, and made available to the public in accordance with the MPO's adopted PIP.

Environmental Mitigation

**Regulation: 23 CFR 450.320
23 CFR 450.324
23 CFR 450.316
23 CFR 450.324**

Status

The MPO's process for estimating potential environmental mitigation activities builds upon the existing consultation process through coordination with the NCDOT Leadership Team and State resource agencies, including the North Carolina Department of Environment and Natural Resources (NCDENR). The MPO assigns staff to a Merger Team to review project scoping. Federal, State, and local agencies are consulted during regularly held interagency consultation meetings. Minutes documenting consultation and coordination are prepared following each meeting. The consultation process has yielded a better understanding of the resources requiring avoidance, and impacts requiring minimization.

The MPO used a resource agency contact list for the latest MTP update, which includes agencies responsible for land use management, natural resources, environmental protection, conservation,



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and historic preservation. The resource agencies were contacted during MTP development and later when the draft MTP was available. The MTP includes maps of projects and environmental factors, and a table identifying impact areas and potential mitigation measures. As part of the consultation process, resource agencies can review the proposed mitigation measures in the MTP and recommend additional mitigation measures. The Environmental Mitigation Section of the MTP focuses on linking the environment with planning.

Geographic Information System (GIS) layers are analyzed using data from the NC One mapping resource. GIS environmental overlays, shape files, and screening maps are used to identify the location and condition of environmental features that could be impacted by proposals outlined in the TIP. Such features include hazardous waste sites, endangered species, 303D listed streams, wetland inventories, historic properties, and farmlands.

Consultation and Coordination

Regulation: 23 CFR 450.316
23 CFR 450.324

Status

The MTP consultant process was developed to include the MPO, CAMPO, NCDOT, local and regional staff, FHWA, and the Institute for Transportation Research and Education (ITRE). This group meets bi-weekly at the TJCOG during MTP updates. Inter-agency consultation meetings occur monthly and are guided through an approved Memorandum of Agreement (MOA).

Agency consultation is obtained at key decision points during transportation planning, programming, and decision-making. The Historic Resources Commission, NCDENR Division of Air Quality, Environmental Protection Agency (EPA), and all agencies that are consulted during Environmental Assessments (EAs) and National Environmental Policy Act (NEPA) projects are involved during MPO project planning and development.

Statewide Interagency Consultation Meetings (SICM), as well as the TIP and MTP specific Interagency Consultation (IC) meetings, held monthly during plan development and review, are well coordinated at the Federal, State, regional, and MPO levels. MTP coordination with other natural and cultural resources is accomplished during preliminary and draft document review. The MTP is compared with State conservation plans and maps, and with inventories of natural and historic resources. The MTP projects are overlaid on natural and historic resources maps culled from numerous sources on the NC ONE map, and other agency's GIS files.

Regional partners work together to share information and mapping. The MPO typically develops a comprehensive list of agencies and resource groups to locate data and create an overlay mapping system to compare MPO projects to identified natural, cultural, and agricultural



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resources, as well as hazardous conditions. The MPO refreshes the NC ONE environmental data every four years during the MTP development and uses it to review roadway and fixed guideway projects.

Air Quality Conformity consultation is a direct feedback with questions posed by the environmental agencies and responses provided by the MPO with corrections to either the TIP or MTP documents, or further explanation of the discrepancies in language between the two documents. The response and coordination between the planning and design phase is iterative during project development. All comments and responses become public record within the environmental documents and assist the MPOs in refining their processes. The MTP relies on environmental agency input to update the document with current data, policies, rulemaking, and other issues that may affect or conflict with the content and meaning of the plan.

Visualization techniques are used to assist agencies in understanding the transportation plan elements. Overlay maps incorporate all the projects within the MTP time horizons and indicate which resources may be affected by the projects. Any project having multiple resources within the general corridor or alignment will be noted as having an environmental component in the project listing table.

Management and Operations (M&O) Considerations

Regulation: 23 CFR 450.324
23 CFR 450.326

Status

The MPO's CMP network covers the MPO area and includes a modeled multimodal network. Modes include roadway, bicycle, pedestrian, and public transportation. The MPO is expanding the network with the collection of data for the evaluation of performance measures, and seeking better sources of data. The CMP includes M&O strategies. The operations community has reviewed the CMP goals, objectives, and strategies. The CMP is the mechanism by which they will be evaluated. The MPO also uses a Mobility Report Card and a surveillance of change analysis to measure M&O goals and objectives performance.

The MPO's MTP includes M&O strategies supported by specific goals and measurable objectives. Mechanisms for measuring M&O goals and objectives performance are under development. The MTP and TIP do not currently include a documented methodology for assessing the costs associated with maintaining and operating the existing Federal-aid transportation system. The MPO works with NCDOT and the City of Durham's Engineering Public Works to assess the costs associated with maintaining and operating the existing Federal-aid transportation system.



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The ITS Regional Architecture contains projects that are consistent with the MTP and are included in the overall planning process. The ITS Regional Architecture is linked to the planning process through the CMP. Coordinated signal/bus pre-emption systems, dedicated bus way considerations, and Bus on Shoulder (BOSS), freeway management, signal system updates, and ramp metering projects have been implemented. Parking coordination figures prominently in the CMP.

The Transportation Asset Management Plan (TAMP) was adopted in 2018 and included in the TIP in January 2019. Transit management and operations are routinely discussed with transit operators during TC meetings.

Transportation Safety and Security

Regulation: 23 CFR 450.306

23 CFR 450.324

23 CFR 450.322

Status

Safety is an important factor in NCDOT's project prioritization process, and in the MPO's TAP project selection and ranking methodology. Safety is interwoven into the modal chapters of the MTP, and is assigned an above average priority in project ranking criteria. The MPO and NCDOT work collaboratively to develop safety goals, objectives, performance measures, and strategies for the urban area. Partners in safety planning include local traffic engineers; transit operators; NCDOT Divisions 5, 7, and 8 traffic engineers; law enforcement; other departments within each local jurisdiction; and emergency management providers.

The MPO follows the Strategic Highway Safety Plan (SHSP) process as funding can be provided through the TIP. Goals and objectives are taken from the SHSP to reduce the number of fatalities, and to decrease the economic impact from highway-related accidents. SHSP elements are incorporated in project development. MPO and NCDOT coordination ensures consistency between the SHSP and MPO safety projects.

The MPO incorporates Performance Management (PM) PM1, PM2, and PM3, and complies with the new planning factors. The planning factors serve as a basis for identifying projects for inclusion in the MTP and TIP. Safety performance measures are incorporated in the planning process from traffic accident reports. Performance metrics include: 1) fatalities, 2) serious injuries, 3) crash rates, 4) crash hot spots, 5) collision inventories, and 6) pedestrian injuries. Roadway design plans consider accident patterns and how to reduce conflicts.

Safety is considered in determining which projects will be included in the MTP and TIP. NCDOT has funds specifically set aside for making safety improvements along roadways,



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including guardrails, rumble strips, enhanced lighting, turn lanes, better pavement marking, and signs. Highway Safety Improvement Program (HSIP) projects located within the MPO are included in the TIP. Most of these projects originate with NCDOT and are routinely included in the TIP when project requests are taken.

The MPO defines security as increasing the security of the transportation system for motorized and non-motorized users. The MPO accounts for natural emergencies including hurricanes and flooding. The MPO collaborates with local traffic engineers, emergency management providers, police, fire, sheriff's departments, NCDOT, the NC State Highway Patrol, Information Technology (IT), and GIS departments to secure its transportation infrastructure.

The MPO is developing a Transportation Safety/Security Plan and an Incident Management Plan protocol to improve transit, pedestrian, bicyclist, and highway safety. The plan will depict a snapshot of the accident types, severities, and locations using the National Transit Database (NTD), which is operated by FTA, and the Traffic Engineering Accident System (TEAAS) and Intelligent Traffic Systems (ITS) architecture maintained by NCDOT. The plan will identify safety and security deficiencies such as the need for placing cameras in buses and terminals to guide development of new strategies and campaigns for improving overall transportation safety. The MPO is also developing an Americans With Disabilities (ADA) Transition Plan, and access to its website for the hearing impaired.

Integrating Freight in the Transportation Planning Process

Regulation: 23 CFR 450.306
23 CFR 450.316
23 CFR 450.104

Status

The MPO considers and evaluates land use and freight-oriented developments. Freight is considered in MPO corridor plans and studies, including the US 15/501 and NC 98 corridor studies. Freight community involvement is an ongoing and collaborative process. The MPO developed a joint freight plan with NCDOT, is a member of a Freight Advisory Committee that meets twice a year, and is a Statewide Freight Advisory Committee member. Nearly all roadway projects identified in the freight plan are in the MTP.

The MPO collects and utilizes freight-related data from sources including truck count data, air cargo statistics, commodity flow data, land use data, the North Carolina Railroad (NCR), and a Freight Analysis Framework (FAF). The MPO coordinates freight interests with local chambers of commerce and the Regional Transportation Alliance (RTA).



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The RTA serves as the recognized regional business voice for transportation initiatives and policy across the greater Raleigh-Durham Triangle area. RTA was founded by the Cary, Chapel Hill - Carrboro, Durham, and Raleigh Chambers of Commerce in 1999 and chartered in 2001 as a regional program of the Greater Raleigh Chamber of Commerce with a separate, dues-paying membership. RTA membership includes over 100 leading businesses, 23 Chambers of Commerce, the DCHC and CAMPO MPOs, the Triangle Transit Authority (TTA), and the Raleigh Durham International Airport (RDU) Airport Authority. The RTA leverages the strength of its membership, which spans nine counties, to galvanize the broad-based regional support needed to accelerate critical mobility investments. The RTA business leadership focuses on relieving traffic congestion and enhancing mobility in the region. The Alliance identifies, promotes, and accelerates transportation policies and solutions to ensure economic vitality and preserve quality of life.

Visualization Techniques

Regulation: 23 CFR 450.316

Status

The MPO employs visualization techniques in its public involvement process to reinforce its transportation planning process using its website, public libraries, social media, brochures, and newsletters. Efforts to move beyond traditional tables and listings to visually display information include the use of its interactive website, visualization in both 3D and 2D, mapping, and GIS. The MPO uses Structured Query Language (SQL), postscripts, Microsoft ACCESS, and geo-databases to collect and store data. Input from travel demand models is converted into graphics, maps, and other visual displays through deficiency analyses demand flow diagrams, select links, travel time sheds, demand maps, and charts. The MPO's website contains projects, maps, reports, publications, interactive maps, and news items. Information and other visual material can be downloaded via portals. The public can access searchable data through public portals such as urban canvas and MS2.

Land Use and Livability

Regulation: 23 CFR 450.306

23 CFR 450.316

23 CFR 450.322

23 CFR 450.324



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Status

The MPO strives to integrate land use and transportation planning in a variety of ways and has developed a Smart Growth tool. The MTP includes an extensive Bicycle and Pedestrian section. The MPO designates a percentage of federal funding at the MPO level for bicycle and pedestrian projects. They submit bicycle/pedestrian projects through the SPOT process for inclusion in the STIP, and set aside a certain amount of federal funding at the MPO level for stand-alone bicycle/pedestrian projects. The MPO requests bicycle and pedestrian accommodations for all roadway projects where feasible. Non-motorized modes of travel such as bicycle, pedestrian, and transit are analyzed and addressed extensively in the MTP, and throughout the transportation planning process.

Projects already in the MTP and CTP are mapped and factored into land use recommendations. New transportation improvements are identified and incorporated into future transportation plan updates. The MPO compares the consistency of proposed transportation improvements with State and local planned growth and economic development through land use analysis, a Community VIZ tool, and demographic and socioeconomic projections.

To reduce congestion and Vehicle Miles Traveled (VMT) growth rates, the MPO funds portions of the Regional Travel Demand model. Transportation Demand Management (TDM) strategies are a factor in the MPO's project ranking methodology. The MPO adopted a Greenhouse Gas (GHG) reduction goal that is reflected in a GHG Plan and in the MTP. The MPO considers affordable housing plans and needs through coordination with its member jurisdictions, particularly the Durham City and County Planning Departments and the Town of Chapel Hill.

Performance Based Planning and Programming (PBPP)

Regulation: MAP-21 FAST Act

Status

The MPO chose to support NCDOT's PM1, PM2, and PM 3 targets and have incorporated them into its MTP. The MPO jointly developed a Travel Demand Model (TDM) that is housed in the Institute for Transportation Research and Education (ITRE). The model uses a sample set of household surveys from 2016.

The MPO uses Community VIZ for scenario planning. An updated version will be available within a year. Community VIZ analyzes socioeconomic data to generate alternative growth scenarios. Utilities also use Community VIZ for their planning purposes.



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Regional Models of Cooperation (RMOC)

Regulation: 23 CFR 450.104

Status

The MPO coordinates closely with CAMPO on a broad range of transportation issues. The degree to which the two MPOs cooperate and coordinate meets or exceeds that required by regulation.

Planning and Environmental Linkages (PEL)

**Regulation: 23 CFR 450.212
23 CFR 450.318**

Status

The MPO's MTP contains environmental maps that include conservation areas, public institutions, farm land, forest land, watersheds, and other environmental features that the State considers important. All available environmental layers are utilized when planning and programming proposed projects. The degree to which environmental mitigation is considered demonstrates a robust and focused practice to link planning and the environment.

Public Transit Planning

Regulation: 49 USC 5303

Status

The MPO contains four transit operators: 1) GoTriangle; Go Durham; 3) Chapel Hill Transit (CHT); and 4) Orange Public Transportation (OPT), which is new to the MPO. GoDurham is a division of Durham City Government, and is represented on the MPO Board by the elected representatives of the City of Durham. As required by the Moving Ahead for Progress in the 21st Century Act (MAP-21), GoTriangle has been a voting member of the MPO Board since 2014. GoDurham provides transit service throughout the City of Durham. Like GoTriangle, work trips are the largest trip purpose on the GoDurham system, although other purposes such as shopping, medical, and recreational are also heavily utilized. The markets served are diverse, ranging from



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major employers in urban environments to low-density retail and social services. Ridership is majority lower-income and African-American, though these demographics have become more diverse. GoTriangle provides regional transit connections between origins and destinations in Durham, Orange, and Wake Counties. Most bus routes provide peak-hour commuter connections to large employment destinations such as UNC-Chapel Hill, UNC Healthcare, Duke University and Medical Center, downtown Durham, Research Triangle Park (RTP), NC State University, and downtown Raleigh. All-day services are also provided seven days a week to connect the largest municipalities in the Triangle including Chapel Hill, Durham, Cary, and Raleigh. Most trips are for work or university-related purposes. Ridership is diverse in terms of income and ethnicity.

GoTriangle ridership is heaviest in the heavily-traveled corridors that connect to major employers. Routes between Chapel Hill (fare free), Durham, and Raleigh are the most popular routes in the system. There are also many routes between lower-density suburbs and major employers. Ridership varies widely on these routes depending on the strength of the destination(s), density of the origins, and distance to the destination(s). Ridership is heaviest during peak commute times, though off-peak ridership has also grown substantially as more options have been offered. Bus capital replacement under MAP-21 is a challenge for GoTriangle to maintain its level of service and plans for future service. MAP-21 reduced the formula funds dedicated to transit vehicle capital replacement. Despite the reduction in formula funds, the agency's needs are unchanged. Therefore, GoTriangle is faced with the potential need to use funds, including dedicated sales tax revenues intended to be spent on service expansions, and instead re-appropriate them to capital replacement.

GoDurham routes that serve several key destinations in a single corridor have the highest GoDurham ridership, including routes along Holloway Street, Fayetteville Street, and Chapel Hill Road/University Drive. Major destinations such as Duke University, North Carolina Central University, Durham Tech, Northgate Mall, The Village Shopping Center, and the Streets at Southpoint shopping mall also generate high ridership. Ridership tends to be lower as routes move farther from the urban core.

GoTriangle is governed by a Board of Trustees. Some members are appointed by the region's municipalities and counties while others are appointed by the NC Secretary of Transportation. GoTriangle employs full-time and part-time employees. GoTriangle directly operates many routes, while the remainder are operated by their local partner agencies – Chapel Hill Transit in Chapel Hill, GoDurham in Durham, GoRaleigh in Raleigh, and C-Tran in Cary. GoTriangle's administrative offices are in southeast Durham at 4600 Emperor Blvd, and the bus operations and maintenance facility is located several miles away at 5201 Nelson Road in Durham.

The MPO goal for the TIP notes the MPO's commitment to a "balanced transportation system" that "will provide opportunities for greater use of alternative modes of transportation, including public transit, bicycling, and pedestrian movement." This policy goal is reflected in the MPO's longstanding policy to direct STP-DA and TAP funds to non-highway projects, such as transit.



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CMAQ funding is also made available to transit on equal terms with other modes. The MPO has worked closely to develop performance metrics for the region's transportation system that emphasizes the importance of person-throughput, as opposed to vehicle level of service, and other measures that prioritize personal mobility over vehicular mobility. For example, the MPO's Mobility Report Card provides measures of the number of passengers carried by different modes on certain key roadways in the region.

The MPO also has a strong record of emphasizing EJ issues and prepares regular reports on EJ issues, including identifying areas where higher levels of transit service to serve transit-dependent populations may be appropriate. The MPO and GoTriangle planning staff have collaborated closely on major corridor projects as well as local and state funding for other transit projects. MPO staff have helped coordinate major transit initiatives such as the region-wide, multi-agency procurement of fare boxes.

The MPO incorporates the planning factors in all proposed projects, including GoTriangle's transit projects. The transit operators and the MPO maintain a positive relationship. Transit operators are involved in all planning phases, including the TIP, STIP, UPWP, and MTP. MPO coordination with NCDOT continues to improve.

Like GoDurham, Orange Public Transit is represented on the MPO Board by the elected representatives of Orange County. North Carolina State law limits the amount of state and federal transportation funds that can be used for purposes other than roadway construction and widening purposes, such as building bikeways, transit shelters, fixed-guideway transit systems, and park-and-ride facilities. The MPO is an excellent partner in funding transit projects, but these restrictions make funding transit projects challenging.

Action Plan

The FHWA North Carolina Division Office will work with the Durham – Chapel Hill - Carrboro (DCHC) Metropolitan Planning Organization (MPO) and the NCDOT to address the recommendations identified in this Report.



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Appendix A

Certification Review Agenda

DCHC Certification Review Agenda
Monday, May 20, 2019
Durham City Hall

Introduction and Purpose	1:00 – 1:10
Desk Top Review Findings and Discussion on MTP, TIP, CMP, ITS Architecture Air Quality/Conformity	1:10 – 2:00
Public Involvement	2:00 – 2:30
Environmental Justice	2:30 – 2:55
Break	2:55 – 3:05
Performance Management (PM1)/Travel Demand Model	3:05 – 3:30
Finance (STP, DA, PL, SPR, TAP, CMAQ, Special Studies)	3:30 – 4:00
Public Transit	4:00 – 5:00
Open Discussion	5:00 – 5:20
Schedule follow up meeting to discuss “Parking Lot” Issues	5:20 – 5:30
Public Meeting	5:30 – 7:00



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Appendix B

Certification Review Findings

Commendations:

- The MPO is commended for placing special emphasis on resiliency in its MTP.
- NCDOT is commended for their coordination with the MPO during the SPOT process, during TC meetings, and in helping the MPO solve its transportation issues.
- The MPO is commended for its website, which is public-facing, and contains readily accessible and current data.
- We commend the MPO for developing EJ metrics and for conducting detailed draft analyses.

Recommendations:

- It is recommended that the MPO seek best practices to improve public involvement efforts during MTP development.
- We recommend that the MPO update its demographic profile before finalizing its EJ analyses, due to the potential change in communities of concern.



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Appendix C

Public Notice



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DCHC
Metropolitan Planning Organization
Planning Tomorrow Today

Federal Review of Regional Transportation Planning

The Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) is responsible for regional transportation decisions in Durham County and parts of Orange and Chatham counties. The U.S. Department of Transportation (USDOT) will conduct a periodic review of the MPO's planning activities and procedures to determine whether public involvement, planning, financial and other requirements are being met.

The USDOT review team encourages citizens to provide comments at a public meeting on Monday, May 20, 2019, 5:30PM to 7:00PM, in the Transportation conference room on the 4th floor of Durham City Hall (101 City Hall Plaza, Durham, NC 27701). Participants can drop-in to meet with members of the review team. For further information, contact Andy Henry, 919-560-4366, extension 36419, andre.w.henry@durhamnc.gov.

Persons with disabilities will be accommodated – please request assistance at least 48 hours in advance of the meeting.

Se puede provenir servicio de traducción – favor de pedir servicio 48 horas antes de la reunión.

H-S: May 5, 2019



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Appendix D

Glossary of Acronyms

AADT -	Average Annual Daily Traffic
ADA -	Americans with Disabilities Act
AQ -	Air Quality
BOSS -	Bus on Shoulder
3C -	Continuing, Cooperative, Comprehensive Planning Process
CAMPO -	Capital Area Metropolitan Planning Organization
CFR -	Code of Federal Regulations
CHT -	Chapel Hill Transit
CMAQ -	Congestion Mitigation and Air Quality
CMP -	Congestion Management Program
CO -	Carbon Monoxide
CTP -	Comprehensive Transportation Plan
DATA -	Durham Area Transit Authority
DCHC -	Durham – Chapel Hill - Carrboro
DOT -	Department of Transportation
EA -	Environmental Assessment
EJ -	Environmental Justice
EPA -	Environmental Protection Agency
FAF -	Freight Analysis Framework
FHWA -	Federal Highway Administration
FTA -	Federal Transit Administration



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GHG -	Greenhouse Gas
GIS -	Geographic Information System
HSIP -	Highway Safety Improvement Program
IC -	Interagency Consultation
IT -	Information Technology
ITRE -	Institute for Transportation Research and Education
ITS -	Intelligent Transportation Systems
LEP -	Limited English Proficiency
LOS -	Level of Service
LPA -	Lead Planning Agency
M&O -	Management and Operations
MAP-21 -	Moving Ahead for Progress in the 21 st Century Act
MOA -	Memorandum of Agreement
MOU -	Memorandum of Understanding
MPA -	Metropolitan Planning Area
MPO -	Metropolitan Planning Organization
MTP -	Metropolitan Transportation Plan
NAAQS -	National Ambient Air Quality Standard
NCDENR -	North Carolina Department of Environment and Natural Resources
NCDOT -	North Carolina Department of Transportation
NCR -	North Carolina Railroad
NEPA -	National Environmental Policy Act
NTD -	National Transit Database
OPT -	Orange Public Transportation
PBPP -	Performance Based Planning and Programming



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PEL -	Planning Environmental Linkages
PIP -	Public Involvement Plan
PL -	Planning Funds
PM -	Particulate Matter
PTD -	Public Transportation Division
RDU -	Raleigh-Durham International Airport
RMOC -	Regional Models of Cooperation
RTA -	Regional Transportation Alliance
RTP -	Research Triangle Park
SHSP -	Strategic Highway Safety Plan
SICM -	Statewide Interagency Consultation Meeting
SMSA -	Standard Metropolitan Statistical Area
SOV -	Single Occupancy Vehicle
SPOT -	Strategic Prioritization on Transportation
SPR -	State Planning and Research
SQL -	Structured Query Language
STI -	Strategic Transportation Investments
STIP -	Statewide Transportation Improvement Program
STP-DA -	Surface Transportation Program – Direct Allocation
TAC -	Transportation Advisory Committee
TAMP -	Transportation Asset Management Plan
TAP -	Transportation Alternatives Program
TC -	Technical Committee
TDM -	Transportation Demand Management
TEAAS -	Traffic Engineering Accident Analysis System



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TIP -	Transportation Improvement Program
TJCOG -	Triangle J Council of Governments
TMA -	Transportation Management Area
TPD -	Transportation Planning Division
TPM -	Transportation Performance Management
TRM -	Triangle Regional Model
TTA -	Triangle Transit Authority
UPWP -	Unified Planning Work Program
USC -	United States Code
UZA -	Urbanized Area Boundary
V/C Ratio -	Volume to Capacity Ratio
VMT -	Vehicle Miles Traveled

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