DCHC
Metropolitan Planning Organization
Planning Tomorrow Today

Section 3

MPO Planning Process & Requirements

Contents:

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U.S. Department of Transportation
Federal Highway Administration
1200 New Jersey Avenue, SE
Washington, DC 20590
202-366-4000

Fixing America's Surface Transportation Act or "FAST Act"

The FAST Act

On December 4, 2015, President Obama signed the Fixing America's Surface Transportation (FAST) Act (Pub. L. No. 114-94) into law—the first federal law in over a decade to provide long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act authorizes $305 billion over fiscal years 2016 through 2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and research, technology, and statistics programs. The FAST Act maintains our focus on safety, keeps intact the established structure of the various highway-related programs we manage, continues efforts to streamline project delivery and, for the first time, provides a dedicated source of federal dollars for freight projects. With the enactment of the FAST Act, states and local governments are now moving forward with critical transportation projects with the confidence that they will have a federal partner over the long term.

Follow Us!

Since December, the Federal Highway Administration (FHWA) has been ***hitting the road*** toward fast and effective implementation of the FAST Act, and this website will be your one-stop shop for everything from fact sheets and funding notices to guidance, regulations and presentations.

We will add new information and regular updates as implementation progresses, and we invite you to come along for the ride. Visit us often to see our progress in 2016 ***by clicking on the signs above***.

FHWA's Implementation Priorities

Some of FHWA's priorities for the first year of FAST Act implementation include:

- Developing summary materials (including fact sheets and presentations) to ensure the public and highway stakeholders have key information on the FAST Act's highway provisions;
- Getting funding in the hands of states, locals, Metropolitan Planning Organizations (MPOs), tribes, and others who can put it to use throughout the country;
- Issuing guidance to fill in the details of the new law and to answer stakeholder questions; and
- Making progress on regulations related to the FAST Act.

For more information regarding the FAST Act, including provisions that impact other agencies within the U.S. Department of Transportation, please visit the Department's FAST Act website.

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U.S. Department of Transportation
Federal Highway Administration
1200 New Jersey Avenue, SE
Washington, DC 20590
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Fixing America's Surface Transportation Act or "FAST Act"

SURFACE TRANSPORTATION BLOCK GRANT PROGRAM

Fiscal year	2016	2017	2018	2019	2020
Estimated funding*	$11.163 B	$11.424 B	$11.668 B	$11.876 B	$12.137 B

*Calculated (sum of estimated individual State STBG apportionments)

Program purpose

The FAST Act converts the long-standing Surface Transportation Program into the Surface Transportation *Block Grant* Program acknowledging that this program has the most flexible eligibilities among all Federal-aid highway programs and aligning the program's name with how FHWA has historically administered it. [FAST Act § 1109(a)]. The STBG promotes flexibility in State and local transportation decisions and provides flexible funding to best address State and local transportation needs.

Statutory citation

FAST Act § 1109; 23 U.S.C. 133

Funding features

Type of budget authority
Contract authority from the Highway Account of the Highway Trust Fund, subject to the overall Federal-aid obligation limitation.

Apportionment of funds
As under MAP-21, the FAST Act directs FHWA to apportion funding as a lump sum for each State then divide that total among apportioned programs. Each State's STBG apportionment is calculated based on a percentage specified in law. (See "Apportionment" fact sheet for a description of this calculation)

Set-asides
The following are to be set aside from a State's STBG apportionment:

- Funding for Transportation Alternatives (See the "Transportation Alternatives" fact sheet for additional information). [23 U.S.C. 133(h)]
- 2% for State Planning and Research (SPR). [23 U.S.C. 505]
- Funding for bridges not on Federal-aid highways (see "Off-system bridges" below). [23 U.S.C. 133(f)]

Additionally, from the portion of a State's STBG apportionment available for use in any area of the State, the Governor of a border State may designate up to 5% for border infrastructure projects eligible under the SAFETEA-LU Coordinated Border Infrastructure Program. [FAST Act § 1437]

Suballocation
A percentage of a State's STBG apportionment (after set-aside for Transportation Alternatives) is to be obligated in the following areas in proportion to their relative shares of the State's population:

- *Urbanized areas with population greater than 200,000 â€"* This portion is to be divided among those areas based on their relative share of population, unless the Secretary approves a joint request from the State and relevant MPO(s) to use other factors.
- *Areas with population greater than 5,000 but no more than 200,000*—The State is to identify projects in these areas for funding, in consultation with regional planning organizations, if any.
- *Areas with population of 5,000 or less.* [23 U.S.C. 133(d)]

The percentage to be suballocated grows over the period of the FAST Act (51% in FY 2016; 52% in FY 2017; 53% in FY 2018; 54% in FY 2019; 55% in FY 2020). The remainder net of suballocated amounts may be used in any area of the State. [23 U.S.C. 133(d)(6)]

The FAST Act also extends the requirement for States to make available obligation authority to urbanized areas over 200,000 population, but changes the period of time to which that requirement attaches (now over the period of FY 2016-2020). [23 U.S.C. 133(g)(1)]

Transferability to other Federal-aid apportioned programs
A State may transfer to the National Highway Performance Program, National Highway Freight Program, Highway Safety Improvement Program, and Congestion Mitigation and Air Quality Improvement Program up to 50% of STBG funds made available each fiscal year. STBG funds suballocated under 23 U.S.C. 133(d)(1)(A) may not be transferred. [23 U.S.C. 126]

Federal share

As a general rule, in accordance with 23 U.S.C. 120. (See the "Federal Share" fact sheet for additional detail.)

Eligible activities

The FAST Act's STBG Program continues all prior STP eligibilities (see in particular 23 U.S.C. 133(b)(15), as amended). It also adds the following new eligibilities:

- A State may use STBG funds to create and operate a State office to help design, implement, and oversee public-private partnerships (P3) eligible to receive Federal highway or transit funding, and to pay a stipend to unsuccessful P3 bidders in certain circumstances [23 U.S.C. 133(b)(14)]; and
- At a State's request, the U.S. DOT may use the State's STBG funding to pay the subsidy and administrative costs for TIFIA credit assistance for an eligible STBG project or group of projects. [23 U.S.C. 133(b)(13)].

The FAST Act also adds specific mention of the eligibility of installation of vehicle-to-infrastructure communication equipment. [FAST Act §1407, 23 U.S.C. 133(b)(1)(D)]

Program features

Location of Projects

In general, STBG projects may not be on local roads or rural minor collectors. There are a number of exceptions to this requirement, such as the ability to use up to 15% of a State's rural suballocation on minor collectors. Other exceptions include: bridge and tunnel projects; safety projects; fringe and corridor parking facilities/programs; recreational trails, pedestrian and bicycle projects, and safe routes to school projects; boulevard/roadway projects largely in the right-of-way of divided highways; inspection/evaluation of bridges, tunnels, and other highway assets; port terminal modifications; and projects within the pre-FAST Act title 23 definition of "transportation alternatives." [23 U.S.C. 133(c)]

Off-system bridges

The FAST Act continues (without change) the MAP-21 set-aside of a share of each State's STBG apportionment for use on bridges not on Federal-aid highways ("off-system bridges"). The amount is to be not less than 15% of the State's FY 2009 Highway Bridge Program apportionment. The Secretary, after consultation with State and local officials, may reduce a State's set-aside requirement if the State has insufficient off-system bridge needs.

For wholly State/locally funded projects to replace or rehabilitate deficient off-system bridges, any amounts spent that are in excess of 20% of project costs may be credited to the non-Federal share of eligible bridge projects in the State. [23 U.S.C. 133(f)]

Bridge and tunnel inspection standards

If a State is not compliant with national bridge and tunnel inspection standards established by the Secretary, a portion of STBG funds must be used to correct the problem. [23 U.S.C. 144(h)(5)]

Treatment of projects

Each STBG project—including a project located outside of a Federal-aid highway right-of-way, but excluding a project funded by the recreational trails set-aside— is treated as a project on a Federal-aid highway. [23 U.S.C. 133(i)]

Bundling of Bridge Projects

The FAST Act encourages States to save costs and time by bundling multiple bridge projects using NHPP funds as one project under one project agreement and it places requirements on how that bundling is to be conducted. [23 U.S.C 144(j)]

February 2016

Page last modified on April 22, 2016

The Transportation Planning Process Key Issues

A Briefing Book for Transportation Decisionmakers, Officials, and Staff

A Publication of the Transportation Planning Capacity Building Program
Federal Highway Administration
Federal Transit Administration

NOTICE

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PART I: OVERVIEW OF TRANSPORTATION PLANNING

Transportation planning plays a fundamental role in the state, region or community's vision for its future. It includes a comprehensive consideration of possible strategies; an evaluation process that encompasses diverse viewpoints; the collaborative participation of relevant transportation-related agencies and organizations; and open, timely, and meaningful public involvement.

Figure 1: Transportation planning process

INTRODUCTION

Transportation helps shape an area's economic health and quality of life. Not only does the transportation system provide for the mobility of people and goods, it also influences patterns of growth and economic activity by providing access to land. The performance of the system affects public policy concerns like air quality, environmental resource consumption, social equity, land use, urban growth, economic development, safety, and security. Transportation planning recognizes the critical links between transportation and other societal goals. The planning process is more than merely listing highway and transit capital projects. It requires developing strategies for operating, managing, maintaining, and financing the area's transportation system in such a way as to advance the area's long-term goals.

This book provides government officials, transportation decisionmakers, planning board members, and transportation service providers with an overview of transportation planning. It contains a basic understanding of key concepts in statewide and metropolitan transportation planning, along with references for additional information. Part I discusses transportation planning and its relationship to decisionmaking. This section is general, and provides a broad introduction to the planning process. Part II presents short descriptions of important policy and planning topics. This section includes more technical information than Part I, but is not intended to provide details of each policy issue. This report is available electronically on the Transportation Planning Capacity Building website at **www.planning.dot.gov** and is updated periodically to include additional topics or information.

This book has been updated to reflect changes in legislation that affect statewide and metropolitan transportation planning requirements. It is an informational publication that replaces its predecessor, the 2004 "The Metropolitan Transportation Planning Process: Key Issues, A Briefing Notebook for Transportation Decisionmakers, Officials, and Staff" (Publication FHWA-EP-03-041 5/04).

Previous version of Briefing Notebook for Transportation Decisionmakers, Officials, and Staff

For additional information about any of the topics discussed in this book, contact your local Federal Highway Administration (FHWA) division or Federal Transit Administration (FTA) regional office. For information on how to reach FHWA or FTA staff, visit the FHWA and FTA websites at **www.fhwa.dot.gov** and **www.fta.dot.gov,** or the Transportation Planning Capacity Building website at **www.planning.dot.gov.**

What is the transportation planning process?

Transportation planning is a cooperative process designed to foster involvement by all users of the system, such as the business community, community groups, environmental organizations, the traveling public, freight operators, and the general public, through a proactive public participation process conducted by the Metropolitan Planning Organization (MPO), state Department of Transportation (state DOT), and transit operators.

Figure 1 illustrates the transportation planning process.

Transportation planning includes a number of steps:

- Monitoring existing conditions;
- Forecasting future population and employment growth, including assessing projected land uses in the region and identifying major growth corridors;
- Identifying current and projected future transportation problems and needs and analyzing, through detailed planning studies, various transportation improvement strategies to address those needs;
- Developing long-range plans and short-range programs of alternative capital improvement and operational strategies for moving people and goods;
- Estimating the impact of recommended future improvements to the transportation system on environmental features, including air quality; and
- Developing a financial plan for securing sufficient revenues to cover the costs of implementing strategies.

A METROPOLITAN PLANNING AREA may include the urbanized area (UA), areas expected to become urbanized within the next 20 years, and additional areas determined by political boundaries (e.g., a county) or geographic boundaries (e.g., an air basin).

URBANIZED AREA (UA): an area that contains a city of 50,000 or more in population plus the incorporated surrounding areas meeting size or density criteria as defined by the U.S. Census Bureau.

What is a Metropolitan Planning Organization and what are its typical functions?

A Metropolitan Planning Organization (MPO) is a transportation policy-making body made up of representatives from local government and transportation agencies with authority and responsibility in metropolitan planning areas. Federal legislation passed in the early 1970s required the formation of an MPO for any urbanized area (UA) with a population greater than 50,000. MPOs were created in order to ensure that existing and future expenditures for transportation projects and programs were based on a continuing, cooperative, and comprehensive (3-C) planning process. Federal

funding for transportation projects and programs is channeled through the MPO. Note that some MPOs are found within agencies such as Regional Planning Organizations (RPOs), Councils of Governments (COGs), and others.

There are five core functions of an MPO:

Establish a setting: Establish and manage a fair and impartial setting for effective regional decisionmaking in the metropolitan area.

Identify and evaluate alternative transportation improvement options: Use data and planning methods to generate and evaluate alternatives. Planning studies and evaluations are included in the Unified Planning Work Program or UPWP (see page 8).

Prepare and maintain a Metropolitan Transportation Plan (MTP): Develop and update a long-range transportation plan for the metropolitan area covering a planning horizon of at least twenty years that fosters (1) mobility and access for people and goods, (2) efficient system performance and preservation, and (3) good quality of life.

Develop a Transportation Improvement Program (TIP): Develop a short-range (four-year) program of transportation improvements based on the long-range transportation plan; the TIP should be designed to achieve the area's goals, using spending, regulating, operating, management, and financial tools.

Involve the public: Involve the general public and other affected constituencies in the four essential functions listed above.

In accordance with federal regulations, the MPO is required to carry out metropolitan transportation planning in cooperation with the state and with operators of publicly owned transit services. The MPO approves the metropolitan transportation plan. Both the governor and the MPO approve the TIP.

Most MPOs will not take the lead in implementing transportation projects, but will provide an overall coordination role in planning and programming funds for projects and operations. The MPO must involve local transportation providers in the planning process by including transit agencies, state and local highway departments, airport authorities, maritime operators, rail-freight operators, Amtrak, port operators, private providers of public transportation, and others within the MPO region.

From an organizational perspective, there is no required structure for an MPO; as a decisionmaking policy body, an MPO may be composed of:

- A policy or executive board
- Technical and citizen advisory committees
- A director and staff

MPO staff assists the MPO board by preparing documents, fostering interagency coordination, facilitating public input and feedback, and managing the planning

process. The MPO staff may also provide committees with technical assessments and evaluations of proposed transportation initiatives. The MPO staff may also engage consultants to generate needed data.

A technical advisory committee may then provide recommendations to the board on specific strategies or projects. An advisory committee may also provide technical analysis, specialized knowledge, and citizen input on specific issues. It is common for an MPO to have a Technical Advisory Committee and Citizen Advisory Committee, and to have subcommittees on specific issues such as environmental justice, bicycle issues, or travel demand modeling.

Those involved in metropolitan transportation planning should reach out to stakeholders to inform them of critical issues facing their regions and provide them with opportunities to contribute ideas and offer input. This is especially important in the early and middle stages of the process, while the plan and the TIP are being developed. Special attention should be paid to those groups that are underrepresented or have been underserved in terms of the expenditure of transportation dollars (see Part II section on Title VI/Environmental Justice).

Air Quality Nonattainment Area (NAA): A geographic region of the United States that the EPA has designated as not meeting the air quality standards.

What are other responsibilities for some MPOs?

A metropolitan area's designation as an air quality nonattainment area (NAA) or maintenance area creates additional requirements for transportation planning. Transportation plans, programs, and projects must conform to the state's air quality plan, known as the State Implementation Plan (SIP). In nonattainment or maintenance areas for air quality, the MPO is responsible for coordinating transportation and air quality planning.

Air Quality Maintenance Area: A geographic region of the United States previously designated nonattainment pursuant to the CAA Amendments of 1990 and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under section 175A of the CAA, as amended.

Areas with populations greater than 200,000 are designated transportation management areas (TMAs). TMAs must have a congestion management process (CMP) that identifies actions and strategies to reduce congestion and increase mobility (see Part II section on CMP). In addition, TMAs have the ability to select Surface Transportation Program (STP) funded projects in consultation with the state; in other MPOs and rural areas the STP projects are selected by the state in cooperation with the MPO or local government.

In addition to meeting federal mandates, MPOs often have extra responsibilities under state law. For example, California's MPOs are responsible for allocating some non-federal transportation funds in their regions, while other states give MPOs a shared role in growth management and land use planning.

What is a state DOT and what are its typical functions?

Each of the U.S. states, Puerto Rico, and the District of Columbia have an agency or department with official transportation planning, programming, and project implementation responsibility for that state or territory, referred to as the state DOT. In addition to transportation planning responsibilities, these agencies may have responsibility for the design, construction, operation, or maintenance of state facilities for multiple modes of transportation (including air, water, and surface transportation). State departments of transportation also work cooperatively with tolling authorities, ports, local agencies, and special districts that own, operate, or maintain different portions of the transportation network, or individual facilities.

Primary transportation planning functions of the state DOT:

Prepare and Maintain a Long-Range Statewide Transportation Plan: Develop and update a long-range transportation plan for the state. Plans vary from state to state and may be broad and policy-oriented, or may contain a specific list of projects.

Develop a Statewide Transportation Improvement Program (STIP): Develop a program of transportation projects based on the state's long-range transportation plan and designed to serve the state's goals, using spending, regulating, operating, management, and financial tools. For metropolitan areas, the STIP incorporates the TIP developed by the MPO.

Involve the public: Involve the general public and all of the other affected constituencies in the essential functions listed above.

What are the relationships among the MPO, the state DOT, and other agencies involved in transportation planning and project implementation?

Transportation planning must be cooperative because no single agency has responsibility for the entire transportation system. For example, some roads that are part of the Interstate Highway System (IHS) are subject to certain standards and are usually maintained by a state DOT. Others are county arterials or city streets which are designed, operated, and maintained by counties or local municipalities. Transit systems are often built, operated, and maintained by a separate entity.

In metropolitan areas, the MPO is responsible for actively seeking the participation of all relevant agencies and stakeholders in the planning process; similarly, the state DOT is responsible for activities outside metropolitan areas. The MPO and

state DOT also work together. For example, a state DOT staff person may sit on the MPO board.

The state DOT follows special requirements to document its process for consulting with officials from local governments located outside the metropolitan area. This process is separate and distinct from the broad public involvement process and must be documented separately. It provides an opportunity for local officials to participate in the development of the long-range statewide transportation plan and the Statewide Transportation Improvement Program (STIP).

The federal government has a special government-to-government relationship with Indian Tribal governments that is affirmed in treaties, Supreme Court decisions, and executive orders. Federal agencies are required to consult with Indian Tribal Governments regarding policy and regulatory matters.

State DOTs consider the needs of Indian Tribal Governments when carrying out transportation planning, and consult with Indian Tribal Governments in development of the long-range statewide transportation plan and the Statewide Transportation Improvement Program.

MPOs also may consider the needs of, and consult with, Indian Tribal Governments in the development of long-range transportation plans and TIPs when the metropolitan planning area includes Indian Tribal Lands.

Outside of the statewide and metropolitan planning processes, state DOTs and MPOs may consult with Indian Tribal Governments when, for example, a project may affect Indian Tribal archeological resources. For information on FTA's Tribal Transit Program, see **www.fta.dot.gov/funding/grants/grants_financing_3553.html.**

For more information on Tribal planning, see **www.planning.dot.gov/tribal.asp.**

What are key documents produced by the metropolitan and statewide planning processes?

As illustrated in Figure 2, there are five key documents produced by the transportation planning process:

	Who Develops?	Who Approves?	Time Horizon	Content	Update Requirements
UPWP	MPO	MPO	1 or 2 Years	Planning Studies and Tasks	Annually
MTP	MPO	MPO	20 Years	Future Goals, Strategies, and Projects	Every 5 Years 4 years for nonattainment and maintenance areas
TIP	MPO	MPO/ Governor	4 Years	Transportation Investments	Every 4 Years
LRSTP	State DOT	State DOT	20 Years	Future Goals, Strategies, and Projects	Not Specified
STIP	State DOT	US DOT	4 Years	Transportation Investments	Every 4 Years

Figure 2: Key planning products

The Unified Planning Work Program (UPWP): The UPWP lists the transportation studies and tasks to be performed by the MPO staff or a member agency. Because the UPWP reflects local issues and strategic priorities, the contents of UPWPs differ from one metropolitan area to another.

The UPWP covers a one- to two-year period. It typically contains several elements:

- The planning tasks (e.g., data collection and analysis, public outreach, and preparation of the plan and TIP), the supporting studies, and the products that will result from these activities;
- All federally funded studies as well as all relevant state and local planning activities conducted without federal funds;

- Funding sources identified for each project;
- A schedule of activities; and
- The agency responsible for each task or study.

The Metropolitan Transportation Plan (MTP) or Long-Range Transportation Plan (LRTP): In metropolitan areas, the transportation plan is the statement of the ways the region plans to invest in the transportation system. Per the federal regulations, the plan shall "include both long-range and short-range program strategies/actions that lead to the development of an integrated intermodal transportation system that facilitates the efficient movement of people and goods."

The plan addresses, for example:

- Policies, strategies, and projects for the future;
- A systems level approach by considering roadways, transit, nonmotorized transportation, and intermodal connections;
- Projected demand for transportation services over 20 years;
- Regional land use, development, housing, and employment goals and plans;
- Cost estimates and reasonably available financial sources for operation, maintenance, and capital investments (see Part II section on Financial Planning and Programming); and
- Ways to preserve existing roads and facilities and make efficient use of the existing system.

The Metropolitan Transportation Plan (MTP) and the long-range statewide transportation plan must be consistent with each other. The MTP must be updated every five years in air quality attainment areas or every four years in nonattainment or maintenance areas.

MPOs should make special efforts to engage interested parties in the development of the plan. Finally, in cases where a metropolitan area is designated as a nonattainment or maintenance area, the plan must conform to the SIP for air quality (see Part II section on Air Quality).

Transportation Improvement Program (TIP): In the TIP, the MPO identifies the transportation projects and strategies from the MTP that it plans to undertake over the next four years. All projects receiving federal funding must be in the TIP. The TIP is the region's way of allocating its limited transportation resources among the various capital and operating needs of the area, based on a clear set of short-term transportation priorities.

RURAL TRANSPORTATION: Information and resources for rural transportation policy-makers, planners, and stakeholders is available from the National Association of Development Organizations (NADO) and the NADO Research Foundation at **www.ruraltransportation.org.**

Under federal law, the TIP:

- Covers a minimum four-year period of investment;
- Is updated at least every four years;
- Is realistic in terms of available funding and is not just a "wish list" of projects. This concept is known as fiscal constraint (see Part II for more information);
- Conforms with the SIP for air quality in nonattainment and maintenance areas;
- Is approved by the MPO and the governor; and
- Is incorporated directly, without change, into the Statewide Transportation Improvement Program (STIP).

The State Planning and Research (SPR) Program is similar to the UPWP in that it lists the transportation studies, research and tasks to be performed by the state DOT staff or its consultants. The SPR Program contains several elements:

- The planning tasks, studies and research activities that will be conducted over a one- to two-year period;
- Funding sources identified for each project;
- A schedule of activities; and
- The agency responsible for each task or study.

The Long-Range Statewide Transportation Plan: State DOTs must develop a long-range statewide transportation plan. These vary from state to state; they may be policy-oriented or may include a list of specific projects.

The statewide plan also addresses:

- Policies and strategies, or future projects;
- Projected demand for transportation services over 20 or more years;
- A systems-level approach by considering roadways, transit, nonmotorized transportation, and intermodal connections;
- Statewide and regional land use, development, housing, natural environmental resource and employment goals and plans;
- Cost estimates and reasonably available financial sources for operation, maintenance, and capital investments (see Part II section on Financial Planning); and
- Ways to preserve existing roads and facilities and make efficient use of the existing system.

Statewide Transportation Improvement Program (STIP): The STIP is similar to the TIP in that it identifies statewide priorities for transportation projects and must be fiscally constrained. Through an established process, the state DOT solicits or identifies projects from rural, small urban, and urbanized areas of the state. Projects are selected for inclusion in the STIP based on adopted procedures and criteria. As noted above, TIPs that have been developed by MPOs must be incorporated directly, without change, into the STIP.

Under federal law and regulation, the STIP:

- Must be fiscally constrained and may include a financial plan.
- Must be approved by FHWA and FTA, along with an overall determination that planning requirements are being met. STIP approval must be granted before projects can proceed from the planning stage to the implementation stage.

How is federal transportation funding provided to states and metropolitan areas?

The funding for transportation plans and projects comes from a variety of sources including the federal government, state governments, special authorities, public or private tolls, local assessment districts, local government general fund contributions (such as local property and sales taxes) and impact fees.

However, federal funding—transferred to the state and later distributed to metropolitan areas—is typically the primary funding source for major plans and projects. (See appendix for a description of important federally aided transportation programs.) Federal transportation funding is made available through the Federal Highway Trust Fund and is supplemented by general funds. It is important to remember that most FHWA sources of funding are administered by the state DOTs. The state DOT then allocates the money to urban and rural areas based on state and local priorities and needs. Most transit funds for urban areas are sent directly from the FTA to the transit operator. Transit funds for rural areas are administered by the state DOT.

Federal funds are made available through a specific process:

- **Authorizing Legislation:** Congress enacts legislation that establishes or continues the existing operation of a federal program or agency, including the amount of money it anticipates to be available to spend or grant to states, MPOs, and transit operators. Congress generally reauthorizes federal surface transportation programs over multiple years. The amount authorized, however, is not always the amount that ends up actually being available to spend.
- **Appropriations:** Each year, Congress decides on the federal budget for the next fiscal year. As a result of the appropriation process, the amount appropriated to

a federal program is often less than the amount authorized for a given year and is the actual amount available to federal agencies to spend or grant.

- **Apportionment:** The distribution of program funds among states and metropolitan areas (for most transit funds) using a formula provided in law is called an apportionment. An apportionment is usually made on the first day of the federal fiscal year (October 1) for which the funds are authorized. At that time, the funds are available for obligation (spending) by a state, in accordance with an approved STIP. In many cases, the state is the designated recipient for federal transportation funds; in some cases, transit operators are the recipient.
- **Determining Eligibility:** Only certain projects and activities are eligible to receive federal transportation funding. Criteria depend on the funding source.
- **Match:** Most federal transportation programs require a non-federal match. State or local governments must contribute some portion of the project cost. This matching level is established by legislation. For many programs, the amount the state or local governments have to contribute is 20 percent of the capital cost for most highway and transit projects.

How is federal funding used?

There are many federal-aid transportation programs that support transportation activities in states and metropolitan areas, each having different requirements and program characteristics. These programs are not "cash up front" programs; rather, eligible expenditures are reimbursed. That is, even though the authorized amounts are "distributed" to the states, no cash is actually disbursed at this point. Instead, states are notified that they have federal funds available for their use. Projects are approved and work is started; then the federal government reimburses the states, MPOs, and transit operators for costs as they are incurred, reimbursing up to the limit of the federal share.

The federal government holds funding recipients accountable for complying with all applicable federal laws. When local governments directly oversee a federally funded project, the state DOTs are responsible for monitoring local governments' compliance with federal laws.

What are flexible funds?

One important provision in federal transportation legislation allows for the use of certain federal-aid highway program and federal transit program funds for either highway or transit projects. This is referred to as flexible funding. "Flexible funding" provisions were a radical departure from traditional transportation policy; federal

transit, highway, and safety programs formerly had very strict eligibility requirements, and funds could not be transferred between the programs. The ability to transfer funds (with certain restrictions) between highway and transit programs was introduced so metropolitan areas could apply federal transportation funds to their highest priority transportation projects.

The funds are not actually transferred from one bank account to another; rather, FHWA and FTA confirm program-eligible expenditures and reimburse accordingly. In urbanized areas (UAs) with populations greater than 200,000, MPOs are responsible for considering "flexing" funds to meet local planning priorities. In areas with populations less than 200,000, flexible funding decisions are made jointly by the MPO and the state DOT, and the state DOT makes the flexible funding decisions in rural areas. Flexible funding is most commonly used for FHWA's Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Improvement (CMAQ) program, and FTA's Urbanized Area Formula Funds, though flexing in other programs is possible.

PART II: MAJOR POLICY AND PLANNING ISSUES

Although the transportation planning process is concerned primarily with the issues facing a particular metropolitan area or state, there are many issues common to all parts of the country. This section addresses these common transportation topics, and provides details on several important issues facing MPOs and states engaged in transportation planning.

Each section provides a basic understanding of the topic, discusses the role of the MPO and state DOT as appropriate, answers questions about how the topic is addressed in the transportation planning process, and provides resources for additional information.

Air Quality

What is the relationship between transportation and air quality?

Usage of the transportation system is an influential factor in a region's air quality. Therefore, the estimated emission of pollutants from motor vehicles is a key consideration in transportation planning. Regions that have nonattainment or maintenance air quality status are required to ensure that emissions from transportation investments are consistent, or in conformity with, levels set forth in state air quality plans. Therefore, state DOTs and MPOs need to have a clear understanding of the air quality-related transportation planning requirements.

What are the major sources of air pollution?

The air quality of an area is affected by the emission of pollutants and their interaction with sunlight, topography, and weather patterns. Pollutants are emitted by motor vehicle operation and a variety of other activities, including manufacturing, use of petroleum-based products like gasoline, and even small business activities such as dry cleaning.

Sources of air pollutant emissions can be classified as stationary, area, or mobile sources, as shown in Figure 3.

Stationary sources include relatively large, fixed facilities such as power plants, chemical process industries, and petroleum refineries.

Area sources are small, stationary, non-transportation sources that collectively contribute to air pollution such as dry cleaners, gas stations, landfills, wastewater treatment plants, and others.

Mobile sources include on-road vehicles such as cars, trucks, and buses; and off-road sources such as trains, ships, airplanes, boats, lawnmowers, and construction equipment.

The key transportation-related pollutants are ozone and its precursors hydrocarbons (HC) and nitrogen oxides (NOx), carbon monoxides (CO), and particulates (PM-10 or PM-2.5, particles that are smaller than 10 micros or 2.5 micron, respectively). These pollutants emanate in part from on-road mobile sources and cannot exceed certain specified levels in a given region.

The Clean Air Act (CAA), Title 23 and Title 49 U.S.C. requires that transportation and air quality planning be integrated in areas designated by the U.S. Environmental Protection Agency (EPA) as air quality nonattainment or maintenance areas. In fact,

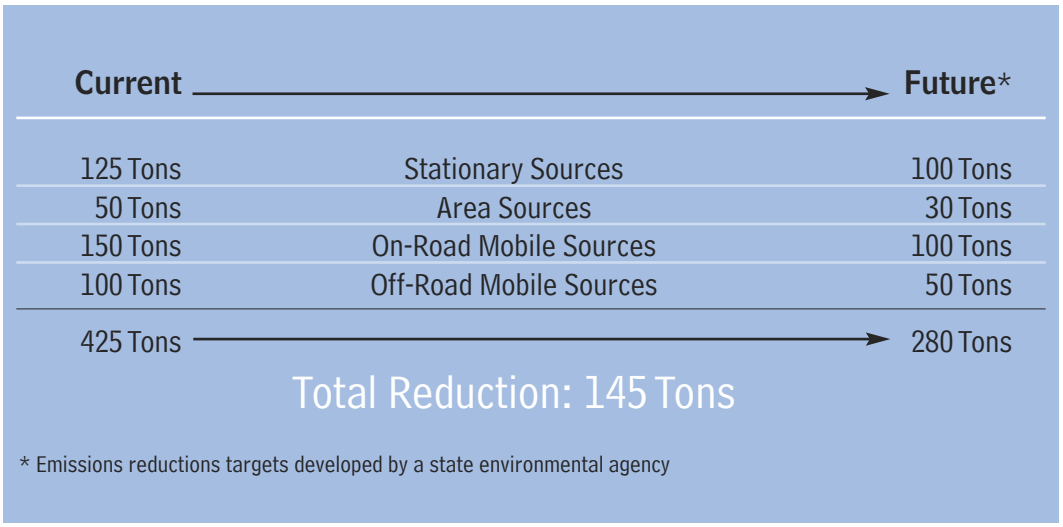

Figure 3: All sources of pollution can be looked at for ways to reduce emissions and improve air quality

in nonattainment and maintenance areas, federal funding and approval for transportation projects is only available if transportation activities are consistent with air quality goals through the transportation conformity process. The transportation conformity process includes a number of requirements that MPOs must meet (see section below on transportation conformity).

The CAA requires that each state environmental agency develop a plan called a State Implementation Plan (SIP). The SIP shows how the state will implement measures designed to improve air quality enough to meet National Ambient Air Quality Standards (NAAQS) for each type of air pollutant, according to the schedules

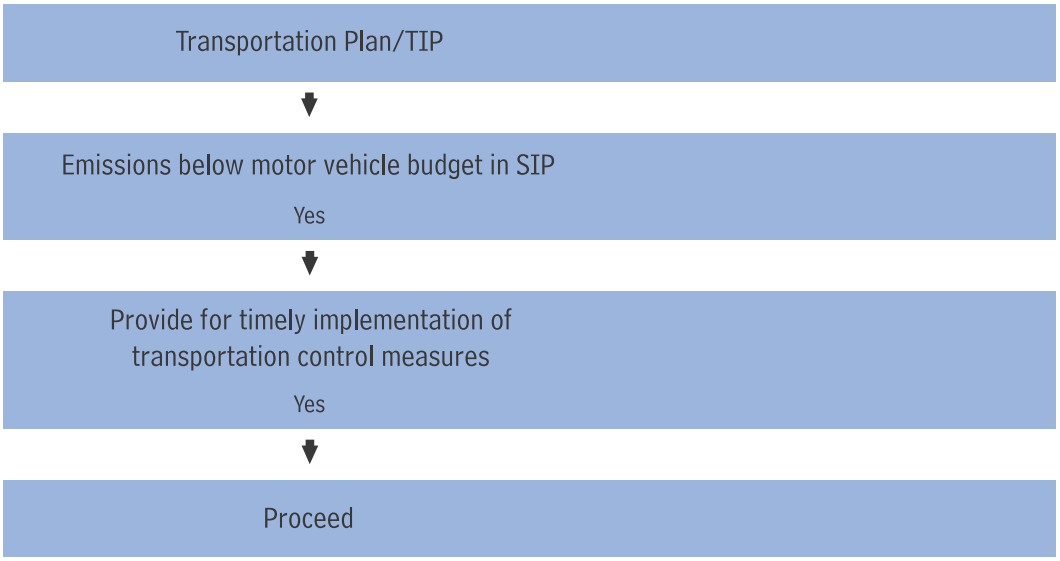

Figure 4: Transportation conformity process

included in the CAA. Pollutants are usually measured in parts per million (PPM) of ambient air, and standards vary by type of pollutant.

For each source category (stationary, area, or mobile), the SIP assigns emission reduction targets of the pollutant. For on-road mobile sources, the emission reduction target is further refined into a motor vehicle emissions "budget"—emissions limits for motor vehicle emissions sources.

Vehicle emissions reductions programs (e.g., the use of reformulated gasoline or implementation of Inspection and Maintenance [I/M] programs), changing how we travel (e.g., ride sharing or use of transit), or transportation projects that reduce congestion (e.g., signal synchronization programs) can all help areas meet emission reduction targets for on-road mobile sources. MPOs should be actively involved with the state in setting the motor vehicle emissions budgets. Transportation officials need to educate themselves about the options and trade-offs available to them, so they can balance the need for transportation investment with the need to achieve healthful air.

Motor vehicle emissions budgets can be revised. However, doing so requires revising the SIP, which can be a complicated and lengthy process. MPOs should participate in the SIP revision process if it is undertaken.

What is the role of the MPO in air quality planning?

"Nonattainment" areas (NAA) are geographic areas that do not meet the federal air quality standards, and maintenance areas are areas that formerly violated but currently meet the federal air quality standards. If no violations of air quality standards have been found, the area is considered to be in compliance or attainment with federal air quality standards.

An area can be designated "nonattainment" for one pollutant and in attainment for another. Transportation conformity is required for all ozone, carbon monoxide, nitrogen dioxide, and particulate matter nonattainment or maintenance areas.

The Clean Air Act (CAA) of 1990 identifies the actions states and MPOs must take to reduce emissions from on-road mobile sources in nonattainment or maintenance areas.

The challenge for MPOs in nonattainment or maintenance areas is to decide on a mix of transit and highway investments that, combined with measures such as Inspection and Maintenance (I/M) programs or reformulated gasoline, will keep emissions within the allowable limits for emissions from motor vehicles.

Inspection and Maintenance Programs: State programs that require vehicles to be inspected and repaired to comply with specific Clean Air Act requirements.

Reformulated gasoline: Gasoline blended to burn more completely and evaporate less easily. Fewer volatile organic compounds (VOCs) are released into the air, thus reducing ozone.

According to the CAA, transportation plans, TIPs, and projects cannot:

- Create new violations of the National Ambient Air Quality Standards (NAAQS);
- Increase the frequency or severity of existing violations of the standards; or
- Delay attainment of the standards.

MPOs are encouraged to participate in air quality planning and to identify transportation strategies that will help reduce emissions from on-road mobile sources of pollution.

Though not required, many MPOs have developed public education and communications campaigns about the connection between transportation and air quality; these encourage the public to make travel choices that will benefit air quality.

What is transportation conformity and how does it relate to the NAAQS?

The transportation conformity process, as illustrated in Figure 4, is a way to ensure that transportation plans and programs meet air quality goals in order to be eligible for federal funding and approval. Whenever a metropolitan transportation plan or TIP is amended or updated, the MPO must comply with the conformity requirements.

What is a conformity determination and who is responsible?

TRANSPORTATION CONTROL MEASURES (TCMS): Transportation strategies that affect traffic patterns or reduce vehicle use to reduce air pollutant emissions. These may include high-occupancy vehicle (HOV) lanes, provision of bicycle facilities, ridesharing, telecommuting, etc. Such actions may be included in a SIP if needed to demonstrate attainment of the NAAQS.

Transportation conformity on transportation plans and TIPs is demonstrated when projected regional emissions for the plan and TIP do not exceed the region's motor vehicle emissions budgets. A conformity determination is a finding by the MPO policy board, and subsequently by FHWA and FTA, that the transportation plan and TIP meet the conformity requirements. While the MPO is ultimately responsible for making sure a conformity determination is made, the conformity process depends on federal, state, and local transportation and air quality agencies working together to meet the transportation conformity requirements.

If transportation control measures (TCMs) are included in an approved SIP, the MPO must provide an assurance that TCMs are being implemented on schedule each time it updates its plan and TIP conformity. Those TCMs must be programmed for timely implementation in the TIP.

A necessary part of the transportation and air quality planning process is consulting with other involved agencies on critical issues and providing opportunities for public participation. MPOs must inform the public that they are going to make a conformity determination, make all relevant documents reasonably available, and give adequate time to review the documents and supporting materials.

What plans, programs, and projects are subject to transportation conformity requirements?

The MPO's long-range transportation plan and TIP must meet the conformity requirements. This includes all projects that are expected to be funded or that will require an approval by FHWA/FTA at any point during the life of the plan or TIP.

Also, any regionally significant projects (as defined by the conformity rule), even those that are not federally funded or approved, must be included in the regional emissions analysis of the transportation plan and TIP. Regionally significant projects include, at a minimum, all principal arterial highways and all fixed-guideway transit facilities.

Finally, certain projects in carbon monoxide and particulates nonattainment and maintenance areas must be assessed for expected localized concentrations ("hot spots") of carbon monoxide and particulates and for comparison to the natural ambient air quality standards.

REGIONALLY SIGNIFICANT PROJECTS: Regionally significant projects serve regional transportation needs such as access to and from the major activity centers in the region, and would normally be included in the modeling of a metropolitan area's transportation network. These projects include, at a minimum, all principal arterial highways and all fixed-guideway transit facilities.

How frequently must a transportation conformity determination be made and what happens if the MPO cannot make a conformity determination on time?

A conformity determination must be made on the transportation plan and TIP at least once every four years. Each time the MPO updates or amends its transportation plan or its TIP (except for administrative modifications), a conformity determination is required. A conformity determination is also required not more than 24 months after a SIP or a SIP revision is approved or found adequate by EPA.

What happens if the MPO cannot make a conformity determination on time?

If an MPO cannot make a conformity determination according to applicable deadlines, it will have a grace period of 12 months after the deadline is missed before conformity will lapse. During the grace period transportation projects from the previously conforming plan and TIP may continue to be eligible for funding. However, no changes may be made to those documents without re-establishing conformity. If conformity has not been re-established after the 12 month grace period, the transportation conformity status for the area goes into "lapse." During a conformity lapse, FTA and FHWA funds can only be spent on exempt projects, such as safety projects and certain public transportation projects, TCMs from an approved SIP, and project phases that were authorized by FHWA and FTA prior to the lapse.

What funding is available for air quality improvement programs and projects?

Many types of federal-aid funding may be used to improve air quality. One type of funding, the Congestion Mitigation and Air Quality Improvement (CMAQ) program funds, are designated specifically for this purpose. Under the CMAQ program, state DOTs receive funding based on the severity of pollution and their population in ozone and carbon monoxide nonattainment or maintenance areas though all states receive some funding. State DOTs and MPOs can use CMAQ funds for transportation projects that reduce emissions in nonattainment and maintenance areas.

CONFORMITY IN NON-METROPOLITAN AREAS: A number of non-metropolitan areas are also being included in the urban area designation or being designated by themselves. Generally, MPOs and the state DOT work cooperatively on the regional emissions analysis in areas that are included in an urban area designation. Isolated rural areas often lack professional air quality and transportation planning staff and may rely on the expertise of state DOT staff in addressing conformity issues.

What types of projects are funded by the CMAQ program?

CMAQ programs fund transportation projects that reduce emissions of ozone precursors, carbon monoxide, and particulate matter. Many projects also help to reduce congestion, which is another key goal of the program. Typical projects include support for transit, traffic flow improvements (including high-occupancy vehicle [HOV] lanes, intelligent transportation systems [ITS], and signal timing), shared ride and carpooling services, and diesel engine retrofits.

Who decides which projects receive CMAQ funding?

Decisions must be coordinated through the MPO planning process, and are made collaboratively by the state DOT and MPO subject to federal eligibility guidelines. These guidelines are quite flexible, in order to promote innovation.

Additional sources of information:

For basic information about transportation conformity, see **www.fhwa.dot.gov/environment/conform.htm**

For FHWA's Transportation Conformity Reference Guide, see **www.fhwa.dot.gov/environment/conformity**

For a basic explanation of CMAQ, policy guidance, and brochures about the CMAQ program, see **www.fhwa.dot.gov/environment/cmaqpgs**

For consumer-oriented tips from the U.S. Department of Energy on energy efficiency and renewable energy, see **www.eere.energy.gov/cleancities**

Congestion Management Process (CMP)

What is the CMP?

The congestion management process (CMP) is a way of systematically considering congestion-related issues using a set of technical tools, and basing evaluations on a discrete set of locally determined performance measures. A CMP provides for the systematic review of performance of multimodal transportation systems in larger metropolitan areas and identification of strategies to address congestion through the use of "management" strategies focused on both the use and operation of facilities and services.

What are the requirements for the CMP?

A CMP is required in metropolitan areas with a population greater than 200,000, or Transportation Management Areas (TMAs), as well as in urbanized areas that have requested designation as a TMA. The CMP is intended to address congestion through a process that provides for effective management and operations (M&O), based on cooperatively developed travel demand reduction and operational management strategies. Even if a metropolitan area is not a TMA or in nonattainment status, the CMP represents good practice in monitoring, assessing, and resolving congestion issues in any MPO. The CMP establishes a rigorous method of identifying and evaluating transportation improvement strategies, including both operations and capital projects.

How is the CMP valuable to the MPO?

A well-designed CMP should help the MPO to:

- Develop alternative strategies to mitigate congestion;
- Determine the cause of congestion;
- Identify congested locations;
- Evaluate the potential of different strategies;
- Evaluate the impacts of previously implemented strategies; and
- Propose alternative strategies that best address the causes and impacts of congestion.

Benefits of the CMP

The congestion management process helps MPOs and partner agencies achieve regional operations performance objectives, and can deliver a number of collateral

benefits as well. By addressing congestion through a comprehensive process, the CMP provides a framework for responding to congestion and other operational issues in a consistent, coordinated fashion.

The CMP enables MPOs and their operating agency partners to measure performance, manage data, and analyze alternative strategies in a systematic manner. The CMP also enables MPOs to base congestion management strategies on defined objectives; this process allows regions to focus on the most congested areas and achieve maximum benefit by targeting their investments.

How does Transportation Demand Management (TDM) relate to the CMP?

Transportation Demand Management (TDM) is any action or set of actions designed to influence the intensity, timing, and distribution of transportation demand, in order to reduce traffic congestion or enhance mobility. Such actions can include offering commuters alternative transportation modes or services, providing incentives to travel on these modes or at non-congested hours, providing opportunities to link or "chain" trips together, and incorporating growth management or traffic impact policies into local development decisions.

TDM strategies are part of the toolbox of actions available to transportation planners for solving transportation problems. As part of the congestion management process, TDM actions are among the strategies that can reduce congestion or enhance mobility.

Additional sources of information:

For more on the relationship between the congestion management process and planning, see **http://plan4operations.dot.gov/congestion.htm**

Financial Planning and Programming

What are the sources of transportation funds?

Transportation funds are generated from a number of sources, including income tax, sales tax, tolls, bonds, and state, local, and federal excise taxes on various fuels, state infrastructure banks (SIBs), and credit assistance sources. Each state decides which mix of funds is best suited to carry out particular projects.

Federal funds are authorized by Congress for the U.S. Department of Transportation (DOT), which allocates funds into various programs before redirecting those funds to the states. Some primary examples of these programs include the Surface Transportation Program (STP) (which includes enhancement and safety funds), the Federal Lands Highway Program and the Congestion Mitigation and Air Quality Improvement (CMAQ) Program. FTA oversees the allocation of federal transit funds, which generally fall into two major categories: capital grants for transit operators that are apportioned to areas by national formula, and transit capital investment grants that are awarded on a "discretionary" basis, as determined by DOT on the basis of a series of evaluation criteria. Each of these programs has specific eligibility requirements, although there is quite a bit of flexibility in legislation that allows funds to be shifted among some programs, or expands eligibility requirements (see Part I for more information).

Federal legislation also provides formula funds to support planning studies and report preparation for the transportation planning process through FHWA's State Planning and Research Funds (SPR) and Metropolitan Planning Funds (PL), and through FTA's Section 5305. These planning funds generally make up a large portion of the state or MPO budget for conducting necessary studies and for developing transportation plans, STIPs, TIPs and other planning documents.

What is financial planning?

Financial planning takes a long-range look at how transportation investments are funded, and at the possible sources of funds. State DOTs, MPOs, and public transportation operators must consider funding needs over both the 20-year period of the long-range transportation plan and the 4-year period of TIPs and STIPs. In the LRSTP and the MTP, state DOTs may and MPOs must develop a financial plan that identifies funding sources for needed investments, and demonstrates the reasonably reliable means to maintain and operate the existing federally funded transportation system.

What is financial programming?

Financial programming is different from financial planning because programming involves identifying fund sources and implementation timing for specific projects in the Statewide Transportation Improvement Program (STIP) and metropolitan Transportation Improvement Program (TIP), which must cover a period of at least four years and be updated at least every four years. Programming also includes notifying FHWA and FTA of the sources of the funds that will likely be used to support each individual transportation project.

How does financial planning support preparation of transportation plans?

"**Fiscal Contraint:** A demonstration of sufficient funds (federal, state, local, and private) to implement proposed transportation system improvements, as well as to operate and maintain the entire system, through the comparison of revenues and costs." Source: *Overview Of Current Practices In Revenue Forecasting And Cost Estimation For Transportation Plans And Programs.*

The metropolitan transportation plan, which has a 20-year planning horizon, must include a financial plan that estimates how much funding will be needed to implement recommended improvements, as well as operate and maintain the system as a whole, over the life of the plan. This includes information on how the MPO reasonably expects to fund the projects included in the plan, including anticipated revenues from FHWA and FTA, state government, regional or local sources, the private sector, and user charges. The metropolitan transportation plan must demonstrate that there is a balance between the expected revenue sources for transportation investments and the estimated costs of the projects and programs described in the plan. In other words, a metropolitan plan must be fiscally (or financially) constrained.

The long-range statewide plan, under federal requirements, may be a "strategic plan that may or may not contain a listing of recommended projects"; a financial plan is optional. The long-range statewide transportation plan may include some or all of the financial elements commonly found in a typical metropolitan transportation financial plan (as the state DOT finds appropriate or necessary.) It does not need to demonstrate fiscal constraint.

How do state DOTs, MPOs and public transportation operators know how much money is going to be available?

Proposed funding sources must be "reasonably" expected to be available. For example, if voters approved a sales tax increase three times in a row, anticipated funding from a future vote may be reasonable.

Federal surface transportation legislation requires that the MPO, the state DOT, and the public transit agency cooperatively develop revenue forecasts. These forecasts help agencies determine how much funding is likely to be available for transportation projects in their respective areas. Forecasts are based on trends from existing and potential funding sources such as the gas tax or bond measures.

A financial plan could assume that the amount of available federal funding will remain constant over the first five years of the plan, and then escalate at a rate equal to inflation or the Consumer Price Index (CPI). It could also assume that state gasoline taxes dedicated to transportation will be increased every five years by a certain amount based on past trends. Further, the transportation plan might assume

a new revenue source, such as a local sales tax within an MPO region; in such a case, the MPO must demonstrate that there is reason to believe such a new source will be available, and should identify strategies it can use to help achieve that goal.

Regardless of how financial assumptions and forecasts are developed, all forecasts in the financial plan must be shown in "year of expenditure" dollars based on reasonable inflation factors. In addition, the outer years of the financial plan may consist of ranges for both revenues and total project costs. As always, the high and low end of the ranges must be based on reasonable assumptions.

How are funds programmed?

Each state must submit a STIP to FHWA and FTA for review and approval at least every four years for review and approval. The STIP includes all the projects planned for implementation with the funds expected from FHWA and FTA for a four-year period, as well as all regionally significant projects which require action by FHWA or FTA or that are located in a nonattainment or maintenance area, regardless of the funding source. The STIP also includes each MPO's TIP, and all of the projects included in the first four years of that TIP. Both the STIP and the TIP must be fiscally constrained.

Programming a project for funding in the STIP

- Through an established process, the state solicits or identifies projects from rural, small urban, and urbanized areas of the state.
- The state selects projects for inclusion in the STIP based on adopted procedures and criteria.
- The STIP must be fiscally constrained; however, a financial plan is optional.
- The FHWA/FTA must approve the STIP before STIP projects can proceed to implementation.
- Amendments to the TIP can be common given the frequent changes in engineering practices, environmental issues, contracting issues, project readiness, and other factors that can require adjustments to project schedules and budgets.

Additional sources of information:

For a handy overview of the FHWA's activities, including a guide to the agency's programs, core business units, and service business units, see **www.fhwa.dot.gov/programs.html**

AMENDMENTS AND ADMINISTRATIVE MODIFICATIONS:
There are many factors that can require adjustments in transportation project schedules and budgets, such as changes in engineering practices, environmental issues, contracting issues, and project readiness. Thus, it is common to make revisions to the STIP or TIP; these revisions can include amendments or administrative modifications.

If an MPO wants to amend a project in its TIP, this will also necessitate amendment of the STIP. A major revision is an "amendment," while a minor revision is an "administrative modification." Amendments require public review and comment, demonstration of fiscal constraint (except for long-range statewide transportation plans), and a conformity determination (for metropolitan transportation plans and TIPs in non-attainment and maintenance areas)." Administrative modifications allow minor changes without such actions.

For useful links and information about all of FTA's funding programs and activities, see **www.fta.dot.gov/funding**

For a complete list of federally aided transportation programs, see **www.fhwa.dot.gov/federalaid/projects.cfm**

For a complete list of FHWA discretionary programs, see **www.fhwa.dot.gov/discretionary/proginfo.cfm**

For FHWA and FTA flexible funding guidance, see **www.fhwa.dot.gov/hep/flexfund.htm**

Freight Movement

What is the role of freight movement in transportation?

The movement of freight is an important part of a fully functioning transportation system. The efficient movement of freight within and through a region is critically important to industry, retail, agriculture, international trade, and terminal operators. Metropolitan areas (especially ports), with their air cargo airports, intermodal freight yards, large trucking terminals, and shipyards, are especially affected by freight movement issues.

Examples of intermodal freight projects include bridge replacements, road widening, port and rail access improvements, terminal facility enhancements, grade separations for highway and rail, and providing connections to air cargo and new infrastructure.

What is the role of the MPO and the state DOT in freight transportation planning?

The state DOT and the MPO are responsible for making sure that freight movement is considered in the transportation planning process. Federal legislation calls for the statewide and metropolitan planning processes to include reasonable opportunity for the public and interested parties, including specifically "freight shippers" and "providers of freight transportation services," to participate in the development of plans and programs.

Many state DOTs and MPOs have systematically incorporated freight movement issues into their planning activities, for example by:

- Defining those elements of a metropolitan area's transportation system that are critical for efficient movement of freight.
- Identifying ways to measure system performance in terms of freight movement.
- Developing freight-oriented data collection and modeling to identify problems and potential solutions.
- Creating freight movement advisory committees to identify important bottlenecks in the freight network.

What funding is available for freight planning and project implementation?

State DOTs and MPOs can use planning funds for freight planning, and can dedicate funds for specific project implementation. Funding of specific freight projects must

meet federal eligibility requirements for the specific funding source used. Projects that provide improved access to terminals or ports can be included in the federally funded transportation improvement program.

In those cases where freight investment projects can directly bring about reductions in pollutant emissions, Congestion Mitigation and Air Quality Improvement (CMAQ) program funds can also be used to support those projects.

What are some freight-transport tactics that transportation decisionmakers might consider?

- Truck restrictions (such as peak period bans, route diversions, noise ordinances, and hazardous materials route restrictions)
- Road design and construction (such as improved entry/exit ramps and merges, and capacity or safety improvements)
- Road pricing (such as peak period permits, freeway permits, and peak period tolls)
- Fleet management (such as automatic vehicle location/routing, voluntary off-peak operations, and driver training and management)
- Traffic engineering (such as lane design restrictions, wider lanes, variable message signs, and speed restrictions)
- Shipper/receiver actions (such as voluntary and mandatory off-peak operations)
- Incident management (such as automated detection and site and area surveillance/communications)
- Inspection/enforcement (such as automated surveillance, urban truck inspections/enforcement)
- Information management (such as highway advisory radio, traffic information)

Additional sources of information:

For FHWA's guide to freight planning, including guidelines, case studies, and a manual, see **www.fhwa.dot.gov/freightplanning**

For a guide to financing freight transportation improvements, see **www.ops.fhwa.dot.gov/freight/freight_analysis/financing.htm**

Land Use and Transportation

What is the relationship between land use and transportation?

Transportation's purpose is moving people and goods from one place to another, but transportation systems also affect community character, the natural and human environment, and economic development patterns. A transportation system can improve the economy, shape development patterns, and influence quality of life and the natural environment.

Land use and transportation are symbiotic: development density and location influence regional travel patterns, and, in turn, the degree of access provided by the transportation system can influence land use and development trends. Urban or community design can facilitate alternative travel modes. For example, a connected system of streets with higher residential densities and a mix of land uses can facilitate travel by foot, bicycle, and public transportation, in addition to automobile. Conversely, dispersed land development patterns may facilitate vehicular travel and reduce the viability of other travel modes.

What is the role of the state DOT and the MPO in land use and transportation?

The state DOT and MPO role and level of involvement in land use decisionmaking varies according to state and local legislation and policies. However, state DOTs and MPOs are responsible for consultation with state and local agencies responsible for land use management; comparing transportation planning efforts with land use plans, maps and inventories; and using current land use estimates and assumptions when updating planning products.

The metropolitan and statewide transportation planning processes are designed to promote consistency between transportation improvements and state and local planned growth and economic development patterns.

What are the requirements for considering land use and economic development in the transportation planning process?

Updates to long-range statewide and metropolitan transportation plans must be reviewed for validity and consistency with current and forecasted transportation and land use conditions and trends. The transportation plan updates should be based on the latest available estimates and assumptions for population, land use and development, travel, employment, congestion, and economic activity. And, to promote the highest level of consistency between land use and transportation plans, it is advisable for the planning staff responsible for that planning to hold meetings and share information on a continuing basis.

Activities intended to stimulate economic development can affect the transportation network, and, in turn, the transportation network can affect economic development. Transportation decisionmakers can ensure the continued economic vitality of the region, state, and nation by appropriately planning for the many different uses of the transportation system, such as freight movement.

Policymakers should ask what effects proposed investments would have on economic development and on future transportation needs:

- Can the transportation system accommodate the increased growth that proposed development might bring?
- How can transportation funding support economic growth while balancing other transportation priorities?

What are some innovative approaches for better integrating land use and transportation?

Increasing recognition of the importance of integrating land use and transportation has led to the development of new approaches in planning. Two of the many possibilities include context sensitive solutions (CSS) and Transit-Oriented Development (TOD).

What are context sensitive solutions (CSS)?

CSS is an approach that considers the total context within which a transportation improvement project will exist. A CSS approach requires that transportation planning take a broad view and consider the interactions between transportation systems and facilities, and tailor them to local area human and natural environments. The goal is to develop solutions that are acceptable to a variety of parties, relevant to their needs and perspectives—consistent with the "context" of the setting. CSS is a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility.

What are Transit-Oriented Development and joint development?

Transit-Oriented Development (TOD) is defined as compact, mixed-use development near transit facilities and high-quality walking environments, typically leveraging transit infrastructure to promote economic development. By enhancing the attractiveness of transportation alternatives, TOD boosts transit ridership and reduces traffic congestion, while creating a sense of community and place.

Joint Development is a project-specific application of TOD, taking place on, above, or adjacent to transit agency property. It involves the common use of property for transit and non-transit, typically private sector commercial, purposes. Typical joint develop-

ment arrangements are ground leases and operation-cost sharing, usually occurring at transit stations or terminals surrounded by a mix of office, commercial, and institutional land uses. To be eligible for federal funding, joint development projects must be related physically or functionally to public transportation, and must dedicate a fair share of the commercially derived revenue for public transportation.

Both TOD and joint development projects may be planned, designed, and implemented by local government, transit operators, Metropolitan Planning Organizations, and states.

What is the role of the MPO in Transit-Oriented Development and joint development?

All joint development and transit-oriented development projects with components involving federal funds must have those components approved by the MPO for inclusion in the metropolitan transportation plan and the fiscally constrained TIP and STIP. MPOs can play lead roles in developing and promoting transit-supportive land use policies, as well as disseminating information on these policies to the public and private sector. In addition, a growing number of MPOs have a TOD expert on staff and have policies and programs that support these projects.

Additional sources of information:

For FHWA's Planning Tools for Linking Land Use and Transportation, see **www.fhwa.dot.gov/planning/ppasg.htm**

"Transit-Oriented Development: State of the Practice, and Future Benefits; Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects" provides a comprehensive assessment of the state of the practice and the benefits of transit-oriented development (TOD) and joint development throughout the United States. TCRP H-27 TRB's Transit Cooperative Research Program (TCRP) Report 102 see **onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_102.pdf**

For FTA's overview of the TCRP study, "Transit-Oriented Development: State of the Practice, and Future Benefits; Transit-Oriented Development in the United States: Experiences, Challenges, and Prospects," see **www.fta.dot.gov/planning/programs/planning_environment_6932.html**

For "lessons learned" and successful practices in Transit-oriented Development, see **www.fta.dot.gov/documents/TOD_Lessons_Learned_12_21.pdf**

For information on how FTA grantees may use FTA financial assistance for joint development activities that incorporate private investment or enhance economic development, see **www.fta.dot.gov/planning/programs/planning_environment_6935.html**

Performance Measures

What are performance measures?

Performance measures demonstrate how well the transportation system is doing its job of meeting public goals and expectations of the transportation network. Some methods used to measure performance include tracking average speeds and crash rates. Many states and metropolitan areas monitor how close they are to achieving specific goals, such as accessibility to key regional population, employment, cultural, and recreational centers, the mobility of disadvantaged populations, levels of air quality, and the health of the economy, by using performance measures.

Measuring performance is a way to gauge the impacts of the decisionmaking process on the transportation system. Performance measures aim to answer questions about whether the performance of the transportation system (or economy, air quality, etc.) is getting better or worse over time; and whether transportation investments are correlated or linked to stated goals and outcomes.

Examples of performance measures include:

- Accessibility: Percent population within "x" minutes of "y" percent of employment sites; whether special populations such as the elderly are able to use transportation; whether transportation services provide access for underserved populations to employment sites; also, whether services are ADA compliant.
- Mobility: Average travel time from origin to destination; change in average travel time for specific origin-destination points; average trip length; percentage of trips per mode (known as mode split); time lost to congestion; transfer time between modes; percent on-time transit performance.
- Economic development: Jobs created and new housing starts in an area as a result of new transportation facilities; new businesses opening along major routes; percent of region's unemployed who cite lack of transportation as principal barrier to employment; economic cost of time lost to congestion.
- Quality of life: Environmental and resource consumption; tons of pollution generated; fuel consumption per vehicle mile traveled; decrease in wetlands; changes in air quality, land use, etc.
- Safety: Number of crash incidents or economic costs of crashes.

What is the role of the state DOT and MPO in defining and using performance measures?

Through the statewide and metropolitan transportation planning process, the state DOT and the MPO, respectively, can each take a leadership role in creating performance measures that provide information critical to regional and local decisionmakers. This can begin through interaction with stakeholders and the public for the purpose of identifying vision(s) of the community for its future, followed by translation of those visions into goals and measurable objectives. Then, performance measures are developed to use in tracking progress toward attainment of those goals.

Because performance measures strongly influence the goals and objectives of the planning process, their development and ongoing support can become part of ongoing planning activities. Development of transportation system performance measures should be coordinated with and informed by the public involvement program.

Additional sources of information:

For *A Guidebook for Performance-Based Transportation Planning,* NCHRP Report 446. Transportation Research Board: Washington, D.C., 2000
see **www.trb.org/TRBNet/ProjectDisplay.asp?ProjectID=901**

For Transportation Research Board's *Conference Proceedings #36, Performance Measures to Improve Transportation Systems,* 2004
see **onlinepubs.trb.org/onlinepubs/conf/CP36.pdf**

For Transportation Research Board's *Transportation Research Circular E-C073 – Performance Measure to Improve Transportation Planning Practice, 2005*
see **onlinepubs.trb.org/onlinepubs/circulars/ec073.pdf**

Planning and Environment Linkages

Why link transportation planning to environmental processes?

State and local agencies can achieve significant benefits by incorporating environmental and community values into transportation decisions early in planning and carrying these considerations through project development and delivery. Benefits include:

- *Relationship-building:* By enhancing inter-agency participation and coordination efforts and procedures, transportation planning agencies can establish more positive working relationships with resource agencies and the public.
- *Process efficiencies:* Improvements to inter-agency relationships may help to resolve differences on key issues as transportation programs and projects move from planning to design and implementation. Conducting some analysis at the planning stage can reduce duplication of work, leading to reductions in costs and time requirements, thus moving through the project development process faster and with fewer issues.
- *On-the-ground outcomes:* When transportation agencies conduct planning activities equipped with information about resource considerations and in coordination with resource agencies and the public, they are better able to

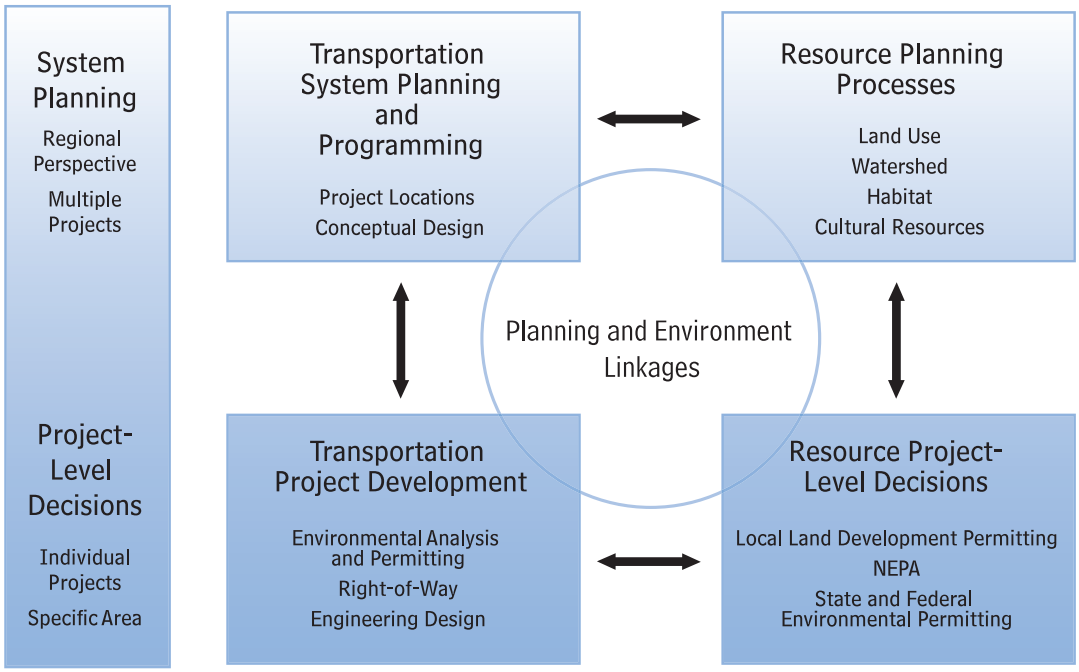

Figure 5: Planning and environmental linkages in decisionmaking processes are depicted by the arrows showing the relationship between transportation planning and environment planning, as well as the relationship between systems planning and project level decisions.

conceive transportation programs and projects that effectively serve the community's transportation needs. This can reduce negative impacts, and incorporates more effective environmental stewardship.

The first type concerns comparing transportation plans with natural and cultural resource information. For these comparisons, state DOTs and MPOs are to consult with state and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation. In addition, state DOTs must consult with tribal agencies. Consultations are to consist of the following, as appropriate:

- Comparison of transportation plans with state conservation plans or maps, if available; and
- Comparison of transportation plans to inventories of natural or historic resources, if available.

The second type of required consultation concerns mitigation activities. Federal law mandates that long-range transportation plans must include a discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan. This discussion is to be developed in consultation with federal, state, and tribal wildlife, land management, and regulatory agencies.

Sustainability and Transportation:

The concept of sustainability is accommodating the needs of the present population without compromising the ability of future generations to meet their own needs. As applied to the transportation sector, planning for sustainability can incorporate a variety of strategies to conserve natural resources (including use of clean fuels), encourage modes other than single-occupant vehicles, and promote travel reduction strategies.

Current trends in transportation contribute to unsustainable conditions, including greenhouse gas emissions, energy insecurity, congestion, and ecological impacts. Although widespread uncertainty exists about how to address the goal of a sustainable transportation system, transportation officials and stakeholders are now recognizing that their decisions have long-term implications and impacts and are working on how to prepare metropolitan and statewide transportation plans and programs accordingly. Attaining a sustainable transportation system will require action by the public sector, private companies, and individual citizens.

How is NEPA related to the transportation planning process?

The NEPA process is designed to promote environmentally sound transportation decisions and cannot be used as a justification for decisions already made. Therefore, a coordinated approach between planning and project development contributes to the selection of transportation investments that reflect community needs, have benefited from an active public involvement process and are sensitive to the environment. The first stages of the NEPA process—development of project purpose and need—should build upon the transportation needs identified during planning and will be the basis for the final selection of an alternative for design and construction.

Another direct link between NEPA and transportation planning is the requirement that a project be included in a conforming plan and TIP before it can be advanced; a major change in the project scope and design as it evolves during the NEPA process triggers a conformity and plan reassessment. In addition, other information gathered during the planning process can inform the project development studies required under NEPA. Data collection related to environmental features, analysis of projected transportation system usage, and attendant impacts on environmental quality can provide important information to the NEPA process.

How are transportation planning studies integrated into environmental and NEPA analysis?

FHWA and FTA must be able to stand behind the overall soundness and credibility of analysis conducted and decisions made during the transportation planning process if these decisions are incorporated into a NEPA document, directly or by reference. Transportation planning processes and their products are greatly improved when implemented through a comprehensive, cooperative, and continuous approach — the "3-C planning principles." The results of transportation studies or planning results should be: based on transportation planning factors established by federal law; reflected by a credible and clearly articulated planning rationale; founded in reliable data; and developed through planning processes that meet FHWA and FTA statutory and regulatory requirements.

At a minimum, a robust scoping and early coordination process (which explains to federal and state environmental, regulatory, and resource agencies and the public the information and analysis used to develop the planning products, how the purpose and need was developed and refined, and how the design concept and scope were determined) plays a critical role in leading to informed transportation decisions by FHWA and FTA on the suitability of transportation planning information, analysis, documents, and decisions for use in the NEPA process. Planning analysis needs to be up-to-date and should adequately support improvements in statewide and/or metropolitan long-range plans. Results from the planning process must be documented in a form that can be appended to the NEPA document or incorporated by reference to

materials that are readily available, and a clear connection between the decisions made in planning and those to be made during NEPA and project development must be explained to the public and other participants involved in scoping.

What is NEPA and how does it apply to the transportation project development process?

The National Environmental Policy Act of 1969 (NEPA) established a national policy to promote the protection of the environment in the actions and programs of federal agencies. The FHWA and FTA act as lead federal agencies, and are responsible for implementing the NEPA process and working with state and local project sponsors during transportation project development. The FHWA and FTA NEPA process is designed to assist transportation officials in making project decisions that balance engineering and transportation needs with the consideration of social, economic, and environmental factors. This process allows for involvement and input from the public, interest groups, resource agencies, and local governments. The FHWA and FTA NEPA process is used as an "umbrella" for compliance with over 40 environmental laws, regulations, and executive orders and provides an integrated approach to addressing impacts to the human and natural environment from transportation projects.

What NEPA documentation is required?

A good decision based on an understanding of environmental impacts is the objective of the NEPA process and a thorough analysis of these impacts as presented in the NEPA document is essential in meeting that objective. NEPA documentation serves several purposes: to disclose the analysis of benefits and impacts to the human and natural environment; to get input from the public and other stakeholders on the proposed project and the environmental consequences; and to inform the final decision.

Different types of transportation projects will have varying degrees of complexity and potential to affect the environment. Under NEPA, the required environmental document depends on the degree of impact. FHWA and FTA, in coordination with the project sponsor, prepare one or more of the following documents for a proposed project:

- Notice of Intent (NOI) – a notice that an environmental impact statement (EIS) will be prepared and considered.
- Categorical Exclusions (CE) – apply to projects that do not have a significant impact on the human and natural environment.
- Environmental Assessment (EA) – prepared for projects where it is not clearly known if there will be significant environmental impacts. If the analysis in the EA indicates the proposed project will have significant environmental impacts, an EIS is prepared.
- Finding of No Significant Impact (FONSI) – if there is not a significant impact, this conclusion is documented in a separate decision document, the FONSI.

- Environmental Impact Statement (EIS) – prepared for projects that have a significant impact on the human and natural environment. Draft EIS (DEIS) and Final EIS (FEIS) documents, with input from the public, provide a full description of the proposed project, the existing environment, and the analysis of the beneficial and adverse impacts of all reasonable alternatives.
- Record of Decision (ROD) – presents the selected transportation decision analyzed in an EIS, the basis for that decision, and the environmental commitments, if any, to mitigate project impacts to the human and natural environment.

Regardless of the type of NEPA document prepared, final selection or approval of a proposed project alternative by FHWA and FTA allows the project to be eligible for federal funding of subsequent project activities such as final design, right-of-way acquisition, and construction.

Additional sources of information:

FHWA's website on Planning and Environment Linkages offers a wealth of information developed and compiled by the FHWA and its partners to assist in strengthening planning and environment linkages.
See **www.environment.fhwa.dot.gov/integ/index.asp#benefits**

NEPA is dedicated to the open exchange of knowledge, information, and ideas concerning NEPA and other environmental issues. The site allows anyone interested in NEPA and related topics to contribute thoughts and ideas in an open forum.
See **nepa.fhwa.dot.gov/ReNepa/ReNepa.nsf/home**

The FHWA provides information on environmental streamlining — the term for a new cooperative approach to implementing transportation projects that brings together timely delivery and the protection and enhancement of the environment. It was first enacted into legislation for highway and transit projects with the Transportation Equity Act for the 21st Century (TEA-21).
See **www.environment.fhwa.dot.gov/strmlng**

The FTA provides links to laws, regulations, and guidance affecting environmental analysis and review of public transportation projects.
See **www.fta.dot.gov/planning/planning_environment_5222.html**

Public Involvement

What is the role of public involvement in developing transportation policies, programs, and projects?

Public involvement is integral to good transportation planning. Without meaningful public participation, there is a risk of making poor decisions, or decisions that have unintended negative consequences. With it, it is possible to make a lasting contribution to an area's quality of life. Public involvement is more than an agency requirement and more than a means of fulfilling a statutory obligation. Meaningful public participation is central to good decisionmaking.

The fundamental objective of public involvement programs is to ensure that the concerns and issues of everyone with a stake in transportation decisions are identified and addressed in the development of the policies, programs, and projects being proposed in their communities.

Who is the public?

The public includes anyone who resides, has an interest in, or does business in a given area potentially affected by transportation decisions. This includes both individuals and organized groups. It is also important to provide opportunities for the participation of all private and public providers of transportation services, including, but not limited to, the trucking and rail freight industries, rail passenger industry, taxicab operators, and all transit and paratransit service operators. Finally, those persons traditionally underserved by existing transportation systems, such as low-income or minority households (see section on Title VI/Environmental Justice) and the elderly, should be encouraged to participate in the transportation decisionmaking process.

Federal, state, and local agencies with an interest in transportation issues play a particularly important role in the development of transportation projects. Many of those agencies have a statutory responsibility to review environmental documents or issue permits for transportation projects. FHWA and FTA encourage MPOs and state DOTs to aggressively pursue improved communication and collaboration with these partners, beginning early in the transportation planning process, to identify and address their concerns.

PARATRANSIT:
A variety of smaller, often flexibly scheduled and routed transportation services using low-capacity vehicles, such as vans, which operate within normal urban transit corridors or rural areas. These services usually serve the needs of people that standard mass transit services would serve with difficulty, or not at all. Often, the patrons include the elderly and people with disabilities.

What is the role of the MPO in implementing public involvement processes?

The MPO is responsible for actively involving all affected parties in an open, cooperative, and collaborative process that provides meaningful opportunities to influence transportation decisions. Transportation has a profound influence on the

lives of people. Decisionmakers must consider fully the social, economic, and environmental consequences of their actions, and assure the public that transportation programs support adopted land use plans and community values.

MPOs must develop and document, in consultation with interested parties, a participation plan that details strategies for incorporating visualization techniques, using electronic media, holding public meetings, and responding to public input, among other things.

What is the role of the state Department of Transportation in the public participation process?

Similar to the role of MPOs in metropolitan areas, the state must have a documented process for engaging the public with the transportation planning process outside of metropolitan areas. The state DOT also should coordinate with MPOs for state projects within metropolitan areas.

What are the indicators of an effective public participation process?

A well-informed public can contribute meaningful input to transportation decisions through a broad array of involvement opportunities at all stages of decisionmaking. Useful elements in planning for effective public involvement are:

- Clearly defined purpose and objectives for initiating a public dialogue on transportation issues;
- Specific identification of the affected public and other stakeholder groups with respect to the plans and programs under development;
- Identification of techniques for engaging the public in the process;
- Notification procedures that effectively target affected groups;
- Methods and measures for evaluating the effectiveness of the public involvement program;
- Education and assistance techniques, which result in an accurate and full public understanding of transportation issues;
- Follow-through by the MPO demonstrating that decisionmakers seriously considered public input; and
- Solicitation of feedback from the public and stakeholders on the effectiveness of the public involvement process.

Additional sources of information:

The FHWA explores many transportation issues of great concern to the public, and provides more information to MPOs seeking guidance on involving the public. See **www.fhwa.dot.gov/environment/pubinv2.htm**

Public Involvement Techniques for Transportation Decision-making, FHWA and FTA, 1996, Publication No. FHWA-PD-96-031.

The FTA funds innovative demonstration projects through its Public Transportation Participation Pilot (PTP) Program. See **www.fta.dot.gov/planning/programs/planning_environment_5925.html**

For the Transportation Research Board's Public Involvement Committee website, see **www.trbpi.com**

For more TPCB Technical Public Involvement Resources, see **www.planning.dot.gov/technical.asp#pub**

For TPCB Peer program reports on current practices and issues in public involvement, see **www.planning.dot.gov/peer.asp#pi**

Safety

What makes safety an important factor in transportation planning?

Over the past three decades, transportation fatality rates have declined in relationship to system usage, due in large part to safer cars, tougher police enforcement, and increasing use of seat belts, air bags, and child safety seats. However, in many accident categories, the actual number of crashes has increased because more people are using the transportation system. In addition, there are large economic costs associated with crashes, incurred both by those involved and by other travelers affected by the traffic delay caused by crashes. Maintaining high performance in transportation safety requires seamless coordination of activities and funding among multiple partners and a transportation planning process that can coordinate and direct funding toward the highest safety priorities.

What are the roles of the MPO and state DOT in transportation safety?

Transportation planning takes safety considerations into account by identifying the most effective strategies for reducing crashes. This identification process may include analyzing crash data to determine the emphasis to be given to critical focus areas. Several types of focus areas have been identified, known as the 'four Es' of transportation safety: engineering, enforcement, education, and emergency services. The crash data might help identify which focus areas should receive funding priority for improving safety in the region. Crash data can also identify high-accident locations to be given high priority for improvements. Many MPOs also participate in safety campaigns that educate the public on good safety practices.

Another key role of MPO and state DOT planners is to coordinate any planned safety-related transportation improvements with their safety partners, including those responsible for the state's Strategic Highway Safety Plan, the state Governor's Office of Highway Safety, law enforcement agencies, and emergency service providers. Input from these partners can improve the safety elements of planning processes and ensure strong collaboration.

Finally, many state DOTs and local transportation agencies have developed safety management systems that monitor accident locations in their jurisdictions over time. The MPO can participate in data collection for these systems or coordinate the development of a regional safety management system.

State DOTs are required, after consultation with public and private safety stakeholders, to develop and implement a Strategic Highway Safety Plan (SHSP). The purpose of an SHSP is to identify critical highway safety problems and opportunities within the state. The SHSP provides a comprehensive framework for reducing highway fatalities and serious injuries on all major roadways, enabling the state to make strategic data-driven safety investment decisions. The metropolitan and statewide transportation planning processes should be consistent with the SHSP. In addition, the metropolitan and statewide transportation plans should include sections on safety that list projects and strategies from the SHSP.

What are the planning requirements for incorporating safety into transportation planning?

Improving the safety of the transportation system is one of the planning factors that federal legislation explicitly requires to be considered in the transportation planning process. Short- and long-range plans should have a safety element as part of the plan, and when projects and strategies are evaluated for possible inclusion in the metropolitan transportation plan and the TIP, safety should be a factor in their rating.

Additional sources of information:

The FHWA Office of Safety provides information on ways to improve safety on roadways. For more information, see **safety.fhwa.dot.gov**

For information from the FTA on safety and security of mass transit systems, see **transit-safety.volpe.dot.gov**

The FHWA, FTA, the Transportation Research Board, and other organizations created this website on transportation safety planning. See **tsp.trb.org**

For Bureau of Transportation Statistics (BTS) annual statistical reports on crash statistics, see **www.bts.gov**

For the Institute of Transportation Engineers' discussion paper, "The Development of the Safer Transportation Network Planning Process," see **www.ite.org**

The FHWA Office of Planning maintains a website on Transportation Safety Planning. See **www.fhwa.dot.gov/planning/SCP**

Security

What is transportation security?

Transportation system security can be defined as the freedom from intentional harm and tampering that affects both motorized and nonmotorized travelers, and may also include natural disasters. Security goes beyond safety and includes the planning to prevent, manage, or respond to threats of a region and its transportation system and users.

Why should states and MPOs consider security in the transportation planning process?

Awareness of both man-made and natural security concerns has increased in recent years due to events like September 11, 2001 and Hurricanes Katrina and Rita. The vulnerability of the transportation system and its use in emergency evacuations are issues receiving new attention. Transportation planners have been encouraged to focus on security interrelated issues and to initiate the consideration of security within their transportation planning and programming activities.

What is the role of the state DOT and the MPO in transportation security?

State DOTs and MPOs may be in a unique position to foster interagency coordination between the different modes of transportation, governmental agencies, groups focused on security, and others. State DOTs and regional transportation agencies have created homeland security plans for emergency evacuation, contingency measures, and communications interoperability. Additionally, state DOTs and MPOs can support programs and fund projects that enhance secure travel for all transportation system users. As the entities that plan and select projects for implementation, the state DOT and MPO can ensure that whatever criterion is used to select and advance projects in a particular region recognizes, highlights, and promotes projects that address transportation security.

What are the planning requirements for considering security in transportation planning?

Federal requirements include security as a factor to be considered in transportation planning processes at both the metropolitan and statewide levels, stating that the planning process should provide for consideration and implementation of projects, strategies, and services that will "increase the security of the transportation system for motorized and nonmotorized users."

How do you demonstrate consideration of security in the transportation planning process?

Consideration of security in the planning process may be documented in key planning documents such as the UPWP, the State Planning and Research Program, the long-range transportation plan, STIP or TIP or may be part of a standalone study. Federally funded or regionally significant transportation security should be included in the metropolitan long-range plan, STIP, or TIP. Other activities might include documenting conversations and coordination with groups focused on security or including transportation security as a project selection criterion.

Additional sources of information:

For "The Role of the Metropolitan Organization (MPO) in Preparing for Security Incidents and Transportation System Response" by Michael D. Meyer, Ph.D., P.E., see **www.planning.dot.gov/Documents/Securitypaper.htm**

For NCHRP: Report 525 Surface Transportation Security, Volume 3, Incorporating Security into the Transportation Planning Process, Transportation Research Board, see **onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_525v3.pdf**

For FHWA's Emergency Transportation Operations website, see **ops.fhwa.dot.gov/OpsSecurity/**

GAO Report 04-1009, "Homeland Security: Effective Regional Coordination Can Enhance Emergency Preparedness;" see **www.gao.gov/new.items/d041009.pdf**

Federal Transit Administration, The Public Transportation System Security and Emergency Preparedness Planning Guide (2003) see **transit-safety.volpe.dot.gov/Publications/Default.asp**

NCHRP 525, "Incorporating Security into the Transportation Planning Process;" see **trb.org/news/blurb_detail.asp?id=5028**

For "Security Considerations in Transportation Planning" from Steven Polzin at the University of South Florida's Center for Urban Transportation Research, see **www.cutr.usf.edu/pubs/Security%20paper%200402.doc**

System Management and Operations (M&O)

What is system management and operations?

System management and operations (M&O) analyzes regional transportation as an interconnected set of services and systems to improve system performance through better management and use of the multimodal transportation network.

M&O is an integrated approach to optimize the performance of existing infrastructure through the implementation of multimodal, intermodal, and often cross-jurisdictional systems, services and projects. This includes regional operations collaboration and coordination activities between transportation and public safety agencies. M&O strategies aim at improving service efficiency, enhancing public safety and security, reducing traveler delays, and improving access to information for travelers.

In identifying possible system M&O improvements, it is important to understand what system users want in terms of performance. Some examples of user-oriented performance measures are average trip travel time, length of delay, and reliability of trip making. These are important indicators of how well the transportation system is operating.

RELIABILITY OF TRIP MAKING: The level of reliability of the time it takes to make a specific trip; for example, one's daily commute, or the time it takes for goods to move between shipper and receiver.

What are the requirements for considering management and operations in the transportation planning process?

Federal requirements call for consideration of M&O in the metropolitan and statewide transportation planning processes. For instance, "Promote efficient system management and operation" is one planning factor.

Legislation also states that transportation plans shall include operations and management strategies to improve the performance of the existing transportation system to relieve vehicular congestion and maximize the mobility of people and goods.

What are some examples of system management and operations tools?

Intelligent Transportation Systems (ITS) are technological tools that can help to facilitate better system M&O. For example, roadway video surveillance allows better responses to changes in network conditions, such as clearing an accident faster to keep traffic moving. ITS technologies can also be used to collect real-time data, like travel speeds, which can be used to monitor system performance over time.

Other examples of system M&O tools include:

- Metropolitan traffic management centers;
- Traffic signal coordination;

- Freeway/arterial corridor management;
- Incident management programs;
- Preferential treatment for transit/ride-shares;
- Special event traffic management;
- Emergency management strategies;
- Pricing of transportation services;
- Customer information services;
- ITS applications for transit;
- Traveler information; and
- Commercial vehicle programs.

These M&O strategies and tools focus on optimizing the performance of the transportation system. It is essential to mention that M&O does not include traditional maintenance activities, such as lawn cutting, pothole repair, or resurfacing.

What is the role of the MPO in enhancing system management and operations?

Identifying M&O strategies and benefits: When developing the transportation plan, the MPO should consider using M&O strategies as one method of improving mobility for constituents. Those programs and projects should then be given high priority in the TIP.

Coordinating all agencies involved: Many different agencies assist in system management and operations in a typical metropolitan area. The MPO can provide regional leadership in establishing a decisionmaking framework by bringing parties together, by helping to determine how M&O decisions will be made in an area, and by asking for input on M&O issues as part of the planning process. This allows agencies to develop M&O strategies in common.

Develop performance measures: The MPO should develop system performance measures that take into account the desires and expectations of transportation users, and can be used to decide how funds should be spent. The MPO can then work to improve the system through future plans and TIPs.

What is the role of the state DOT in system management and operations?

Since states have the responsibility for operations and management of significant portions of the transportation network, they play a major role in considering

operations and management strategies in the planning process. State DOTs also have a major role both outside and within metropolitan areas supporting coordination between the operations and planning functions.

Additional sources of information:

For the FHWA and FTA Planning for Systems Management and Operation website, see **plan4operations.dot.gov**

For the FHWA's operations website, with information on travel management, transportation operations, freight management, and ITS, see **www.ops.fhwa.dot.gov**

For the U.S. Department of Transportation's official ITS site, see **www.its.dot.gov**

See also *A Toolbox for Alleviating Traffic Congestion and Enhancing Mobility.* Institute of Transportation Engineers: Washington, D.C.,1997.

See also Federal Highway Administration, *Managing Our Congested Streets and Highways,* U.S. DOT, 2001.

For more information from ITS America, a nonprofit organization that acts as a clearinghouse for information on ITS, see **www.itsa.org**

Technology Applications for Planning: Models, GIS, and Visualization

Better planning tools are increasingly available to help MPOs understand the impact of their decisions on the transportation network and the natural and human environment. A number of decision support tools are available to communities to help them tackle land use, community development, economic development, and environmental protection challenges. Geographic Information Systems (GIS)-based decision support and visualization tools assist planners with conveying information to stakeholders to encourage successful community design and informed decisionmaking. Examples of planning tools include transportation models, land use models, GIS, GIS-based decision support tools, scenario planning models, and satellite imagery.

What are models?

Models are simulations of the "real world" that can be used to show the impact of changes in a metropolitan area on the transportation system (such as adding a new road or transit line, or increases in population or employment). Travel models may be used to test the travel impacts of changes in land use, economic development, fuel and parking cost, and new highway or transit system capacity.

Three important ingredients are part of any model used for transportation analysis:

- Key base, or current-year characteristics of travelers and the transportation system, described in terms of quantifiable variables (e.g., the number of highway travel lanes, transit service highways, household size and income, number of vehicles per household, employment patterns by type and job classification, etc.).
- The relationship between these variables and the travel behavior of individuals (e.g., the more automobiles per household, the greater the number of automobile trips per household). This relationship is most often expressed in mathematical terms.
- Future-year forecasts of key traveler and transportation system characteristics. This relationship is the same for all individuals and is constant over time.

What is the four-step modeling process?

For the past 40 years, transportation professionals have used a four-step approach in modeling transportation demand. Most modeling approaches use some form of these

steps today. Once some understanding has been established as to what the land use, population, and employment levels are in a study area, the four modeling steps are:

- **Trip generation:** Estimating the number of trips generated in a small geographic area, called a zone, or at a particular location, and attracted to another zone or particular location, based on the assumed relationship among socioeconomic factors, land use characteristics, and the number of trips. Trip generation then leads to:
- **Trip distribution:** Estimating the number of trips that originate in every zone in the study area, with destinations to every other zone. The result is a trip table that is used in:
- **Mode split:** Estimating, for the number of trips predicted between each origin and destination, the number of trips made via each type of mode that is available for that trip. Thus, "x" percent are likely to drive alone, "y" percent are likely to take transit, "z" percent are likely to ride-share, etc. Mode split leads to:
- **Network assignment:** Estimating the number of trips via a particular mode that will take specific paths through a road or transit network. The end result, when all trips are assigned to a network, is an estimate of the total number of trips that will use each link in the network. When compared to the capacity of this link, planners can forecast the level of congestion that will occur at that location. This becomes the basis for assessing the performance of the transportation system.

What are other types of models?

Four-step models are commonly used to predict the demand for transportation services. Transportation planners and engineers also use other types of models to analyze and evaluate the performance of transportation systems and resulting impacts.

Land use models are used to forecast future development patterns as well as the potential for proposed transportation improvement to "induce" new or accelerated land development in particular areas. The output of land use models typically provides the input to the trip generation step of the travel forecasting model.

Emissions models use the output of travel forecasting models—simulated highway travel as expressed by vehicle miles traveled—in projecting the tons of key pollutants emitted in the exhaust of vehicular trips. Estimates of the tons of emissions of hydrocarbons, nitrogen oxides, and particulates from emissions models provide important information for use in air quality analysis.

Several metropolitan areas, such as New York, San Francisco, and Columbus, Ohio have implemented advanced tour or activity-based models, which model travel differently from trip-based models. Tour-based models, for instance, keep track of travel activity throughout the day and can assemble multiple trip legs (chained trips) into tours. For example, a parent may leave work, pick up the children at day care, and stop at the grocery store on the way home. These separate trips would be linked together into a tour and, when taken as a whole, the modeled travel behavior of this parent would likely be different than if all of these trips were considered separately.

An activity- or tour-based model is able to show the extent to which mixed-use neighborhood residents tend to reduce their automobile use by taking transit, walking, or bicycling, or accomplishing several activities in one automobile trip in cases where mixed-use development places retail, entertainment, and office locations close together. The modeling approach, more disaggregated in time, space, and activities, is also better suited to analyzing other complex policy alternatives such as variable pricing, flexible working hours, nonmotorized travel, and induced demand.

What should decisionmakers consider when presented with the results of models?

Results of a model are still only estimates—they cannot provide a definitive picture of what will happen in the future. Much like economic projections, transportation forecasts are greatly affected by the long-term economic health and attractiveness of the region, by population changes, and by the individual behavior of each person using the transportation system, which no one can predict.

Model results are only as good as the data that go into the model. MPOs must use the most current socioeconomic and census data available, especially if the region is growing rapidly. MPOs should make every effort to explain the information and assumptions that went into creating the model in plain, understandable terms. Finally, it is important that the models periodically be validated against observed conditions. And, the state, MPO, and transit operators should have a schedule for periodic re-survey of the usage and performance patterns of their systems (e.g. transit onboard and roadside origin/destination surveys).

What are visualization techniques, and how are they used in transportation planning?

Visualization techniques are methods used by states and MPOs to communicate information used in the development of transportation plans and programs to the

public, elected and appointed officials, and other stakeholders in a clear and easily accessible format. This could involve use of one or more of a broad range of information dissemination tools, including maps, pictures, or displays, with the intention of promoting improved understanding about existing or proposed transportation plans, policies, and programs.

Visualization techniques can be used through the process, including in developing planning documents, on websites, and at public outreach and information sessions. Through visual imagery, the complex character of proposed transportation plans, policies, and programs can be portrayed at appropriate scales and from different points of view, providing the public and decisionmakers with a clear idea of the proposals and likely impacts to the human and natural environment. In addition to their use in public involvement, visualization techniques are increasingly used as tools for improved decisionmaking for context sensitive solutions.

What is a Geographic Information System (GIS)? How can state DOTs, MPOs and public transportation providers use GIS during transportation planning?

A Geographic Information System (GIS) is a collection of computer software, hardware, and data used to store, manipulate, analyze, and present geographically referenced information. A GIS can be used both for analysis and as the basis for many of the visualization techniques described above. In transportation planning, GIS is typically used to compile and "overlay" multiple sets of data linked to particular geographic locations. Using GIS, transportation professionals can holistically and efficiently view multiple items of interest about a particular geographic area including transportation facilities, operations, demographics, environmental and cultural resources, public lands, and others. As an aid to environmental analysis, GISs are also used to overlay key features of the human and natural environment for the purpose of identifying corridors and subareas with the highest concentration of sensitive areas.

What is scenario planning and how does it use these technologies?

One use of models is in assessing the transportation impacts of alternative possible future policy scenarios. Scenario testing, also known as scenario planning, is an important policy analysis and public involvement tool for planners and involves undertaking long-range strategic planning studies testing alternative sets of future-year assumptions and engaging stakeholders and the public in reviewing the implications.

Instead of concentrating on one aspect of planning for the future, many tools used in scenario planning estimate the impacts of people's decisions today on the land use, transportation system, and environment of tomorrow. Additionally, these tools take into account the interconnections between these three aspects of planning. For example, if a change to the transportation system is proposed for an area, models can estimate its land

use and environmental impacts. Powerful tools provide for more comprehensive geographic analysis and visualization using interactive analysis tools and a decision-making framework. Scenario planning tools can be used to view, analyze, and understand land-use alternatives and their impacts for informed decisionmaking.

Additional sources of information:

Cambridge Systematics and Transmode Consultants, *Multimodal Corridor and Capacity Analysis Manual: National Cooperative Highway Research Program Report 399.* Transportation Research Board, 1998.

For the FHWA's Travel Model Improvement Program (TMIP) see **tmip.fhwa.dot.gov**

See also Meyer, M. and E. Miller, *Urban Transportation Planning: A Decision-Oriented Approach.* New York: McGraw Hill, 2001.

For NETC 00-6: *Effective Visualization Techniques for The Public Presentation Of Transportation Projects* see **www.netc.uconn.edu/pdf/netcr48_00-6.pdf**

For more on TRB's work on visualization in transportation see **www.trbvis.org/**

For AASHTO's *Visualization in Transportation: A Guide for Transportation Agencies* see **cms.transportation.org/sites/design/docs/VisualizationGuideJuly2003.pdf**

For TRB's Visualization Symposium Proceedings see **www.teachamerica.com/viz/viz2006.html**

For NCHRP's Visualization in Project Development see **onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_361.pdf**

For the Federal Highway Administration's (FHWA) Office of Planning, Environment, and Realty Executive Geographic Information System (HEPGIS) see **hepgis.fhwa.dot.gov**

Title VI/Environmental Justice

What is Title VI/Environmental Justice?

The goal of Title VI/Environmental Justice (EJ) is to ensure that services and benefits are fairly distributed to all people, regardless of race, national origin, or income, and that they have access to meaningful participation. Title VI/Environmental Justice in transportation programs is achieved through:

- Avoiding, minimizing, or mitigating disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and low-income populations.
- Ensuring the full and fair participation in the transportation decisionmaking process by all potentially affected communities.
- Preventing the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

What is the role of the state DOT and MPO in incorporating Title VI/Environmental Justice into transportation planning?

As the agency responsible for coordinating the transportation planning process, the state DOT or MPO must make sure that all segments of the population have been included in the planning process.

The impact of proposed transportation investments on underserved and under represented population groups must be part of the evaluation process. In particular, the following questions are important in addressing Title VI/Environmental Justice issues in the planning process:

1. How will the public participation process reach low-income and minority communities? Specifically:
   - How and where will information be disseminated?
   - What information will be disseminated?
   - Where and when will public meetings be held?
   - At what point in the planning process do the meetings take place?
   - Are other avenues being used to reach minority/low-income communities (e.g., contacts with community leadership, community advisory boards, focus groups, surveys, etc.)?

- How will the process elicit issues of particular concern to low-income and minority communities?

2. What statistics are being collected about minority/low-income communities, and how are they used to assess possible inequities? Actions to take include:
   - Evaluating what information is already being collected.
   - Identifying what further information can and should be collected.
   - Analyzing the data to identify potential inequities.
   - Developing measures to verify whether there is equitable distribution of the benefits and burdens of transportation services.
3. How are information and data incorporated into decisionmaking? Questions to ask include:
   - How is Title VI/Environmental Justice considered in creating the transportation plan?
   - How is Title VI/Environmental Justice information collected by the MPO and relayed to officials?
   - Is additional information needed to adequately consider the impacts of transportation decisions on low-income and minority communities?
   - How are the specific interests of minority and low-income populations addressed in transportation policies, plans, and projects?

What are the regulatory foundations for Title VI/Environmental Justice?

The legal foundation for environmental justice considerations is Title VI of the Civil Rights Act of 1964, which prohibits discrimination in any program receiving federal assistance.

The 1969 National Environmental Policy Act (NEPA) and 23 USC 109(h) also require that social, economic, and environmental consequences of programs be considered when contemplating any action having federal support.

The FHWA and the FTA have jointly issued policy guidance on how Title VI/Environmental Justice concerns can be incorporated into metropolitan transportation planning.

Additional sources of information:

For extensive information and case studies on Title VI/Environmental Justice, including the joint FHWA/FTA policy guidance on incorporating Title

VI/Environmental Justice concerns into metropolitan transportation planning see **www.fhwa.dot.gov/environment/ej2.htm**

For information on state DOTs responsibilities, general public responsibilities, frequently asked questions, and an environmental justice library see **www.dotcr.ost.dot.gov/asp/ej.asp**

For the Washington State Department of Transportation website which provides information on environmental justtice analysis tools, resources and training see **www.wsdot.wa.gov/Environment/EJ/EnviroJustice.htm**

Transportation Asset Management

What is Transportation Asset Management?

Transportation Asset Management is a strategic framework for making cost-effective decisions about allocating resources (funding and personnel) and managing infrastructure (physical assets such as roads, equipment, and buildings). It is based on a process of monitoring the physical condition of assets, predicting deterioration over time, and providing information on how to invest in order to maintain or enhance the performance of assets over their useful life. The goals of a transportation asset management program are to minimize the life-cycle costs for managing and maintaining transportation assets, including pavements, bridges, tunnels, rails, and roadside features.

What is the role of the MPO in Transportation Asset Management?

MPOs should ensure that 1) their metropolitan transportation plan is comprehensive and incorporates the transportation assets of all modes, 2) that the transportation network is managed to meet both current and future demands, and 3) that expenditures are optimized for value. Transportation asset management principles and techniques are valuable tools that can be applied by an MPO and result in more effective decision-making. The MPO role in a successful transportation asset management program includes managing public investment through the transportation plan and TIP, defining performance measures for assets through public involvement, serving as a repository for asset data, and promoting standard data collection and technology applications. MPOs can also educate the public and decisionmakers and work cooperatively with stakeholders across transportation modes.

The MPO can support asset management by encouraging the collection of data and information that helps establish priorities for improving the area's transportation assets. Typically, the MPO does not, on its own, develop and/or operate a transportation asset management decisionmaking framework; this is usually the responsibility of state and local operating agencies.

What are the steps decisionmakers use in the Transportation Asset Management process?

The following steps are typical for the Transportation Asset Management process:

1. Decisionmakers establish strategic goals and objectives for the transportation system's performance with performance measures being set and applied to establish a strategy to achieve the goals.

2. The transportation system is inventoried, and performance data is collected and analyzed. This information is used to determine what is needed.

3. Analytical tools and models are used to establish cost-effective long- and short-range strategies to maximize benefit to the motoring public for dollars invested to maximize condition at least life cycle cost to maintain and maximize system performance. Budget allocations are developed to meet performance expectations. The alternative choices are evaluated according to how well they meet long-range plans, policies, and goals.

4. Decisions are made as a result of policies, performance-based goals, performance measures, and service levels which address the agency's strategic goals and objectives. Decisionmakers need to take into account actual project development, construction, and operation.

5. The entire process is annually reevaluated.

What questions should transportation decisionmakers ask as part of the Transportation Asset Management process?

- What is our inventory of assets?
- What is the value of our assets (monetary, importance to region, other)? What are their functions? What services do they provide?
- What are the past, current, and anticipated conditions and performance of our assets?
- How can we preserve, maintain, or improve our assets to ensure maximum useful life and provide acceptable service to the public?
- What financial resources are available? What is the budget? How much funding can we expect in the future?
- What are our choices for investing our transportation budget? What are the costs and benefits of such choices?
- Which choice, or combination of choices, is optimal?
- What are the consequences of not maintaining our assets? How can we communicate those consequences?

Additional sources of information:

Asset Management: Advancing the State of the Art into the 21st Century Through Public-Private Dialogue, FHWA, Report No. FHWA-RD-97-046. For information on obtaining a copy of this report, see **www.fhwa.dot.gov/pubstats.html**

U.S. Department of Transportation

Federal Highway Administration

Program Review

Federal Highway Administration

Federal Transit Administration

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

FINAL REPORT

July 24, 2015

U.S. Department of Transportation
Federal Highway Administration

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U.S. Department of Transportation
Federal Highway Administration

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 Metropolitan Planning Organization (DCHC 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 Thursday, May 21, 2015, and an on-site review that was conducted on May 21 – 22, 2015. In addition to the formal review, routine oversight, such as 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. The review identified six commendations and six recommendations. No corrective actions were issued.

Findings

The Federal Review team identified the following commendations and recommendations:

Commendations:

- **The DCHC MPO is commended for the development of customized web application for the online management of transportation funding and projects. Among other things, the application is an E-TIP database, developed with input from the North Carolina Department of Transportation (NCDOT) and may become the prototype for NCDOT's electronic Statewide Transportation Improvement Program (STIP).**
- **The DCHC MPO's new interactive website allows easy access to all plans and programs and the new online funding database application. The DCHC MPO has started interactive mapping on their website as well. This includes travel time, traffic counts, urban canvas and land use and ARC GIS online.**

- **The DCHC MPO's coordination with the transit operators is outstanding. The transit operators spoke about how fortunate they are to be in the DCHC MPO. They have staff conversations with the DCHC MPO and feel their voices are being heard. The addition of the transit representation on the MPO board did not create a significant difference because the relationship was already good. Overall, the DCHC MPO does an excellent job of including the transit operators/providers in all areas of the planning process.**

- **The Triangle J Council of Governments has done an outstanding job as the regional coordinator for the Triangle Area transportation conformity process. The Triangle Area transportation partners are also to be commended for their communication, responsiveness, and timely completion of projects tasks. The Triangle Area transportation conformity process is a model for how this process should work in North Carolina.**

- **The recently completed Environmental Justice (EJ) Report is an extremely well-written and comprehensive document that will provide a solid foundation for the DCHC MPO as it moves forward with addressing EJ concerns and conducting EJ analyses.**

- **The DCHC MPO and NCDOT are commended on increased cooperation and coordination in project selection.**

Recommendations:

- **It is recommended that the 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 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).**

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

- **It is recommended that the DCHC MPO separately identify African Americans since they are the largest EJ population and racial minority within the DCHC MPO boundary. As a best practice, the DCHC MPO may also want to present the**

individual raw data for each racial minority within the DCHC 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.

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

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

- **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.**

Certification

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 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 series of discussions on a variety of transportation planning topics with State and local transportation officials directly involved in the highway and transit planning activities of the MPO. The Review, which was held at the City of Durham's City Hall, included a public involvement meeting on Thursday, May 21, 2013, to provide the public an opportunity to offer comments on the MPO's metropolitan transportation planning process. Several individuals, including two members of the MPO's policy board, attended and provided comments. This report contains the findings of the Review Team.

Scope

Pursuant to 23 U.S.C.(i)(5) and 49 U.S.C.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 greater than 200,000, as defined by the United States Census Bureau. Certification reviews generally consist of three primary activities: 1) an on-site visit; 2 review of planning products, both prior to, and during the Review; 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 in the conduct of the Continuing, Cooperative, and Comprehensive (3C) metropolitan 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.

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 Thursday and Friday, May 21 - 22, 2015. 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 DCHC MPO staff worked with FHWA staff to develop a schedule for the Certification Review process that was compatible with ongoing workloads and the meeting schedules for the MPO's Technical Committee (TC) and MPO Board. A desk audit of the DCHC MPO's planning documents was conducted prior to the on-site review. Responses to pertinent questions were provided and reviewed in advance of the on-site review. Advertisements for the certification review were posted in newspaper and public service announcement outlets (see Attachment C). 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, current 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.

Current Status – Defines what the Transportation Management Area (TMA) is currently doing with regard to 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 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.

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. George Hoops, Planning and Program Development Manager, NC Division
- Mr. Donnie Brew, Environmental Program Coordinator, FHWA, NC Division
- Mr. Eddie Dancausse, Air Quality Specialist, FHWA, NC Division
- Ms. Lynise DeVance, Civil Rights Program Manager, FHWA, NC Division
- Mr. Joe Geigle, Congestion Management Engineer, FHWA, NC Division
- Ms. Tajsha LaShore, Community Planner, FTA, Region 4

Other participants consisted of staff from the DCHC MPO, the City of Durham, the Town of Chapel Hill, and the North Carolina Department of Transportation (NCDOT), including:

- Mr. Felix Nwoko, DCHC MPO
- Ms. Lindsay Smart, DCHC MPO
- Ms. Meg Scully, DCHC MPO
- Mr. Kosok Chae, DCHC MPO
- Mr. Andy Henry, DCHC MPO
- Mr. Durmus Cesar, DCHC MPO

- Mr. Dale McKeel, DCHC MPO
- Mr. David Bonk, Town of Chapel Hill
- Ms. Julie Bollinger, NCDOT Transportation Planning Branch
- Mr. Mike Stanley, NCDOT Statewide Transportation Improvement Program (STIP) Unit
- Mr. Ed Lewis, NCDOT Division 7
- Mr. Geoffrey Greer, Go Triangle
- Mr. Tom Altieri, Orange County Planning
- Mr. Mark Ahrendsen, Department of Transportation, City of Durham
- Ms. Ellen Beckman, Department of Transportation, City of Durham
- Mr. Darius Sturdivant, NCDOT Division 8

Findings from Previous Certification Review (2011)

The previous certification review for the DCHC MPO was issued on July 24, 2011. It contained the recommendations and corrective actions listed below. All have been satisfied and no longer apply.

Public Involvement Corrective Action:

- The DCHC MPO is strongly recommended to expand information to include non-English speaking populations and conduct four-factor analysis for Limited English Proficiency (LEP) as part of the EJ section in the PIP.

Consultation and Coordination Recommendations:

- It is strongly recommended that NCDOT have fuller participation in the certification review process.

- It is recommended that the DCHC MPO incorporate Raleigh-Durham International Airport (RDU) and other inactive Technical Coordinating Committee (TCC) members.

- It is recommended that the DCHC MPO consider getting on the same certification review schedule as the Capital Area Metropolitan Planning Organization (CAMPO).

Metropolitan Transportation Plan (MTP) Recommendation:

- It is recommended that NCDOT provide more transparent and frequent communication on financial matters on subjects such Year of Expenditure (YOE) and State Planning and Research (SPR) funds taken out of the Unified Planning Work Program (UPWP).

Transportation Improvement Program (TIP)/Statewide Transportation Improvement Program (STIP) Recommendation:

- It is recommended that the DCHC MPO explore the potential for an electronic TIP.

Air Quality Recommendations:

- It is recommended that the DCHC MPO complete the transportation conformity process on the 2035 Metropolitan Transportation Plan (MTP) amendments and the FY 2012-2018 TIP by October 1, 2011.
- It is recommended that the DCHC MPO maintain a focus on the work and task deadlines associated with the 2040 MTP update along with the transportation conformity process to ensure completion by June 15, 2013.

Transit Recommendations:

- It is recommended that the DCHC MPO continue to work closely with CAMPO and the Triangle Transit Authority (TTA) to collectively promote regional TTA New Start planning for the Wake County – Durham – Orange and Durham – Wake County transit corridors.
- It is recommended that the DCHC MPO work with NCDOT to improve communication with respect to FTA funds availability and institute efficient and mutually viable STIP modification and amendment processes to streamline the extraordinarily long period currently required to implement programming changes, and to counter the reactionary posture currently experienced by the MPO with respect to TIP/STIP development.
- It is recommended that NCDOT adopt a streamlined process for administrative modifications for transit.

Operations and Management Recommendation:

- It is recommended that the DCHC MPO adopt a Safety Plan within one year of the Certification Review.

General Comments

At the beginning of the review, the review team briefly discussed the Moving Ahead for Progress in the 21st Century Act (MAP-21) legislation with DCHC MPO staff, including its themes of job creation, economic growth, safety, reduction in funding categories, and project streamlining.

The requirement for MPOs to conduct performance management through structuring their plans to help support and achieve the seven national goals in MAP-21 was also discussed.

Subsequent to this discussion, there was a 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. The MPO staff and NCDOT offered a number of comments and observations during the review, including:

- The NCDOT and the DCHC MPO stated that they are working in a more cooperative manner than in previous years in the transportation planning process.
- The DCHC MPO staff would like to know as soon as possible what specific performance based planning requirements will be required per the MAP-21 legislation.

DCHC Metropolitan Planning Organization (MPO) Background

Current Status

The DCHC MPO manages the metropolitan transportation planning process required by Federal law. The DCHC MPO plans for the area's surface transportation needs, including highways, transit, bicycle, and pedestrian facilities. The priorities of the DCHC MPO 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 DCHC 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 DCHC 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 DCHC MPO designation has not changed since the initial designation by the Governor. In March 2014, the MOU was updated by the MPO Board and GoTriangle (formerly Triangle Transit Authority) became a voting member of the MPO Board. No proposed changes to the MOU are envisioned at this time.

The MPO Board is the MPO's Policy Board. The MPO 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 the policy boards of its member agencies. The MPO 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 DCHC 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. All TC and TAC meetings are open to the public.

The MPO Lead Planning Agency (LPA) serves as staff to the MPO. The MPO LPA is housed in the City of Durham's Department of Transportation, located in City Hall in Durham.

Metropolitan Planning Area (MPA) Boundary/Census

Regulation: 23 CFR 450.312(a):

The boundaries of a metropolitan planning area (MPA) shall be determined by agreement between the MPO and the Governor. At a minimum, the MPO boundaries shall encompass the entire existing urbanized area (as defined by the Bureau of the Census) plus the contiguous area expected to become urbanized within a 20-year forecast period for the metropolitan transportation plan.

Regulation: 23 CFR 450.314(a) and (d):

The MPO, the State, and the public transportation operator(s) shall cooperatively determine their mutual responsibilities in carrying out the metropolitan transportation planning process. The responsibilities shall be clearly identified in a written agreement among the MPO, the State(s) and public transportation operator(s) serving the MPO, and if more than one MPO has been designated to serve an urbanized area, there shall be a written agreement among the MPOs, the State(s), and the public transportation operator(s) describing how the metropolitan transportation

planning process will be coordinated to assure development consistent with metropolitan transportation plans and Transportation Improvement Programs (TIPs) across the MPO boundaries, particularly in cases in which a proposed transportation investment extends across the boundaries of more than one MPA. If any part of the urbanized area is a nonattainment or maintenance area, the agreement shall also include State and local air quality agencies.

Regulation: 23 CFR 450.321 (a):

The boundaries of a metropolitan planning area (MPA) shall be determined by agreement between the MPO and the Governor. At a minimum, the MPO boundaries shall encompass the entire existing urbanized area (as defined by the Bureau of the Census) plus the contiguous area expected to become urbanized within a 20-year forecast period for the metropolitan transportation plan.

Current Status

The DCHC MPO's Metropolitan Planning Area boundary (MPA), based on the 2010 United States Census, was adopted by the DCHC 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 DCHC MPO Board.

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

Possible future DCHC MPO MPA expansions include Pittsboro in Chatham County to the south. 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 DCHC MPO MPA.

Cooperative agreements have been established between the State DOT, the MPO, public transit operators, and the North Carolina Department of Environment and Natural Resources (DENR). 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 Lead Planning Agency (LPA), and between the LPA and sub-recipients.

Unified Planning Work Program (UPWP) Development/Regional Planning Agreements

Regulation: 23 CFR 450.308 and 23 CFR 420.111:

This sets forth requirements for each MPO, in cooperation with the State and public transportation operators, to develop a Unified Planning Work Program (UPWP) that documents planning activities, products, funding, roles, responsibilities, and a timeline for the completion of each activity.

Current Status

The DCHC 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. Therefore, UPWP emphasis areas include the DCHC MPO's vision and goals for a balanced and multi-modal transportation system, including proactive public outreach and dissemination, integration of land use in transportation planning involving low income and minority populations, and consideration of safety and security and environmental and air quality factors, etc.

The UPWP development process usually begins in late fall or early winter each year. The member jurisdictions of the DCHC MPO, transit agencies, and NCDOT are encouraged to identify projects, studies, or work tasks that need to be included in the UPWP for the upcoming fiscal year. The NCDOT Transportation Planning Branch (TPB) and Public Transportation Division (PTD) calculate and inform the DCHC 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 in developing a budget for the DCHC MPO staff to pay staff salaries and benefits, plus operations charges. Reporting and invoicing narratives are submitted to NCDOT by task code. The budget is then utilized to identify in general 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. Once the draft UPWP has been reviewed by the member jurisdictions in the DCHC MPO, it is sent electronically to NCDOT's Transportation Planning Branch and Public Transportation Division for review and comment. Any comments or changes are then incorporated into the draft UPWP, and a final UPWP is developed, reviewed, and approved by the TC and Board, usually in May. Prior to Board approval, a public hearing is held. A final letter of approval is then provided to the DCHC MPO by NCDOT by June.

UPWP activities are developed, selected, and prioritized with the input of the DCHC MPO member jurisdictions. 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.

NCDOT and transit operators are involved from the onset of the UPWP development through subcommittee meetings and the DCHC MPO Technical Committee meetings. Their involvement in the development of emphasis areas supports and adheres to Federal requirements and meets the DCHC MPO's MTP and other planning objectives. UPWP activities are developed, selected, and prioritized through cooperative efforts of the MPO member agencies based on the approved Prospectus. The TC serves as a consultative forum for discussion of responsibilities and the planning work program more generally. The DCHC MPO staff usually take the lead in the development of the MTP, TIP, UPWP, etc., and studies and work items on behalf of the MPO.

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.

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 as needed basis.

Commendation:

- **The DCHC MPO is commended for the development of customized web application for the online management of transportation funding and projects. Among other things, the application is an E-TIP database, developed with input from the North Carolina Department of Transportation (NCDOT) and may become the prototype for NCDOT's electronic Statewide Transportation Improvement Program (STIP).**

Public Transit Planning

Regulation: 49 USC 5303:

It is in the interest of the United States, including its economic interest, to foster the development and revitalization of public transportation systems, in acquiring, constructing, supervising, or inspecting equipment or a facility for use in public transportation, and to encourage and promote

the safe and efficient management, operation, and development of surface transportation systems that will serve the mobility needs of people and freight and foster economic growth and development within and between States and urbanized areas, while minimizing transportation-related fuel consumption and air pollution through metropolitan and statewide transportation planning processes.

Current Status

The DCHC MPO has four transit operators: 1) GoTriangle (formerly Triangle Transit Authority (TTA)); 2) Go Durham (formerly Durham Area Transit Authority (DATA)); 3) Chapel Hill Transit (CHT); and 4) Orange Public Transportation (OPT), which is new to the MPO. 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 major employers in urban environments to low-density retail and social services. The current ridership is majority lower-income and African-American, though these demographics have become more diverse in the past three years. GoTriangle provides regional transit connections between origins and destinations in Durham, Orange, and Wake Counties. Most current bus routes provide peak-hour commuter connections to large employment destinations such as UNC-Chapel Hill, Duke University, 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. The current 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 productive routes in the system. There are also a number of 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.

Routes that serve several key destinations in a single corridor have the highest 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 also generate high ridership. Ridership tends to be lower as routes move farther from the urban core.

GoTriangle has a total of 229 full-time employees and 30 part-time employees. GoTriangle operates 27 routes, 20 of which are directly operated by GoTriangle and the remainder of which 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 located 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.

GoTriangle is governed by a thirteen-member Board of Trustees. Ten members are appointed by the region's municipalities and counties, and three members are appointed by the NC Secretary of Transportation.

The DCHC MPO goal for the Transportation Improvement Program notes the DCHC 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 DCHC MPO's longstanding policy to direct Surface Transportation Program – Direct Allocation (STP-DA) and Transportation Alternatives Program (TAP) funds to non-highway projects, such as transit. Congestion Mitigation and Air Quality (CMAQ) funding is also made available to transit on equal terms with other modes. In addition, the DCHC MPO has worked closely to develop performance metrics for the region's transportation system that emphasize the importance of person-throughput, as opposed to vehicle Level of Service (LOS), and other measures that prioritize personal mobility over vehicular mobility. For example, the DCHC MPO's Mobility Report Card, currently in draft form, provides measures of the number of passengers carried by different modes on certain key roadways in the region.

The DCHC MPO also has a strong record on emphasizing Environmental Justice (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 DCHC MPO and GoTriangle planning staff have collaborated closely on major corridor projects as well as local and state funding for other transit projects. In addition, DCHC MPO staff have helped coordinate major transit initiatives such as the region wide, multi-agency procurement of fare boxes.

The DCHC MPO, through its policies and programs, is well equipped to think about planning factors for any type of project that comes in the door, including GoTriangle's transit projects. DCHC MPO coordination with NCDOT has improved significantly since the last certification review. The transit operators and the DCHC MPO have a great relationship; they involve them on all planning levels including the TIP and STIP, UPWP, MTP, etc.

GoDurham is a division of Durham City Government, and is represented on the MPO Board by the elected representatives of the City of Durham. Beginning in 2014, per the MPO membership requirements established by section 1201(a) of MAP-21, GoTriangle is represented by a voting representative on the MPO Board.

The DCHC MPO boundary expanded to include sections of Orange County. Orange Public Transportation has started the new grantee process with FTA to become a direct recipient of FTA

funding. Similar to GoDurham, Orange Public Transit is represented on the DCHC 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 DCHC MPO is an excellent partner in helping find funding for transit projects, but these restrictions make funding for transit projects a challenge.

Bus capital replacement under MAP-21 is a central challenge to GoTriangle's maintenance of current 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 take funds intended to be spent on service expansions in this growing region, including dedicated sales tax revenues recently approved by local voters, and instead re-appropriate them to support capital replacement.

Commendations:

- **The DCHC MPO's new interactive website allows easy access to all plans and programs and the new online funding database application. The DCHC MPO has started interactive mapping on their website as well. This includes travel time, traffic counts, urban canvas and land use and ARC GIS online.**

- **The DCHC MPO's coordination with the transit operators is outstanding. The transit operators spoke about how fortunate they are to be in the DCHC MPO. They have staff conversations with the MPO and feel their voices are being heard. The addition of the transit representation on the DCHC MPO board did not create a significant difference because the relationship was already good. Overall, the DCHC MPO does an excellent job of including the transit operators/providers in all areas of the planning process.**

Air Quality

Regulation: 23 CFR 450.322(l):

In nonattainment and maintenance areas for transportation-related pollutants, the MPO, as well as the FHWA and the FTA, must make a conformity determination on any updated or amended transportation plan in accordance with the Clean Air Act and the Environmental Protection Agency (EPA) transportation conformity regulations (40 CFR Part 93).

Regulation: 23 CFR 450.322(e):

The MPO, the State(s), and the public transportation operator(s) shall validate data utilized in preparing other existing modal plans for providing input to the transportation plan.

Current Status

The DCHC MPO currently has a conforming 2040 MTP and a FY 2012 – 2018 TIP. The current United States Department of Transportation (USDOT) transportation conformity determinations were made on the DCHC MPO 2040 MTP and the FY 2012 – 2018 TIP on July 14, 2013.

The transportation conformity work for the DCHC MPO 2040 MTP amendment and the Fiscal Year (FY) 2016 – 2025 TIP is currently underway. The Triangle Area had an Interagency Consultation (IC) meeting that focused on the 2040 MTP amendments, the FY 2016 – 2025 TIP, the transportation conformity schedule, and tasks to be performed by Triangle Area MPOs and the IC agency partners. The DCHC Board is expected to endorse the 2040 MTP amendments, the FY 2016 – 2025 TIP, and the associated transportation conformity determination on September 9, 2015.

The Triangle Area (Durham and Wake County) is under a limited maintenance plan for Carbon Monoxide (CO). CO is currently the only National Ambient Air Quality Standard (NAAQS) that is applicable to this area. The CO maintenance plan for the Triangle Area ends on September 18, 2015. The Triangle Area will become attainment for the CO standard and transportation conformity will no longer be required unless the area is designated in the future for a new NAAQS.

Commendation:

- **The Triangle J Council of Governments has done an outstanding job as the regional coordinator for the Triangle Area transportation conformity process. The Triangle Area transportation partners are also to be commended for their communication, responsiveness, and timely completion of projects tasks. The Triangle Area transportation conformity process is a model for how this process should work in North Carolina.**

Recommendation:

- **It is recommended that the 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 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).

Metropolitan Transportation Plan (MTP)/Planning Factors

Regulation: 23 CFR 450.322 and 306:

This regulation requires development of a transportation plan addressing no less than a 20-year planning horizon. The transportation plan shall include both long-range and short-range strategies/actions that lead to the development of an integrated multimodal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand. The metropolitan transportation planning process shall be continuous, cooperative, and comprehensive, and provide for consideration and implementation of projects, strategies, and services that will address the eight (8) planning factors.

Current Status

The planning factors are addressed explicitly and implicitly in the DCHC MPO's MTP, TIP, and UPWP. 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, regional incident management initiatives, etc. 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 DCHC MPO, NCDOT, and transit operators practice a very participatory and cooperative 3C planning process and the DCHC MPO actually won an award for modeling regional and state cooperation and coordination.

Over 25 percent of MTP highway investment is for maintenance and upgrading facilities. The highway element of the MTP includes few new facilities, but focuses more on widenings, intersection improvements, and wide outside lanes. 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. One of the notable features of the regional model is inclusion of a non-motorized trip element. Pedestrian and bicycle facilities are an integral part of the MPO's goal of linking transportation and health issues. Due to the demographic statistics of the MPO's population, with relatively large numbers of students and persons over 65 years of age, sidewalk, bicycle, and transit projects figure prominently in the MPO's overall transportation initiatives and investment.

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 participates in the monthly Statewide Interagency Consultation Meetings (SICM) air quality coordinating meetings, and the MPO meets with resource agencies to apprise them of assumptions and alternatives being evaluated in the MTP process.

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 for them over the horizon year timeframe.

The metropolitan transportation planning factors are incorporated into the products of the process, and serve as a basis for criterion used for identifying projects in the MTP and TIP. The UPWP contains tasks that include collection of data and analysis.

The MTP is supported by a comprehensive and inclusive public involvement effort. The public involvement process complies with Title VI and the Executive Order on Environmental Justice.

The MTP is coordinated with the Triangle Regional Model for purposes of Air Quality Conformity. Demographic, socioeconomic, and land use data are inputted into the Triangle Regional Model, a travel demand forecasting tool for the region. These data are also useful in assessing trip generation and modal choice models.

TIP projects are ranked and prioritized by the DCHC MPO 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 for inclusion in the Strategic Prioritization on Transportation (SPOT) for the 5 and 10-Year Work Program, which includes the TIP.

With the adoption of the Complete Streets policy by the North Carolina Board of Transportation (BOT) and the incorporation of bicycle and pedestrian accommodations in the road cross-sections, all projects other than freeways now have a multi-modal cross-section.

Public involvement is incorporated in the development of the MTP via the following means: 1) implementation of the Public Involvement Plan; 2) public notices via email, posters at public sites and on buses, and the MPO website; 3) public meetings at transit accessible sites; and 4) documents available at public sites. The MPO provides early, proactive, and meaningful public engagement during various stages of the MTP development.

NCDOT's Transportation Planning Branch; its Division 5, 7, and 8 Offices; and the DCHC MPO's transit operators are involved in the evaluation of the existing MTP, and in updating the plans and projects.

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.

DCHC MPO staff coordinates closely with their NCDOT Transportation Planning Branch (TPB) coordinator, and communicates with other NCDOT departments including Program Development and the Public Transportation Division.

Land Use and Livability

The DCHC MPO strives to integrate land use and transportation planning in a variety of ways. 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 MTP includes an extensive Bicycle and Pedestrian section. The DCHC MPO also designates a percentage of federal funding at the MPO level for bicycle and pedestrian projects. They submit bicycle/pedestrian projects through the Strategic Prioritization on Transportation (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 DCHC MPO requests bicycle and pedestrian accommodations for all roadway projects where feasible. Non-motorized modes of travel such as bicycle, pedestrian movements, and transit are analyzed and addressed in the MTP and throughout the transportation planning process to a very great extent.

The DCHC 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 DCHC MPO funds portions of the Regional Travel Demand model. Transportation Demand Management (TDM) strategies are a factor in the DCHC MPO's project ranking methodology. The DCHC MPO also has a Greenhouse Gas (GHG) reduction goal that is reflected in a GHG Plan and in the MTP.

The DCHC MPO considers affordable housing plans and needs through coordination with its member jurisdictions, especially the Durham City and County Planning Departments and the Town of Chapel Hill.

Freight

The DCHC MPO considers and evaluates land use and freight-oriented developments within its metropolitan planning boundary. The involvement of the freight community is an ongoing and collaborative process. The work of local chambers of commerce and the DCHC MPO input into the activities of the Regional Transportation Alliance (RTA) highlight the MPO's coordination with freight interests. The DCHC MPO collects and utilizes freight-related data through the use

of truck count data, air cargo statistics, commodity flow data, land use data, the North Carolina Railroad (NCR), and a Freight Analysis Framework (FAF).

The Regional Transportation Alliance serves as the recognized regional business voice for transportation initiatives and policy across the Triangle area, which includes the Durham – Chapel Hill and Raleigh – Cary Standard Metropolitan Statistical Areas (SMSAs). RTA was founded by the Cary, Chapel Hill - Carrboro, Durham, and Raleigh Chambers of Commerce in 1999 and formalized in 2001 as a regional program of the Greater Raleigh Chamber of Commerce with a separate, dues-paying membership. Today, the RTA counts as members more than 100 leading businesses and 23 member chambers, along with the DCHC MPO and adjoining Capital Area Metropolitan Planning Organization (CAMPO), 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.

Financial Planning

The MTP is based on reasonably expected financial resources over the life of the MTP, 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. For MTP updates, trend analysis is used, project costs are updated, and available State and Federal revenues are estimated.

Financial information is developed in cooperation with NCDOT and DCHC MPO jurisdictions and agencies. Each source is defined, including level of funding per source along with a chart showing the various funding sources by horizon year. Revenues are forecast by source, and the MTP document provides the assumptions for each. The current MTP was developed using the new funding sources available in MAP-21.

Where appropriate, new revenue sources are identified in consultation with the DCHC 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 mainly concerns extrapolating existing revenue streams into the future. The MTP documents the current assumptions for each revenue source. To ensure the TIP financial plans are consistent with the STIP, the DCHC MPO requests the most recent version of the STIP when updating the TIP.

The MTP process typically includes a review of project cost estimates obtained from NCDOT. MTP projects that are not yet in the TIP have their project cost estimates updated. Such estimates are revised in connection with any scope changes. MTP projects that are in the TIP have their costs reviewed and updated 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.

Project consistency between the TIP and MTP is established at the outset. The consistency of the financial plan is a function of that. The MTP is developed based on a close review of assumed TIP reviews, projects, and program details.

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

The MTP is made available to the public through the MPO's public involvement plan, its web site, and via printed material in the DCHC MPO's office.

The DCHC 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. New revenue sources for the MTP and TIP are also noted and described.

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 DCHC MPO consults with NCDOT to generate the latest project cost estimates, and to ensure that the TIP financial plan is consistent with the STIP. The TIP and STIP are required to match, so they must be consistent with each other. NCDOT has provided tables of expenditures by funding categories for the past 20 years or more, which assist 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, there are comparisons of older estimated figures with current ones. Estimates are sometimes updated when the scope of the project 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.

NCDOT provides the DCHC MPO trend analysis data when working in cooperation with the MPO to develop its TIP. Ratios and percentages are applied to base numbers and balanced against project cost estimates.

Financial analysis for roadways, transit, rail, bicycle, and pedestrian investments are included in the financial plan chapter of the MTP. Both existing and forecasted numbers for costs and revenues are evaluated.

NCDOT Powell Bill funds have been used for operations and maintenance of the transportation system, and are distributed twice a year.

Environmental Mitigation

The DCHC 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). Federal, State, and local agencies are consulted via regularly held interagency consultation meetings. Minutes are prepared following each meeting and serve to document the consultation and coordination.

Geographic Information System (GIS) environmental overlays and shape files, screening maps, etc. are used to identify the location and condition of environmental features that might 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.

For the latest MTP update, the DCHC MPO used a resource agency contact list that includes agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation. The resource agencies were contacted during development of the plan and later when a draft plan was available.

A better understanding of resources that need to be avoided or impacts minimized has resulted from better estimating potential environmental mitigation activities, and from building upon the existing consultation process.

The Plan includes mapping with projects and environmental factors and a table with 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 that may be needed.

The Environmental Mitigation Section of the MTP focuses on linking the environment with planning. GIS layers were analyzed using data from the NC One mapping resource. The DCHC MPO assigns staff to a Merger Team to review project scoping.

Safety and Security

The safety planning factor is an important factor in NCDOT's project prioritization process, and in the DCHC MPO's Transportation Alternatives Program (TAP) project selection and ranking methodology. The safety factor is weighted high when compared to the other planning factors. The DCHC MPO and NCDOT work collaboratively in developing safety goals, objectives, performance measures, and strategies for the urban area. Partners in safety planning include local traffic engineers, transit operators, NCDOT, and emergency management providers.

The DCHC 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. As projects

are developed, elements of the SHSP are incorporated. Coordination between the DCHC MPO and NCDOT ensures consistency between the SHSP and the MPO's safety projects.

Safety is interwoven into the modal chapters of the MTP, and is assigned an above average priority in project ranking criteria. Safety partners involved include the NCDOT Divisions 5, 7, and 8 Traffic Engineers, law enforcement, and other departments within each local jurisdiction.

Safety performance measures are incorporated in the planning process mainly from traffic accident reports. Metrics may include: 1) fatalities, 2) serious injuries, 3) crash rates, 4) crash hot spots, 5) collision inventories, and 6) pedestrian injuries. Roadway design plans take into account 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 such as guardrails, rumble strips, enhanced lighting, turn lanes, better pavement marking and signs, etc. Highway Safety Improvement Program (HSIP) projects located within the MPO are included in the TIP. Most of these projects come from NCDOT and are routinely included in the TIP when project requests are taken.

Security is defined in the region as increasing the security of the transportation system for motorized and non-motorized users. Natural emergencies such as hurricanes and flooding are accounted for by the MPO. The DCHC MPO collaborates with local traffic engineers, emergency management providers, police, fire, and sheriff's departments, NCDOT, the Highway Patrol, Information Technology (IT), and GIS departments.

Recommendation:

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

STIP/TIP – Development/Approval/Amendment/Project Selection

Regulation: 23 CFR 450.324:

The MPO shall cooperatively develop a TIP that is consistent with the MTP and is financially constrained. The TIP must cover at least a four-year horizon and be updated at least every four years. Additionally, the TIP must list all projects in sufficient detail outlined in the regulations, reflect public involvement, and identify the criteria for prioritizing projects.

Regulation: 23 CFR 450.332:

No later than 90 calendar days following the end of the program year, the State, public transportation operator(s), and the MPO shall cooperatively develop and publish a listing of projects (including investments in pedestrian walkways and bicycle transportation facilities) for which funds under 23 USC or 49 USC Chapter 53 were obligated in the preceding program year.

Regulation: 23 CFR 450.334:

Self-certifications and Federal certifications are required for all Metropolitan Planning Areas (MPAs), concurrent with the submittal of the entire proposed TIP to the FHWA and the FTA as part of the STIP approval. The State and TMAs shall certify at least every four years that the metropolitan transportation planning process is being carried out in accordance with all applicable Federal requirements.

Current Status

Project prioritization and selection is developed in conjunction with the TIP cycle, generally centered on the development of the DCHC MPO's Priority Needs List. This process involves staff analysis of project status (based on specified criteria), anticipated funding availability by source, consultation with the Program Development Branch and Public Transportation Division of the NCDOT, and with transit operators. It continues with review and input from the TC and the Board, typically over a series of two or three meetings.

The DCHC MPO has developed criteria that closely mirror that of NCDOT's criteria used for prioritization. Transit Section 5307 funds are sub-allocated, and STP-DA funds are allocated to projects identified and prioritized by the TC and the Board.

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 about 50%/50%, whereas the State's Strategic Transportation Investments (STI) (and draft STIP) mode investment split is 75% highway and 25% non-highway. The DCHC MPO will continue to have dialogue with NCDOT on this matter. The DCHC MPO believes that the TIP and STIP should better reflect the MPO's MTP priorities.

The DCHC MPO TIP is typically developed every two years on a schedule that is compatible with STIP development. The DCHC MPO, NCDOT, and transit operators cooperatively develop the TIP through subcommittee meetings and technical meetings. The DCHC MPO works with the NCDOT STIP Unit, Public Transportation Division (PTD), and Bicycle and Pedestrian Unit during the preparation of the draft TIP and STIP. The DCHC MPO provides a prioritized list of projects to the NCDOT with relevant local data for inclusion in the Strategic Prioritization on 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 and approve a local prioritization

process. The NCDOT SPOT Office is providing oversight of this legislation. The draft STIP is released and the MPO provides a local version of the document for the public's review. Both the NCDOT and the MPO provide opportunities for the public to make comments on the draft STIP and TIP, and public hearings are held.

The DCHC 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 and better coordination with NCDOT during the SPOT process. The TC and Board appreciate this because they are more involved than in the past. The TIP amendment and modification processes are also working better now that NCDOT submits their proposed amendments within the MPO area to the DCHC MPO prior to taking their official action. Conversely, if the DCHC MPO wishes to modify or amend the TIP, it contacts NCDOT to discuss the proposal. The DCHC 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. The DCHC MPO has had success with their current project ranking and selection methodologies.

The DCHC MPO's project selection process begins with a call for projects from member jurisdictions. The DCHC MPO's project ranking process closely mirrors that used by NCDOT. The DCHC 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 then evaluated for need, readiness, and funding feasibility. They are then ranked using the MPO's prioritization process.

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 DCHC MPO follows the guidelines of the SPOT process and submits projects that are within the MTP for funding. Point assignments are based on joint consideration of the DCHC 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, funding priorities of the NCDOT are subject to change such as with the new emphasis on bridge and pavement rehabilitation, and the allocation of urban loop funds at the State level. 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 new commitment by NCDOT to provide a higher degree of certainty on project delivery within the first five years of the STIP. The State DOT and public transit operators provide the DCHC MPO with estimates of Federal and State funds available for the metropolitan area.

The NCDOT may ask the DCHC 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 DCHC MPO's TIP amendment procedures define major and minor amendments, what triggers an amendment, and public involvement requirements. The amendment is presented at one meeting of the Board 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.

Demonstrating fiscal constraint of the TIP has been difficult for the DCHC MPO at times. The NCDOT develops the STIP and provides the MPOs with their relevant TIP. With the exception of the STP-DA funds, the NCDOT controls the STIP/TIP financial program.

Public Involvement/Visualization

Regulation: 23 CFR 450.316(a):

The MPO shall develop and use a documented participation plan that defines a process for providing citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of public transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with reasonable opportunities to be involved in the metropolitan transportation planning process.

Current Status

The DCHC MPO's Public Involvement Plan (PIP) conforms to Federal regulations. The goals of the PIP 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.

Traditionally underserved communities are provided for in the DCHC MPO's public involvement plan through newspaper advertisements in minority targeted newspapers. Special strategies such as providing food or child care during meetings are also considered.

The DCHC MPO records public comments received when appropriate. The comments are also shared with the TC and Board members.

The DCHC MPO coordinates with NCDOT's Divisions 5, 7, and 8 on specific projects. DCHC MPO staff also attends the project meetings. DCHC MPO staff provides local concerns or information during merger and project review meetings.

The DCHC MPO works closely with the NCDOT when public involvement events are held within the MPO to schedule convenient and appropriate venues. The DCHC MPO assists in advertising the meetings and attends all events sponsored by NCDOT. The DCHC MPO documents its consideration and response to public input.

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

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

The public involvement process demonstrates explicit consideration and responsiveness to public input received during the planning and program development process through receipt of both written and oral comments.

The DCHC MPO's public involvement process is coordinated with that of NCDOT. The DCHC MPO highlights any statewide plans, programs, and workshops that are available for the public. The DCHC MPO staff attends all statewide events held within a reasonable distance.

The DCHC MPO's public involvement is extensive, proactive, and early. Public involvement and outreach for the DCHC MPO's TIP is coordinated with NCDOT's STIP public involvement and outreach. The DCHC MPO routinely evaluates the effectiveness of its public involvement procedures. Some evaluation metrics used include number of email and mail responses received compared to that sent, workshop attendance, Twitter and Facebook comments, number of calls, and feedback, etc. The DCHC 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. One example of a situation where public involvement contributed to debate and resolution of a transportation issue involved the US 15/501 Business lane conversion project. The DCHC MPO seeks out and considers the needs of people traditionally underserved by existing transportation systems by holding meetings with Citizen Advisory Committees (CACs), holding workshops in areas of high minority and low income populations, and placing newspaper advertisements in minority newspapers such as the "Carolina Times."

Visualization

The DCHC MPO employs visualization techniques in its public involvement process to reinforce its planning process. A website, local agencies, public libraries, social media, brochures, and newsletters are used. Efforts to move beyond traditional tables and listings to visually display

information include the use of an interactive website, visualization in both 3D and 2D, mapping, and GIS. The DCHC 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 DCHC 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, MS2, etc.

Recommendation:

- **It is recommended that performance measures be included in the Public Involvement Policy (PIP) to help determine its effectiveness.**

Title VI and Environmental Justice

Regulation: 23 CFR 450.316(a)(1)(vii):

Seeking out and considering the needs of those traditionally underserved by existing transportation systems, such as low-income and minority households, who may face challenges accessing employment and other services.

Title VI of the Civil Rights Act of 1964:

No person in the United States shall, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

Environmental Justice Executive Order 12898:

Each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

Current Status

Based on its recently developed "Environmental Justice Report," the DCHC MPO has done an excellent job establishing a foundation for ensuring that Environmental Justice (EJ) is considered in all of its activities. The report contains a thorough and well mapped demographic profile depicting racial minority, Hispanic, low-income, Limited English Proficiency (LEP), elderly, and zero-car household populations. Using census block groups, the DCHC MPO did a commendable job establishing thresholds to identify and map its EJ populations. DCHC MPO

staff also indicated that the next update of the report will include minority business communities as well as areas of congregation, which is also commendable. The review team did identify one area for improvement, which is to separately identify and map African Americans since they are by far the largest EJ population within the MPO boundaries.

MPOs must ensure that both benefits and burdens of their transportation plans are equitably distributed when comparing EJ populations to non-EJ populations. In order to achieve this, MPOs must conduct both *qualitative* analyses as well as *quantitative* analyses to identify potential transportation impacts. Qualitative analyses usually focus on the results of public involvement efforts. DCHC MPO's Public Involvement Plan (PIP) uses a variety of techniques to engage citizens. DCHC MPO staff reported that one of its most successful techniques is its partnership with the Durham Police Department's "Partners Against Crime" program, which has a large minority presence. With regard to ensuring the engagement of EJ populations, the review team noted a couple of areas for improvement. DCHC MPO staff indicated that its citizen advisory committees, focus groups, mailing lists, etc. have representation from EJ populations; however, they were unsure as to the amount and diversity of that representation. Additionally, the DCHC MPO's current PIP objectives do not contain language specifically targeting EJ populations.

As stated above, the DCHC MPO must also conduct quantitative analyses of its plan to ensure the equitable distribution of transportation impacts at a system-wide level. The DCHC MPO conducted one such analysis, which compared transportation investment and funding in EJ areas with that in non-EJ areas. This one analysis, however does not provide a complete picture. Additional quantitative analyses need to be conducted using other measures so that a comprehensive picture of benefits and burdens is presented. The DCHC MPO has already identified potential performance measures such as accessibility, mobility, congestion, safety, etc. The DCHC MPO now needs to take the next step and use those measures to conduct analyses to compare the benefits and burdens to EJ populations versus non-EJ populations. Examples of the types of questions the analyses should answer include:

1. Where does congestion exist with respect to EJ populations versus non-EJ populations? Based on the MTP, who will benefit from improvements in congestion when comparing EJ populations to non-EJ populations?
2. How do EJ areas and non-EJ areas compare with regard to the best and worst levels of service?
3. Where are the safety issues (vehicle crashes, pedestrian injuries/fatalities, bicycle crashes, etc.) with regard to EJ populations versus non-EJ populations? Does the plan provide for equitably distributed improvements?
4. Regarding improved accessibility to jobs, shopping, etc., how do EJ populations compare to non-EJ populations?
5. How do commute times compare regarding EJ populations versus non-EJ populations?

Again, the above questions are just a few examples. The DCHC MPO will need to decide the types of analyses to conduct based on things such as the availability of data and the measures it determines are most suitable for comparison purposes.

Commendation:

- **The recently completed Environmental Justice (EJ) Report is an extremely well-written and comprehensive document that will provide a solid foundation for the DCHC MPO as it moves forward with addressing EJ concerns and conducting EJ analyses.**

Recommendations:

- **It is recommended that the DCHC MPO separately identify African Americans since they are the largest EJ population and racial minority within the DCHC MPO boundary. As a best practice, the DCHC MPO may also want to present the individual raw data for each racial minority within the DCHC 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.**

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

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

Congestion Management Program (CMP)/Management and Operations (M&O)

Regulation: 23 CFR 320:

TMAs shall develop a CMP to address congestion through a process that provides for safe and effective integrated management and operation of the multimodal transportation system, based on a cooperatively developed and implemented metropolitan-wide strategy of new and existing transportation facilities.

Current Status

The DCHC MPO's CMP contains a network that was identified via the travel demand management. INRX data and shape files data for corridor analysis are included. Bottlenecks have been identified and projects designed to alleviate congestion at these points.

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.

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 DCHC MPO boundary, and vice versa.

The current performance measures in the CMP are Volume to Capacity Ratio (V/C) and Level of Service (LOS). These performance measures provide a generalized analysis of the urban area's roadway segments and allow for further data collection and analysis if needed. The goals and objectives of the CMP were derived from the goals within the MTP to effectively move vehicular traffic, expand public transportation, and reduce travel demand.

The major congestion issue in the DCHC MPO Urban Area is vehicular; therefore, the main data source for the CMP is traffic counts. 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 called for in the CMP 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 analysis allows for the evaluation of projects and proposed improvements as they are completed during the biennial report process.

The congested locations are all along NCDOT roadways such as I-40, I-85, and the Durham Freeway (NC 147). Proposed improvements incorporate additional Intelligent Transportation System (ITS) Architecture.

The CMP has influenced the construction and implementation of non-Single Occupancy Vehicle (SOV) projects by engaging the regional and local transit providers in goal-setting and planning in an effort to both expand public transportation options and services, and to reduce travel demand (the intent of expanding public transportation).

Management and Operations

The DCHC MPO's MTP includes Management and Operations (M&O) strategies proposed for Federal funding supported by specific goals and measurable objectives. Mechanisms for measuring performance of O&M goals and objectives are being developed.

Management and operations strategies are included in the CMP. The operations community has reviewed the goals, objectives, and strategies. The CMP is the mechanism by which they will be evaluated. The DCHC MPO also uses a Mobility Report Card and a surveillance of change analysis to measure performance of M&O goals and objectives.

The Intelligent Transportation Systems (ITS) Regional Architecture contains projects that are consistent with the MTP and are included in the overall planning process. Multimodal approaches such as coordinated signal/bus pre-emption systems, dedicated bus way considerations, and Bus on Shoulder (BOSS) projects are being studied. The ITS Regional Architecture is linked to the planning process through the CMP.

Transit operations are routinely discussed with transit operators during TC meetings.

The CMP network covers the DCHC MPO area and includes a modeled network of roads. Modes include roadway, bicycle, pedestrian, and public transportation. The DCHC MPO may expand the network with the collection of data for the evaluation of performance measures and seek out better sources of data.

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 DCHC 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.

The DCHC MPO needs to identify a process for adding local ITS projects to the Regional ITS Architecture. In order for FHWA to authorize an ITS project, it must first be identified in the Regional ITS Architecture. While NCDOT has a process for adding or ensuring that projects are in the architecture, a federal funded locally administered ITS project may not have a similar process.

Recommendation:

- **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.**

Consultation and Coordination

Regulation: CFR 450.316(b)(c)(d)(e):

The MPO should develop and document consultation procedures that outline how and when during the development of MTPs and TIPs, the MPO will consult with agencies and officials responsible for other planning activities within the MPA that are affected by transportation (including state and local planned growth, economic development, environmental protection, airport operations, or freight movements) or coordinate its planning process (to the maximum extent practicable) with such planning activities, as well the MPO should also include Indian Tribal Governments, and Federal Public Lands, if applicable.

Current Status

The MTP consultant process was developed to include the DCHC MPO and the adjacent CAMPO, NCDOT, local and regional staff, FHWA, and the Institute for Transportation Research and Education (ITRE). This group meets bi-weekly at the Triangle J Council of Governments (COG) during the development and update of the MTP. The inter-agency consultation meetings occur monthly and were established and are guided through an approved Memorandum of Agreement (MOA).

Effort is underway to develop a comprehensive list of agencies and resource groups to locate data, and create an overlay mapping system to compare MPO projects to identify natural, cultural, and agricultural resources, as well as hazardous conditions. Regional partners work together to share information and mapping.

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

Air Quality Conformity consultation is a direct feedback with questions posed by the environmental agencies and responses provided by the MPOs 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 in the development of projects. All comments and responses become public record within the environmental documents and assist the MPOs in refining their processes. The MTP relies on the input of the environmental agencies 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.

The Statewide Interagency Consultation Meetings (SICM), as well as the TIP and MTP specific Interagency Consultation meetings held monthly during plan development and review, are well

coordinated at the Federal, State, regional, and MPO levels. This process has been very successful in creating a team effort in working through the requirements of air quality conformity. The MTP coordination on other natural and cultural resources is accomplished during the preliminary and draft reviews of the document.

Visualization techniques are used to assist agencies in understanding the transportation plan elements. Overlay maps incorporate all the projects within the time horizons of the MTP and show which resources may be affected by the projects. Any project which has multiple resources within the general corridor or alignment will be noted as having an environmental component in the project listing table. The overlays are at such a large scale that anything more concrete would be jointly identified during that process by the resource agencies, NCDOT, and the MPO.

The MTP is compared with State conservation plans and maps, and with inventories of natural and historic resources. The MTP projects are overlaid on the mapping of natural and historic resources culled from numerous sources on the NC ONE map, and other agency shared GIS files.

Commendation:

- **The DCHC MPO and NCDOT are commended on increased cooperation and coordination in project selection.**

Action Plan

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

U.S. Department of Transportation
Federal Highway Administration

Appendix A

Certification Review Agenda

Thursday, May 21, 2015

9:00 – 9:15	Introduction and Purpose of Certification Review
9:15 – 10:15	Self- Certification
	Organizational Structure of Study Area
	Metropolitan Planning Area Boundary
	Agreements and Contracts
10:15 – 10:25	Break
10:25 – 11:00	Unified Planning Work Program (UPWP)
11:00 – 11:45	Consultation and Coordination
11:45 – 1:00	Lunch
1:00 – 1:30	Transportation Planning Process
1:30 – 1:50	Management and Operations
1:50 – 2:20	Financial Planning
2:20 - 2:50	Congestion Management Process
2:50 – 3:00	Break
3:00 – 3:30	Transportation Improvement Program and Project Selection
3:30 – 4:00	Public Outreach
	Visualization Techniques
4:00 – 4:20	List of Obligated Projects

6:00 – 7:30	Public Meeting
	(Public Meeting includes time for one-on-one with Policy Board)

Friday, May 22, 2015

9:00 – 10:30	Metropolitan Transportation Plan (MTP) Development
	Safety
	Security
	Freight Integration
	Environmental Mitigation
	Land Use and Livability
	Bicycle and Pedestrian
10:30 – 10:45	Break
10:45 – 11:00	Air Quality
11:00 – 12:15	Title VI/Environmental Justice (EJ)
12:15 – 1:30	Lunch
1:30 – 2:30	Public Transit
2:30 – 3:00	FHWA/FTA Review Team Meeting
3:00 – 3:15	Presentation of Preliminary Findings

Appendix B

Certification Review Findings

Commendations:

- **The MPO is commended for the development of customized web application for the online management of transportation funding and projects. Among other things, the application is an E-TIP database, developed with input from the North Carolina Department of Transportation (NCDOT) and may become the prototype for the NCDOT's electronic Statewide Transportation Improvement Program (STIP).**

- **The DCHC MPO's new interactive website allows easy access to all plans and programs and the new online funding database application. The DCHC MPO has started interactive mapping on their website as well. This includes travel time, traffic counts, urban canvas and land use and ARC GIS online.**

- **The DCHC MPO's coordination with the transit operators is outstanding. The transit operators spoke about how fortunate they are to be in the DCHC MPO. They have staff conversations with the DCHC MPO and feel their voices are being heard. The addition of the transit representation on the DCHC MPO board did not create a significant difference because the relationship was already good. Overall, the DCHC MPO does an excellent job of including the transit operators/providers in all areas of the planning process.**

- **The Triangle J Council of Governments has done an outstanding job as the regional coordinator for the Triangle Area transportation conformity process. The Triangle Area transportation partners are also to be commended for their communication, responsiveness, and timely completion of projects tasks. The Triangle Area transportation conformity process is a model for how this process should work in North Carolina.**

- **The recently completed Environmental Justice (EJ) Report is an extremely well-written and comprehensive document that will provide a solid foundation for the DCHC MPO as it moves forward with addressing EJ concerns and conducting EJ analyses.**

- **The DCHC MPO and NCDOT are commended on increased cooperation and coordination in project selection.**

Recommendations:

- **It is recommended that the 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 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).**

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

- **It is recommended that the DCHC MPO separately identify African Americans since they are the largest EJ population and racial minority within the DCHC MPO boundary. As a best practice, the DCHC MPO may also want to present the individual raw data for each racial minority within the DCHC 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.**

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

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

- **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.**

Appendix C

Public Notice

U.S. Department of Transportation
Federal Highway Administration

ANNOUNCING
The Federal Certification Review of the Durham-Chapel Hill-Carrboro Planning Process

The Metropolitan Planning Organization (MPO) is the agency responsible for regional transportation decisions for the Durham-Chapel Hill-Carrboro Urban Area. Every three years the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) conduct a review of the MPO's planning activities and procedures to determine whether a Continuing, Cooperative and Comprehensive Transportation Planning Process is being followed according to federal requirements.

There will be a public meeting conducted by the federal review team to receive public comments on the Durham-Chapel Hill-Carrboro planning process. The public meeting will be held on **Thursday May 21** from **5:00 p.m. to 7:00 p.m.** in **the Committee Room** (2nd Floor of Durham City Hall, 101 City Hall Plaza). For further information, please contact Felix Nwoko with the Durham Department of Transportation at 560-4366.

Public comments may also be mailed to Bill Marley, FHWA-NC Division, 310 New Bern Ave. Suite 400, Raleigh, NC 27601-1410 or Bill.Marley@dot.gov. Comments must be received by May 22, 2015.

The federal review team is requesting comments on the Durham-Chapel Hill-Carrboro transportation planning process and not on specific projects!

Appendix D

Glossary of Acronyms

AADT -	Average Annual Daily Traffic
BOSS -	Bus on Shoulder
BOT -	Board of Transportation
3C –	Continuing, Cooperative, Comprehensive Planning Process
CAC -	Citizen Advisory Committee
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
COG -	Council of Governments
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
FY -	Fiscal Year
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 21st 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
OPT -	Orange Public Transportation

PIP -	Public Involvement Plan
PL -	Planning Funds
PTD -	Public Transportation Division
RDU -	Raleigh-Durham International Airport
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
TAP -	Transportation Alternatives Program
TC -	Technical Committee
TCC -	Technical Coordinating Committee
TDM -	Transportation Demand Management
TIP -	Transportation Improvement Program
TMA -	Transportation Management Area
TPB -	Transportation Planning Branch
TRM -	Triangle Regional Model

TTA -	Triangle Transit Authority
UPWP -	Unified Planning Work Program
USC -	United States Code
USDOT -	United Sates Department of Transportation
UZA -	Urbanized Area Boundary
V/C Ratio -	Volume to Capacity Ratio
VMT -	Vehicle Miles Traveled
YOE -	Year of Expenditure

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U.S. Department of Transportation

Federal Highway Administration

Program Review

FHWA – NC

FTA – Region IV

EPA

DCHC MPO

NCDOT

FHWA/FTA

TMA Certification Report
Durham-Chapel Hill- Carrboro Area Planning Process

July 24, 2011

Final Report

U.S. Department of Transportation
Federal Highway Administration

Table of Contents

U.S. Department of Transportation
Federal Highway Administration

Executive Summary

Every four years, the Federal Highway Administration and the Federal Transit Administration are required to review in full the planning processes of any metropolitan area that contains a population over 200,000. This is otherwise known as a Transportation Management Area, or TMA. This certification review is for the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO or also DCHC, for short) and evaluates whether DCHC MPO is in compliance with federal regulations.

The first step in this process is to look at past reviews to ensure that recommendations and corrective actions have been resolved. The second step is to hold a public meeting to attain the public's perspective on planning in the Durham-Chapel Hill-Carrboro area. The third step is to hold an on-site review (examining every planning aspect) and providing the Metropolitan Planning Organization (MPO), the North Carolina Department of Transportation (NCDOT), Transit Administrators, et al., an opportunity to demonstrate their accomplishments or to answer any questions that the federal review team may have. This report is the result of those steps. In addition, the attachments will have a copy of the advertisement for the public meeting, public comments, a list of acronyms, the agenda, and sign-in sheets.

The preliminary findings of the meeting included one corrective action, several recommendations for both NCDOT and DCHC MPO, and several commendations. The preliminary findings include:

Corrective Action
DCHC continues its corrective action to update the PIP and include a robust EJ section. This plan must be complete within 9 months of the TMA Certification Report date. A work plan must be complete and submitted to FHWA within 30 days of the TMA Certification Report date.

Recommendations
The recommendations are primarily focused on improving relationships between the various stakeholders and increasing participation. There are also recommendations to adhere to schedules.

Commendations
There were more commendations than corrective actions and recommendations combined. As a commendation shows not only exemplary activity within the State but also serves as a National example, this is no small feat. The commendations are on the finished documents that DCHC does. When DCHC MPO undergoes an initial document or update, they create a workgroup, thoroughly explore all the avenues, consult regularly with their stakeholders, and provide a document that sets the bar very high.

Background

Pursuant to 23 USC 134 and 49 USC 5303, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) must jointly review and evaluate the metropolitan transportation planning process for each Transportation Management Area (TMA) at least every four years. The purpose of the review is to assess the extent of compliance with the planning requirements, to identify noteworthy practices, and to provide guidance and assistance as appropriate. The review consists of a series of discussions on transportation planning issues with State and local transportation officials directly involved in highway and transit planning activities within the Metropolitan Planning Organization (MPO). A list of participants in the review is included in Appendix A. FHWA and FTA (herein referred to as the Federal review team) hosted a public meeting to receive comments regarding the metropolitan transportation planning process. The Federal review team also provided the opportunity for policy board officials to meet with the team to offer comment on the transportation planning process.

Previous Findings (DCHC Cert Review 2007)

The previous certification finding for the Durham-Chapel Hill-Carrboro TMA was issued on July 24, 2007. The previous review resulted in full certification for the DCHC MPO pursuant to meeting the recommendations given by FHWA and FTA.

Corrective Action

1. NCDOT shall appoint a full-time MPO Coordinator for DCHC.
   This action is complete. NCDOT hired two coordinators in this time period and the last one has been there for nearly two years.

Recommendations

3C Process

1. DCHC and NCDOT should consider expanding the TCC to include Resource Agencies. Should DCHC not expand the TCC to include Resource Agencies, they shall develop other methods for involving Resource Agencies into the planning process. NCDOT should increase their Stakeholder involvement, document their participation, and procedures to encourage effective involvement.
   DCHC invites many Stakeholders to meetings. Their participation is minimal. This is not due to DCHC's efforts, but an overlying interest from the Stakeholders in participating.

2. NCDOT is encouraged to maintain a full-time Safe Routes to School Coordinator.
   NCDOT has hired a full-time SRTS Coordinator.

3. NCDOT should involve MPOs early on in the Design phase and be considerate of design and scope of locally-preferred alternatives (articulate CSS NCDOT vision and follow it).
   NCDOT, DCHC, and FHWA have formed a committee to address this issue. Notices and coordination of meetings with the MPOs have improved. An actual policy needs to be written but is waiting on the completion of Complete Streets.

MPO& State Long Range Transportation Plans (LRTP)

1. DCHC and NCDOT should update plans and processes to reflect SAFETEA-LU.
   This is complete with the adoption of the LRTP.

2. DCHC should address Safety, systems operations, system preservation, and the State Highway Safety Plan in their LRTP.
   This is complete with the adoption of the LRTP.

3. DCHC should incorporate transportation systems Management and Operations in the next update of the metropolitan transportation plan.
   This is complete with the adoption of the LRTP.

4. DCHC shall incorporate Safety as a standalone element in project prioritization in the LRTP.
   This is complete with the adoption of the LRTP.

5. NCDOT should develop a Purpose and Need (P/N) statement as an outgrowth of the LRP in cooperation with MPO's high priority projects.
   We are currently undergoing training in this area provided by FHWA.

Financing (PL and STP-DA funds)

1. DCHC should be more systematic in performance measures and make sure investments are yielding the expected dividends.
   This is an ongoing process. One way the MPO is addressing this is through the measures in the CMP.

2. DCHC and NCDOT should collaborate in financial forecasting and document the step-by-step process.
   This is incomplete but in the process for the 2040 LRTP update.

3. DCHC and NCDOT should use life-cycle costs for the LRTP as part of the decision making process.
   This has been completed and is being revised for the 2040 LRTP update.

4. NCDOT should explore ways to make financial planning and forecasting issues more transparent to MPOs.
   NCDOT has made efforts on this initiative. However, we hope to accomplish more with the STIP review and implementing those recommendations.

TIP & STIP Statewide/Transportation Improvement Plan

1. DCHC should incorporate additional measures that may be useful in identifying impacts of projects, both positive and negative.
   The TIP prioritization methodology includes the evaluation of environmental and community (including environmental justice) impacts. It also includes both negative impacts to streams, wetlands, habitats, etc., as well as positive impacts such as increased connectivity, more frequent transit service, increased transportation options, etc.

2. NCDOT should follow the outlined STIP Public Involvement Process with MPOs by allowing for more input from the MPOs.
   This is part of the recommendations that NCDOT is incorporating with their STIP review.

3. DCHC should incorporate the Statewide portion of the STIP into the TIP.
   This has been completed.

4. DCHC should incorporate locally funded projects (as required under ISTEA) into the TIP.
   This has been completed.

Freight

6. DCHC should incorporate the following freight aspects into their planning process:
   a. DCHC should integrate freight as an integral part of the Plan.
   b. DCHC should include the freight community into the planning process.
   c. DCHC should consider freight mobility in the project-ranking criteria.

   This has been completed in the update of the LRTP and also with the CMP.

Operations and Management (ITS, Safety)

Intelligent Transportation Systems (ITS)

1. DCHC should continue to pursue its implementation of ITS projects.
   With the work on the new ITS Architecture, this is being addressed.

2. DCHC and NCDOT should improve security planning, coordination, and training.
   This is an ongoing effort but DCHC has made good strides in addressing this.

Bicycle/Pedestrian

1. NCDOT should give bicycle/pedestrian modes equal consideration in terms of funding, maintenance, and liability.
   We have formed a group with DCHC and NCDOT to address bicycle/pedestrian in the design stage. This is a recommendation that will continue with this review.

Land Use and Economic Development

1. DCHC should assist NCDOT with modeling land use changes associated with project alternatives on an as-needed basis.
   DCHC is working on incorporating DynaSmart P and has also joined with CAMPO's modeling team and has addressed this issue.

Title VI: ADA, DBE, EJ

1. DCHC should incorporate the following elements into its Environmental Justice (EJ) Plan:
    a. Policy statement
    b. Goals and objectives
    c. Demographic profile
    d. Overlays of demographic information on defined past, future, and planned projects
    e. Measures for identifying burdens and benefits of the MPO's transportation system
    f. An analysis of identified burdens and benefits
    g. Public involvement strategies to engage minority and low-income populations (including Advisory Committee information)

    This has not been addressed and will become part of the Corrective Action of updating the PIP. This action has been included in the 2012 UPWP. Many of these elements are addressed in the prioritization process, however there is no formalized EJ Plan.

2. DCHC should submit a draft of their EJ Plan to FHWA for review and comments. *This has not been addressed and will become part of the Corrective Action of updating the PIP.*

Public Involvement/Public Comments submitted

Corrective Actions

1. DCHC shall revise the Public Involvement Plan (PIP) to include:
    a. Public and developers in the process
    b. Direct public efforts where needed
    c. Develop and document measures to develop the PIP
    d. Develop evaluation criteria
    e. Consider implementing a Citizen's Advisory Committee
    f. Expand visualization techniques

    This has not been addressed and will remain a Corrective Action on a 9 month timeline.

2. DCHC shall formally evaluate the effectiveness of its Public Involvement Program.
3. *This has not been addressed and will remain a Corrective Action on a 9 month timeline.*

Recommendations

1. DCHC and NCDOT should ensure that all policies and procedures are available on the web.
   This has been completed.

2. DCHC shall create a Participation Plan which documents the use of electronic media and visualization techniques, as required by SAFETEA-LU.
   This has NOT been completed.

Current Findings/ Desk Review

Overview of Current Corrective Actions, Recommendations, and Commendations

Corrective Action

1. DCHC continues its corrective action to update the PIP and include a robust EJ section. This plan must be complete within 9 months of the TMA Certification Report date. A work plan must be complete and submitted to FHWA within 30 days of the TMA Certification Report date.
    a. DCHC is strongly recommended to expand information to include non-English speaking populations and conduct four-factor analysis for LEP as part of the EJ section in the PIP.

Recommendations

3C Process

Recommendations:

1. NCDOT is strongly recommended to have fuller participation in the Certification process.
2. DCHC is strongly encouraged to incorporate RDU and other inactive TCC members.
3. DCHC is encouraged to consider getting on the same TMA Certification Review schedule as CAMPO.

Commendations:

1. Commendation for the growing relationship and efforts on both DCHC and NCDOT as well as Division Engineers.

MPO& State Long Range Transportation Plans (LRTP)

Recommendations:

1. NCDOT is recommended to provide more transparent and frequent communication on financial matters on subjects such as: YOE and SPR funds taken out of UPWP.

Commendations:

2. Commendation for joint LRTP with CAMPO and partners involved in the process.

Financing (PL and STP-DA funds)

Commendations:

1. Commendation for outstanding UPWP.

TIP & STIP Statewide/Transportation Improvement Plan

Recommendations:

1. Explore the potential for an electronic Statewide Transportation Improvement Program (STIP).

Air Quality

Recommendations:

1. The DCHC MPO should continue their efforts on following items:
    a. Completing the transportation conformity process on the 2035 LRTP amendments and the FY 2012-2018 TIP by October 1, 2011.
    b. Maintain focus on the work and task deadlines associated with the 2040 LRTP update along with the transportation conformity process to ensure completion by June 15, 2013.

Commendations:

1. The Triangle Region is commended for its outstanding coordination and cooperative process.
2. The Triangle Region is commended for its GHG Plan as prototypical in the State.

Transit

Recommendations:

1. Continue to work closely with CAMPO and Triangle Transit Authority (TTA) to collectively promote regional TTA New Start planning for the Wake county Durham-Orange and Durham –Wake County transit corridors.

2. Work with NCDOT to improve *communication* with respect to Federal Transit Administration (FTA) funds availability. Institute an efficient and mutually viable STIP modification and STIP amendment processes to streamline extraordinarily long period currently required to implement programming changes and to counter the *reactionary posture* currently experienced by the MPO with respect to TIP/STIP development.

3. NCDOT is strongly recommended to adopt a streamlined process for Administrative Modifications for transit.

Commendations:

1. Commendation for Transit operators and MPO Memorandum of Agreement.
2. Commendation for STAC, CHT, CAT, DATA, and TTA coordination.

Operations and Management (ITS, Safety)

Recommendations:

1. DCHC is recommended to adopt a Safety Plan within one year of the Certification Review.

Commendations:

1. Commendation for ITS Architecture as prototypical in the State.
2. Commendation for DCHC's leadership role for the regional TDM effort.

Land Use and Economic Development

Commendations:

1. Commendation for outstanding efforts to bring business transportation agencies together.

Public Involvement/Public Comments submitted

Corrective Actions:

2. DCHC continues its corrective action to update the PIP and include a robust EJ section. This plan must be complete within 9 months of the TMA Certification Report date. A work plan must be complete and submitted to FHWA within 30 days of the TMA Certification Report date.
    a. DCHC is strongly recommended to expand information to include non-English speaking populations and conduct four-factor analysis for LEP as part of the EJ section in the PIP.

Desk Review

Air Quality Coordination

Observations:
The DCHC MPO currently has a conforming 2035 LRTP and a FY 2009-2015 TIP. The USDOT transportation conformity determination was made on the DCHC 2035 LRTP and the 2009-2015 TIP on July 6, 2010. The transportation conformity determination on the DCHC 2035 LRTP amendments and the FY 2012-2018 TIP is due by October 1, 2011.

The transportation conformity work on the DCHC 2035 LRTP amendment and the FY 2012-2018 TIP is currently underway. The Triangle Area has had 2 interagency consultation (IC) meetings that focused on the 2035 LRTP amendments, the FY 2012-2018 TIP, the transportation conformity schedule and tasks to be performed by Triangle Area MPOs and the IC agency partners. The DCHC TAC is expected to endorse the 2035 LRTP amendments, the FY 2012-2018 TIP and the associated transportation conformity determination on August 10, 2011.

Work is also underway on the DCHC 2040 LRTP update that is due by June 15, 2013. The DCHC transportation demand model is part of the Triangle Regional Model (TRM) that is currently housed at Institute for Transportation Research and Education (ITRE) with additional modeling staff support from the Triangle Area MPOs including the DCHC MPO. The current latest planning assumptions (LPAs) adopted in 2008 are currently being revised. The household/employment, traffic count, and population will be updated to a 2010 base year. It is expected that the DCHC MPO TAC will approve the latest planning assumptions along with their 2040 LRTP/conformity determination adoptions in the fourth quarter of 2012.

The Triangle J Council of Governments has done an outstanding job as the regional coordinator for the Triangle Area transportation conformity process. The Triangle Area transportation partners are also to be commended for their communication, responsiveness and timely completion of project tasks. The Triangle Area transportation conformity process is a model for how this process should work in North Carolina.

Recommendations: The DCHC MPO should continue their efforts on following items:

a. Completing the transportation conformity process on the 2035 LRTP amendments and the FY 2012-2018 TIP by October 1, 2011.

b. Maintain focus on the work and task deadlines associated with the 2040 LRTP update along with the transportation conformity process to ensure completion by June 15, 2013.

Commendations: The Triangle Region is commended for its outstanding coordination and cooperative process.

The Triangle Region is commended for its GHG Plan as prototypical in the State.

Metropolitan Area Boundary/Agreements/Voting Structure

Observations:

Boundaries
The most recent update to the MAB is February 2010, for technical corrections (a small expansion of Orange County). There is an area that both DCHC and Burlington Graham MPO claim (overlaps on the map) and they are working to clarify the boundary. Also, Roxboro requested to join the MPO but DCHC is waiting on the Census update.

The non-attainment area is larger than the MAB, including the DCHC MPO MAB, CAMPO MAB, as well as Person County and portions of Orange County, Chatham County, Granville County, and Franklin County. There is an interagency agreement with CAMPO, Chatham County, and Orange County which are members of the DCHC MPO.

Agreements
There are several Memorandums of Agreement at DCHC, including: Conformity, one with Triangle Transit Authority (TTA), Transit operators, CAMPO (Long Range Transportation Plan), STAC (Special Transit Advisory Commission, regional and statewide 2007-2008), and the North Carolina Association for Metropolitan Planning Organizations (NCAMPO).

There is a model agreement between NCDOT, TTA, CAMPO, and DCHC. As mentioned above, there is an agreement on air quality non-attainment boundary overlaps. Cost sharing corridor agreements and project level come from scoping or interlocal agreements.

Organization
There are several agencies that are members of the MPO or policy board, including RTP, RDU, UNC, and Greyhound. They have all been contacted but only RDU and

UNC participate periodically. These include the Universities, Raleigh-Durham Airport, Greyhound, Trailways, and the Research Triangle Park. RDU is on TCC but no response. TTA has had more success. Their LRTP includes coordinating with DCHC. DATA pulled resources and created combined transit effort. Members that should be contacted and considered for involvement are freight associations, and the Department of Air Quality. North Carolina Turnpike Authority requested to be member of TAC and they are a non-voting member. The TAC is not willing to share votes so many of these members are non-voting. However, DCHC needs to have members that are accountable to the electorate.

There is a joint TAC meeting with CAMPO biannually. Voting structure is distributed with one vote per member and is population-based. Weighted voting has only mentioned once but has never been used and is available. Transit members are allowed to make and second motions but cannot vote.

3C Process
The relationship and collaborative partnership between DCHC MPO and NCDOT has improved extensively since the previous Certification Review. DCHC has since taken part in a working group with FHWA and NCDOT Design and integrating their vision into current projects. For projects like NC 54, information is sent to non-traditional agencies. For the LRTP they were contacted and aware of TCC/TAC actions.

DCHC formalized an agreement with Transit Operators in July 2009. They have held meetings with Army Corp. of Engineers for fixed guideways and had significant involvement from the Universities and hospitals (including the Veteran's Administration hospital in Durham).

DCHC actively participates in 2040 focus groups involving realtors and developers, utilities, Duke Power, and principal planners using the ground up approach. Sierra Club is involved in these forecasts. DATA, CHT, and TTA are all on the steering committee. Piedmont IA is much more involved in scoping meetings.

DCHC has an intern currently working on integrating freight stakeholders. This is done in correlation with CAMPO. DCHC is also working with Norfolk Rail and the NCDOT Rail Division to discuss grade crossings and community engagement. Another good contact to bring in would be the Federal Rail Administration Design group to get buy in (John Winkle or David Ballenstine in DC). Obama's plan for Roads, Rails, and Runways will also provide more opportunity for rail grants.

FHWA, NCDOT, DCHC, and CAMPO partnered to complete a joint Long Range Transportation Plan (LRTP). They won an award from the Association for Metropolitan Planning Organizations (AMPO) for this joint plan.

Other groups that DCHC is involved with include: I-40 commission, NC 54, and bus on shoulder. I-40 is spearheaded by the Regional Transit Alliance (private sector), as well as bus on shoulders, and intersection improvements. I-40 looks not just at improvements on the interstate but parallel road improvements. RTA is a proponent of the East End Connector and has helped review NCDOT's SPOT prioritization process and urban loop methodology. Another group is Tri-MAP, which includes all of the transportation partners (held at RDU), who also attend the Chamber of Commerce meetings. DCHC also is active in the Northeast Central Durham and Regional Sustainability plans.

Recommendations: NCDOT is strongly recommended to have fuller participation in the Certification process.

DCHC is strongly encouraged to incorporate RDU and other inactive TCC members.

DCHC is encouraged to consider getting on the same TMA Certification Review schedule as CAMPO.

Commendations: Commendation for the growing relationship and efforts on both DCHC and NCDOT as well as Division Engineers.

UPWP

Observations:
Local agencies are given availability to prioritize on their own. The issues are brought on as an extension of the LRTP and what individual members bring forward to the MPO. Most members are flexible and cooperative of all of the processes.

The only non-federal funds are SPR and categorized as "Other," however the estimates weren't close enough so NCDOT wants this funding category taken out of the UPWP.

Amendments are processed as needed but don't have a clear narrative on what they/NCDOT want it to say. The availability of the funds doesn't seem to be on a timely basis. Funds are deobligated through Amendments and don't see the funding for the next 2 or 3 cycles, and then it's unclear what funding is available. There are usually no more than 2 amendments per year.

With receiving the Rescinded funds back, there is a lot of strain put on the MPOs. They have to make the 20% match in a short turn around period, so they have a special call for projects. Since they don't know what the match is beyond the first year, the local

match money might not be forthcoming for the life of the project based on their annual budgets.

Commendations: Commendation for outstanding UPWP.

TIP/STIP

Observations:
The process includes asking the locals for priorities. Those lists are screened for projects to ensure they're in the LRTP and of scale. DCHC then applies the detailed ranking methodology which is different per mode. Bonus points are granted for multimodal, and also look at environmental, EJ, and community impacts. The prioritization process is currently being updated and will incorporate SPOT (Strategic Planning Office of Transportation) and Urban Loop processes. In addition, DCHC MPO incorporates Environmental impacts, Environmental Justice, and other impacts above and beyond NCDOT's process. There are also additional points for transit replacement buses (state of good repair) and Sustainability projects.

The process and projects go through the TCC/TAC process, including a public comment period. Priorities are sometimes adjusted based on politics and geographic equity. If a High Priority Project (HPP) is not funded, it will be added to the out years.

The SPOT and Urban Loop prioritization processes have made progress in developing priorities but it doesn't look at the funding. Funding is not as transparent as it should be. DCHC sends a list to the NCDOT and NCDOT sends a list of projects the State has selected. There isn't flexibility to spend funds across modes and types of projects. It has been a long time without changes being made to the process.

There seem to be a lot of silos within both federal funding and also in priority tiers by NCDOT. It would be helpful for NCDOT to clarify their priorities and how they're determined.

Recommendations: Explore the potential for an electronic Statewide Transportation Improvement Program (STIP).

LRTP/Financial Planning

Observations:
Many of the questions will have to be addressed after the desk review since there was little NCDOT representation in attendance. There is a joint effort from CAMPO and DCHC, and also partnered by NCDOT for fiscal constraint integration with NCDOT forecasts (taken where we start and edging on the conservative formula). Transit financial plans are more robust.

There is a placeholder for Transportation System Management (TSM) projects. Some of the challenges derive from the cap on gas tax, mileage fees, and guidance for reasonable assumptions for the LRTP.

Federal Highway Administration (FHWA) needs to supply firm, upfront guidance on financial assumptions.FTA requires dealing with risk and uncertainty but there is not the same guidance from FHWA.

Year of Expenditure (YOE) is hard to do because the MPO is basing inflation on 4%. They need to look at the end of construction cost instead of the bid (which Change Order Requests will alter). Last year there was an attempt from NCDOT to move toward giving both the yearly cost and YOE but the MPOs have not received that yet.

Amendments are not trackable in the STIP. It takes monitoring Board of Transportation (BOT) minutes to understand what amendments to the TIP sometimes need to be made. However, it was mentioned that Mike Stanley at NCDOT is very good to work with but there are occasionally times when STIP amendments are made at the Board level and then the TIP and STIP do not line up.

Transit grantees throughout the State are also having a hard time. FTA does not allow using TIP as evidence for documentation. With FTA, the State is the primary customer and not the recipients, and since they (FTA) don't personally approve the TIP, it's not adequate proof of documentation.

Recommendations: NCDOT is recommended to provide more transparent and frequent communication on financial matters on subjects such as: YOE and SPR funds taken out of UPWP.

Commendations: Commendation for joint LRTP with CAMPO and partners involved in the process.

Public Transit (FTA)

Observations:
Transit operators are represented by elected officials on the Technical Advisory Committee (TAC), but they are not voting members in their own right; this arrangement appears to be functionally satisfactory to all parties.

Transit operators including Durham Area Transportation Authority (DATA), Triangle Transit Authority (TTA), Chapel Hill Transit (CHT) as well as university transit operators representing Duke University, Duke University Hospital, University of North Carolina (UNC) and UNC Hospital work cohesively to successfully promote a regional program of projects.

DCHC works effectively with the adjacent MPO, Capitol Area Metropolitan Planning Organization in neighboring Wake County (Raleigh). In parallel, the several transit operators within the DCHC planning boundaries cooperate with Capitol Area Transit System (CATS) toward regional cohesion.

The MPO consults with focus groups and representatives of Private Public Partnerships (PPP), Special Transit Advisory Commission (STAC), the Regional Transportation Alliance (private sector group), the I-40 Partnership and the North Carolina Turnpike Authority as well as the Partners Against Crime (PAC) environmental justice community representatives to further a community-driven sustainability effort which promotes transit corridor improvements within the context of a robust regional land use plan.

DCHC works effectively with North Carolina Department of Transportation (NCDOT) Public Transit Division and Railroad Division to promote regional transportation solutions through careful integration of interests, responsibilities and areas of expertise. In Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program development, transit projects are selected based upon a discreet array of functional evaluation criteria apart from roadway and railroad projects evaluation criteria. Transit program of projects selection criteria include State of Good Repair (SOGR) as the primary criterion, level of projected potential ridership, connectivity to the existing system and environmental stewardship.
The Unified Planning Work Program (UPWP) was highlighted as an excellent document.

Recommendations: Continue to work closely with CAMPO and Triangle Transit Authority (TTA) to collectively promote regional TTA New Start planning for the Wake county Durham-Orange and Durham –Wake County transit corridors.

Work with NCDOT to improve *communication* with respect to Federal Transit Administration (FTA) funds availability. Institute an efficient and mutually viable STIP modification and STIP amendment processes to streamline extraordinarily long period currently required to implement programming changes and to counter the *reactionary posture* currently experienced by the MPO with respect to TIP/STIP development.

NCDOT is strongly recommended to adopt a streamlined process for Administrative Modifications for transit.

Commendations:

Commendation for Transit operators and MPO Memorandum of Agreement.

Commendation for STAC, CHT, CAT, DATA, and TTA coordination.

Congestion Management Plan (CMP) & Management Systems

Observations:
The CMP for DCHC MPO is underway and is expected to be adopted by the TAC by August 2011. It covers all modes of travel for the entire MAB based on a TRM (Transmission Reliability Margin) network. They plan to collect data on a 3-tiered system: 1 will be annually, 2 will be every 2 years, 3 will be every 4 years and covering all areas.

The TCC/TAC identified travel time index, corridor preservation, congestion, singular control delay, non-motorized activity, crash data, and transit data as the types of data to be collected. DCHC is trying to collect travel time data manually by driving the probe vehicle and using blue tooth signalization. County count information and bike counts were also collected.

Project prioritization is determined by identifying system component measures, collecting and analyzing data, then selected by components and quantified. Future conditions are estimated and identify what is highest and will continuously monitor what processes to implement in the future.

DCHC has made great strides in developing their CMP. Although this has been an ongoing process, DCHC has coordinated a group with members from the MPO,

NCDOT, FHWA, ITRE, and TCC members to thoroughly explore and implement a CMP that will fully examine data collection and implementation to reduce congestion and address AQ benefits. The Congestion Management Plan (CMP) and Air Quality Conformity Plan will directly select projects and this also goes into the regional model for project selection of LRTP projects. The CMP makes recommendations for project selection by using V/C ratio. This is not currently in the methodology but DCHC is further exploring this.

Project measures are evaluated by new signal timing data of signal clusters for coordination. After a project is implemented it can then be compared to determine the benefits.

Complete Streets is also being looked at so as to provide additional guidance in collaboration between the MPO and the State. NCDOT has made great strides in developing a Complete Streets guidance but there is a big disconnect between Complete Streets and available financing, as well as the vision for what the different areas define Complete Streets to be. Federal funds would not be used by NCDOT to fund these projects regardless of eligibility. The 80:20 match (usually only used for federally funded projects) is used by NCDOT because there is a large request for sidewalks (which would be maintained by the State) and funding is short.

Environmental

Observations:
At this stage environment at the Planning level is addressed mainly through land use plans. Purpose and Need trainings are well-attended by DCHC and they expect to take a more hands-on approach to development of P/N statements as this is transitioned to the Planning experts. However land use is addressed thoroughly at DCHC. There are many scenarios chosen (sometimes 16 are looked at) that focus on highway intensive, transit intensive, high and low development, etc.

Right now simplistic environmental (watersheds, stream crossings, habitat areas) are screened but in the future DCHC will look at how mitigation affects what land use scenarios stay and go. No population and employment areas are put in land use scenarios where known environmental impacts exist. DCHC should look at Green House Gas (GHG) emissions in financial forecasts.

NCDOT is not currently looking at NEPA-ready projects. NCDOT has done more in the last few years to address NEPA than ever before. The State is trying to deal with these issues through Integration, by looking at community impacts, indirect and cumulative effects, and alternatives analysis.

Land Use and Economic Development

Observations:
A combination of land use and transportation using 17 distinct scenarios (business as usual, constrained at the core of urban areas, intensive highway, intensive transit, etc.) is used for developing land use plans in long-range planning.

A transit-intensive scenario reduced headways to 15 minutes at the peak and included fixed guideway (initially went to 5 minute headways and realized the benefit wasn't feasible). NCDOT doesn't show emphasis on reducing VMT and DCHC is focusing on multimodal. Although NCDOT is now focusing on all modes of travel, DCHC MPO is ahead of the game in their approach.

Challenges exist when determining where the next big employment center, ie RTP (Research Triangle Park) may be. Developers are hesitant to share information on where they may have a vested interest in developing.

To address this, two focus groups of developers in Wake and Durham Counties has been developed to include firms that look at parcel data and information from the Chamber of Commerce. A survey was conducted to look for attractive elements for development.

Commendations: Commendation for outstanding efforts to bring business transportation agencies together.

Public Involvement

Observations:
There is a previous corrective action to update the Public Involvement Plan (PIP). This was not addressed and the most recent update was adopted in 2006. This corrective action continues and is now on a 9-month timeline for completion. This PIP will need to be updated at least every four years.

DCHC MPO is increasing the media and ways to address the public. They use Facebook, library postings, and a 1,000 plus person mailing list to notify upcoming meetings, in addition to three newspapers (one is a minority-focused paper) and the DCHC website. The Planning Dept. has neighborhood lists and DCHC piggy backs off

of other planning or trail committees to add to their mailing list. Emails and regular mail are sent but DCHC is looking for a methodology to improve upon this system.

DCHC MPO is interested in initializing social media and doing an overhaul on their website to include a Spanish-speaking page. Although they advertized on El Centro (a Spanish-speaking newspaper) for their LRTP, there isn't any documentation outlining how they address traditionally underserved populations. Therefore we have included as part of the corrective action for the PIP to include a robust Environmental Justice section.

Public comment has helped to shape the Public Involvement process. There is a feedback loop process that puts comments into themes. A summary of public comments is included in the appendix of the LRTP however feedback is only provided by public request. Variable Message Systems (VMS) is used to inform participants of meetings, but the project website is the most effective tool so far.

Compliance Issues: Yes, one corrective action.

Corrective Actions: DCHC continues its corrective action to update the PIP and include a robust EJ section. This plan must be complete within 9 months of the TMA Certification Report date. A work plan must be complete and submitted to FHWA within 30 days of the TMA Certification Report date.

a. DCHC is strongly recommended to expand information to include non-English speaking populations and conduct four-factor analysis for LEP as part of the EJ section in the PIP.

Title VI/Environmental Justice

Observations:
Minority and low-income (MLI) populations are identified by using bloc group data from the Census and looking at LRTP maps. Once DCHC has looked at all the projects, they are then compared on an overlay based on the county average (Durham County is 52% minority and Orange is 24%), so this is based on a county level.

FTA will be giving 128-day notice for Title VI compliance, so it is critical to address any outstanding issues in compliance sooner rather than later. The City of Durham has a robust Disadvantaged Business Enterprise (DBE) program and the City has offered training to Minority businesses but only as involved in the NEPA process. Triangle

Transit Authority has bus schedules in Spanish and with the website update, this will be helpful to non-English speaking populations.

EJ is used in the LRTP development by use of travel time, access to jobs, and in comparison to the total population. Average time for MLI should not be over 1.2 times higher. However, the four-factor analysis has not been incorporated and should be looked at.

Recommendations: See Public Involvement Section.

Freight

Observations:
DCHC MPO is looking at the future of freight movement. Their long range goal is focus a major portion of the Statewide model to freight. There haven't been a lot of origin and destination points identified within the DCHC area, but there is a lot of through traffic. However, DCHC should work to identify loop traffic with shippers and carriers as well.

DCHC funded a collection of a commercial vehicle survey, using a very robust sample size. This survey will better identify truck breakdowns, since the current model does not give current types of trucks. The 2040 Plan will develop a better GIS and traffic analysis program to create a geographic picture of where trucks are moving. DCHC is also trying to capture freight-related crashes and develop a new weight in prioritization methodology. They are stratifying employment data on what is freight heavy and looking at commercial vehicle data to validate Triangle model by using WIM data stations (5 in the State).

DCHC MPO needs to do better outreach to the freight community for development in the 2040 LRTP. They are trying to develop a relationship with the freight industry by developing a freight committee or adding a member of the freight community to the TCC.

ITS/ Safety

Observations:

ITS
There is a regional team to determine the vision for ITS in the Triangle region with members including: FHWA, CAMPO, DCHC, ITRE, NCDOT, and TJCOG. Basing on

system components, they are incorporating these into the LRTP and TIP. This hasn't been incorporated yet but they are currently going by cost estimates and trying to come up with a way to link to the LRTP and be more accurate.

TDM is the number one priority. There are currently no transportation control measures. The TDM group is very active which is a regional strategy based on a 7-year plan lead by TTA. There is an annual call for TDM projects composed of: regional service funds, local service provider funds (hot spots where TDM is most effective), and demonstration or pilot projects (individualized marketing program). There is an evaluation and monitoring program and TDM is regularly funded from LRTP and includes Operations and Maintenance.

The Triangle received the Best Places for Commuters award several years ago and is in maintenance of that program, working with the regional alliance business group to get more companies to sign up. This program has a required a level of alternative commuter requirements and a level of commitment. The Triangle has not utilized TDM credits for AQ but by gathering this data they could if the needed to.

Safety

There is a Systems Engineering Policy in place. Highway is mostly overseen through NCDOT. But the challenge is updating the ITS (Intelligent Traffic Systems) Architecture. There is a tiered approach to updating or prioritizing a $50 million investment in the ITS section in the 2035 LRTP.

Safety is provided in the LRTP and Safety is one of the factors in the methodology and NCDOT 3 tier approach to crash severity. The database will show what projects are more affected by safety measures. The Congestion Management Plan (CMP), once adopted, will start collecting more safety information starting this Fall.

Sidewalk and pedestrian safety is being considered as well. A NHTSA (National Highway Traffic Safety Engineering) grant was awarded to the City of Durham to look at pedestrian safety because Durham has high level of pedestrian accidents involving children. This is a 4-year program.

The Safety Committee that used to meet annually now meets monthly. They primarily discuss and review transit safety, as well as review and monitor and report to FTA. The overall Safety Plan will be completed in 2012.

An equipment Rodeo is held annually. This is a well-attended event, including venders, High School students, and Vocational Technical Institute students from all over the State. Rodeo competition and award winners will go to State level.

Recommendations: DCHC is recommended to adopt a Safety Plan within one year of the Certification Review.

Commendations: Commendation for ITS Architecture as prototypical in the State.

Commendation for DCHC's leadership role for the regional TDM effort.

Bicycle-Pedestrian

Observations:
Bicycle and Pedestrian (B/P) planning is incorporated into the LRTP process using a bottom-up approach. This is due to the municipalities all having their own B/P plans. B/P is a stand-alone element in the LRTP and there is a separate TIP methodology just for B/P project selection. Highway projects that incorporate B/P into their design receive bonus points.

Bicycle Pedestrian Advisory Committees (BPAC) are very active in the DCHC and Triangle area. There are committees representing Chatham County, Orange County, Carrboro, Durham, and Chapel Hill. All committees report to elected officials who appointed them but also review and comment on LRTP and TIP projects. The MPO level has a staff committee for bicycle and pedestrian at the TCC. Local committees are more citizen-based.

The LRTP target for public comment is to evaluate the process every 5 years. With the CMP, there will be B/P counts at specific locations included in the process. A lot of focus is on pedestrian access to transit. All buses have bike racks (2 per bus) but express riders don't have enough racks. Chapel Hill Transit (CHT) calls ahead to alert riders to keep their bikes locked if racks are full. TTA is looking for ways to deal with the shortage of racks by looking at bike lockers.

Certification Review Attendees

An advisory group and working group approach was used to conduct this review. The following individuals served as the advisory group and core team to conduct this review.

Full name	Affiliation	Title
Jill Stark	FHWA	Transportation Planner
Bill Marley	FHWA	Transportation Planner
Unwanna Dabney	FHWA	Planning & Program Manager
Joe Geigle	FHWA	Congestion Mgmt & ITS Specialist
Eddie Dancausse	FHWA	Air Quality Specialist
Myra Immings	FTA	Program Development Branch Manager
Amanetta Somerville	EPA	Region IV Coordinator
Mark Ahrendsen	DCHC	TCC Chair
Felix Nwoko	DCHC	Transportation Planning Manager
Andy Henry	DCHC	Transportation Planner
Ellen Beckman	DCHC	Transportation Planner
Dale McKeel	DCHC	Bicycle and Pedestrian Coordinator
Kosok Chae	DCHC	Congestion Management Engineer
Maricia Brown	DCHC	Grant Administration and Fiscal Management Planner
Leta Huntsinger	DCHC	Technical Services Team Leader
Julie Bollinger	NCDOT	NCDOT - DCHC MPO Coordinator
John Hodges-Copple	Triangle J COG	Regional Planning Director
Angela Brown	DATA	Fiscal Program Accountant

Pierre Osei-Owusu	DATA	Transit Planner
Patrick McDonough	TTA	Senior Transportation Planner
Cha'ssem Anderson	TTA	Transit Service Planner
Greg Northcutt	TTA	Director of Capital Development
Jonathon Parker	TTA	Transportation Planner
David Bonk	Chapel Hill	Long Range & Transportation Planning Manager
Brian Litchfield	Chapel Hill	Assistant Transit Director

Appendix A
List of Acronyms

3C Process	Coordination, Collaboration, and Cooperation
AMPO	Association of Metropolitan Planning Organizations
AQ	Air Quality
B/P	Bicycle Pedestrian
BOT	Board of Transportation
CAC	Citizen Advisory Committee
CAMPO	Capital Area Metropolitan Planning Organization
CATS	Capital Area Transit Systems
CFR	Code of Federal Regulations
CHT	Chapel Hill Transit
CMP	Congestion Management Plan
DATA	Durham Area Transit Authority
DBE	Disadvantaged Business Enterprise
DCHC	Durham-Chapel Hill-Carrboro
EJ	Environmental Justice
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GHG	Green House Gas
GIS	Geographic Information Systems
HPP	High Priority Project
IC	Interagency Consultation
ISTEA	Intermodal Surface Transportation Efficiency Act
ITRE	Institute for Transportation Research and Education
ITS	Intelligent Transportation Systems
LEP	Limited English Proficiency
LPA	Lead Planning Agency
LPAs	Latest Planning Assumptions
LRTP	Long Range Transportation Program
MAB	Metropolitan Area Boundary
MLI	Minority and Low Income
MPO	Metropolitan Planning Organization
NCAMPO	North Carolina Association of Metropolitan Planning Orgs.
NCDAQ	North Carolina Department of Air Quality
NCDENR	North Carolina Department of Environment and Natural Res.
NCDOT	North Carolina Department of Transportation
NCTA	North Carolina Turnpike Association
NEPA	National Environmental Policy Act
NHTSA	National Highway Transportation Safety Administration

P/N	Purpose and Need
PAC	Partners Against Crime
Piedmont IA	Piedmont International Airport
PIP	Public Involvement Plan
PL	Planning funds
PPP	Public Private Partnerships
RDU	Raleigh-Durham Airport
RTA	Regional Transportation Alliance
RTP	Research Triangle Park
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SOGR	State of Good Repair
SPOT	Strategic Planning Office of Transportation
SPR	Statewide Planning and Research funds
STAC	Special Transit Advisory Commission
STIP	State Transportation Improvement Program
STP-DA	Surface Transportation Program- Direct Attributable funds
TAC	Transportation Advisory Committee
TCC	Transportation Coordinating Committee
TIP	Transportation Improvement Program
TJCOG	Triangle J Council of Governments
TDM	Transit Demand Management
TMA	Transportation Management Area
Tri-MAP	Triangle Mobility Action Partnership
TRM	Triangle Regional Model
TSM	Transportation System Management
TTA	Triangle Transit Authority
UNC	University of North Carolina
UPWP	Unified Planning Work Program
USC	United States Code
USDOT	United States Department of Transportation
V/C	Volume over Capacity ratio
VMS	Variable Message Sign
VMT	Vehicle Miles of Travel
YOE	Year of Expenditure

Appendix B
Advertising Listing

The Herald·Sun
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Affidavit of Publication

**State of North Carolina,
Durham County**

**To Whom It May Concern:
This is to certify the
Advertisement attached
Hereto has been published
in-**

The Herald Sun

on the following dates:

4.28.11

**Sworn to on this 28th day
of April, 2011**

Herald Sun Representative

**Sworn to and Subscribed
Before me this 28th day
of April, 2011**

Carolyn Williams

Notary Public

ANNOUNCING
The Federal Certification Review of the Durham-Chapel Hill-Carrboro Planning Process

The Metropolitan Planning Organization (MPO) is the agency responsible for regional transportation decisions for the Durham-Chapel Hill-Carrboro Urban Area. Every three years the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) conduct a review of the MPO's planning activities and procedures to determine whether a Continuing, Cooperative and Comprehensive Transportation Planning Process is being followed according to federal requirements.

There will be a public meeting conducted by the federal review team to receive public comments on the Durham-Chapel Hill-Carrboro planning process. The public meeting will be held on Tuesday May 3 from 4:30 p.m. to 6:30 p.m. in the Committee Room (2nd floor of Durham City Hall, 101 City Hall Plaza). For further information, please contact Ellen Beckmann with the Durham Department of Transportation at 919-560-4366 or Jill Stark with the Federal Highway Administration at 919-747-7027.

Public comments may also be mailed to Jill S. Stark, FHWA-NC Division, 310 New Bern Ave. Suite 400, Raleigh, NC 27601-1410 or Jill.Stark@dot.gov.

The federal review team is requesting comments on the Durham-Chapel Hill-Carrboro transportation planning process and not on specific projects.

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