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Transportation Conformity Domestic Scan Report:

Use of Latest Planning Assumptions and Transition to MOBILE6



U.S. Department of Transportation
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Use of Latest Planning Assumptions and Transition to MOBILE6

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Executive Summary

The Federal Highway Administration (FHWA) transportation conformity domestic scan was initiated to identify good practices among a select number of nonattainment and maintenance areas for meeting the transportation conformity requirements of the Clean Air Act. This project was targeted at identifying and sharing good practices in meeting the latest planning assumptions of the transportation conformity process. The study also highlighted areas' efforts to address data issues associated with the transition to EPA's most recent motor vehicle emissions model, MOBILE6. The scan team visited six sites in the eastern and southeastern part of the country and met with key transportation and air quality officials at each location.

Major Findings

During the course of the project the scan team documented many successful institutional and technical procedures and arrangements that have helped facilitate the conformity process in the six areas visited: Harrisburg, Pennsylvania; Raleigh, North Carolina; Dallas-Fort Worth, Texas; Atlanta, Georgia; Tampa, Florida; and Nashville, Tennessee. The scan team found four common themes in efforts to collect and use the latest planning information and to transition to the use of MOBILE6 in transportation conformity. The themes were: 1) All areas were working to add structure and predictability to the conformity process including the updating of assumptions, 2) Institutional coordination was important to a smoothly running process and commanded a significant amount of time on the part of the MPOs, 3) Strong State commitment and leadership is central to ensuring requirements are met and providing technical assistance and resources to MPOs, and 4) Various innovative techniques have been developed to collect, analyze, and prepare data for use in conformity analyses.

In addition, the scan team identified various tools that have been developed, and made note of others that would help to enhance the conformity process and analyses. Although some of these practices and tools are not required by the transportation planning or conformity regulations, we have highlighted in this report those practices that have worked to improve the development and use of planning information in the six areas. The FHWA has posted site visit summary information on the Transportation Conformity Community of Practice website (<http://www.fhwa.1.ornl.gov/cops/hcx.nsf>).

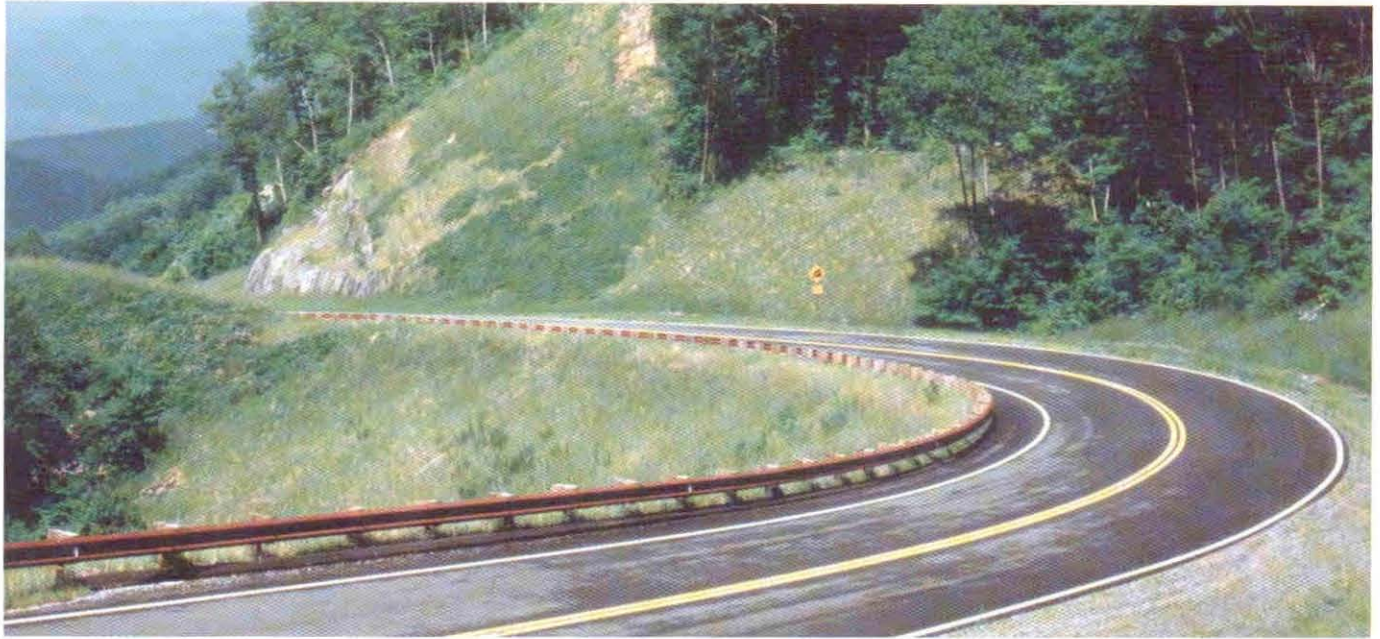
Conclusions and Lessons Learned

The scan team and participants found this experience to be extremely useful, and learned from each other. In addition, many examples of good practices were identified that are being used in the six areas visited to improve the quality of planning assumptions and inputs to MOBILE6. Four significant conclusions can be drawn:

- A variety of non-traditional transportation data sources can be useful in transportation conformity,
- Adding structure to the conformity process helps ensure a smooth process where multiple agencies effectively interact and collectively work together to make a conformity determination,
- A strong State commitment is important to MPOs and rural areas and provides them with vitally needed technical assistance and resources, and,
- Institutional coordination and cooperation is needed to successfully navigate the conformity process without missing key deadlines or requirements.

For experienced transportation conformity practitioners and those new to the conformity process, this report provides specific examples of techniques, sources and tools that were identified in the six areas that may be helpful in meeting the latest planning assumptions requirement and the implementation of the MOBILE6 model.





CHAPTER 1 - Introduction

Purpose of the Scan Project

The Federal Highway Administration (FHWA) transportation conformity domestic scan was initiated to identify good practices among a select number of nonattainment and maintenance areas for meeting the transportation conformity requirements of the Clean Air Act. The scan focused on the use of latest planning assumptions in the conformity process and also highlighted areas' efforts to address data issues associated with the transition to the use of EPA's most recent motor vehicle emissions model, MOBILE6. The domestic scan was modeled after FHWA's long-standing International Technical Scanning Program; an effort to share information between the United States and other countries on issues relating to transportation policy, planning, design, construction, maintenance and technology. In addition, the transportation conformity scan project was developed in response to State and regional agency requests to identify and share information on how areas are meeting various transportation conformity requirements.

Context

A key requirement of transportation conformity is the use of latest planning information and models in the development of travel and emissions estimates. Specifically, the Clean Air Act section 176(c) states that conformity determinations must be "based on the most recent estimates of emissions, and such estimates shall be determined from the most recent population, employment, travel and congestion estimates." After nearly ten years of experience with the transportation conformity process, a great deal has been learned about how to make the process more efficient and many good practices have been developed that can be shared with transportation conformity stakeholders. Many of the good practices described in

this report, however, are not specifically required by the Clean Air Act or transportation conformity rule. The scan team decided that the inclusion of these practices were useful and provide tools for meeting, and in some cases advancing the state of the practice beyond the minimum requirements for using latest planning assumptions in conformity. Under the current conformity rule, nonattainment and maintenance areas must use the most recent planning assumptions that are available at the time a conformity determination is made. The joint DOT/EPA January 18, 2001, guidance¹ clarifies the Clean Air Act and conformity rule requirement (40 CFR 93.110) for using the latest planning information in conformity determinations. The January 2001 guidance encourages areas to review and update assumptions, especially population,

employment and vehicle registration assumptions, every 5 years. The guidance also emphasizes the importance of the interagency consultation process and its role in determining the most recent available information for use in conformity.

The conformity rule also requires that conformity determinations must be based on emissions estimated by the latest emissions model (40 CFR 93.111). On January 29, 2002, EPA officially released the latest emissions model, MOBILE6². MOBILE6 is the required model to be used for mobile source emissions estimates for SIP and conformity analysis in all States except California³. EPA provided a 2-year grace period for areas to phase in this model for both SIP and conformity purposes. This requires that all conformity analyses started subsequent to January, 29, 2004 use MOBILE6. Many areas are in the process of transitioning their regional emission analysis to MOBILE6. The scan team decided to also include a review of how the scan sites are transitioning to MOBILE6 with a specific interest in what and how local data is being collected, analyzed, and prepared for the MOBILE6. The decision of documenting the experience of transitioning into MOBILE6 in the six sites is two-fold. First, MOBILE6 has the capability to incorporate much more detailed data than earlier models, and a few of the scan areas we visited have expanded their data collection efforts to take advantage of the added capabilities of the model. Second, some of these areas are in the process of testing the sensitivity of whether the national defaults or local data should be used in the model⁴. The scan team believes this experience may be helpful to others that are contemplating the same process.

Selection of Scan Sites

Six areas were selected for the transportation conformity domestic scan. Table 1.1 shows the sites visited and dates.

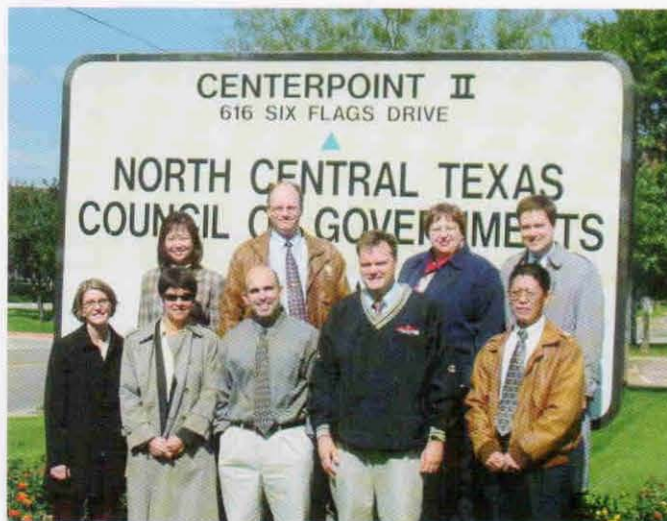
Table 1.1 Conformity Scan Sites

Conformity Scan Sites	Date Visited
Harrisburg, PA	August 15, 2002
Raleigh, NC	Sept. 10, 2002
Dallas-Ft. Worth, TX	Nov. 4, 2002
Atlanta, GA	Nov. 5, 2002
Tampa, FL	April 29, 2003
Nashville, TN	May 1, 2003

These six sites were selected to represent large, medium and small MPOs but facing similar air quality issues, and are from predominantly the South and Southeast regions. With the pending designations of new nonattainment areas for the 8-hour ozone (O₃) and fine particulate (PM_{2.5}) air quality standards, these States are a logical area in which to focus, as a number of new nonattainment areas are anticipated in these states. Some conformity requirements, such as travel demand modeling requirements, differ based on nonattainment classifications and population of areas. Therefore it was also decided to select sites that represent different ranges of nonattainment classifications.

Selection of Scan Team

A group of conformity practitioners with diverse experience in the conformity process were invited to become members of the scan team. Together they represent the Federal government, and State and local transportation and air quality agencies in both policy development and technical analysis. The ability of the scan team to share personal experience in working with conformity in their respective areas was considered an asset and was clearly appreciated in those sites visited. The geographic diversity of the areas represented by the scan team is also important because transportation conformity and air quality concerns result from different issues in different areas of the country. Table 1.2 lists the members of the Conformity Scan Team. Appendix A includes brief biographies of team members.



Participating on the Conformity Scan team allowed me the opportunity to understand the issues in greater depth and meet knowledgeable individuals that can be a resource in the future.

Regina Aris, Baltimore Metropolitan Council

Table 1.2 Conformity Scan Team

Regina Aris	Baltimore Metropolitan Council, Baltimore, MD
Charles Baber	Baltimore Metropolitan Council, Baltimore, MD
Kip Billings	Wasatch Front Regional Council, Salt Lake City, UT
Eddie Dancausse	FHWA-NC Division, Raleigh, NC
Gary Dolce	EPA-Office of Transportation and Air Quality, Ann Arbor, MI
Cecilia Ho	FHWA-Headquarters, Washington, D.C.
Gary Jensen	FHWA-Headquarters, Washington, D.C.
Susan Lee	FHWA-Headquarters, Washington, D.C.
Cynthia Marvin	California Air Resources Board, Sacramento, CA
Sarah Siwek	Sarah J. Siwek & Associates, Inc., Los Angeles, CA
Lynn Soporowski	Kentucky Transportation Cabinet, Frankfort, KY
Angela Spickard	EPA-Office of Transportation and Air Quality, Ann Arbor, MI
Spencer Stevens	FHWA-PA Division, Harrisburg, PA
Tianjia Tang	FHWA- Resource Center, Atlanta, GA

Overview of Scan Format

Prior to each visit, background information was sent to scan team members to help facilitate understanding of the transportation conformity and air quality issues in the area to be visited and the context for air quality issues in relationship to transportation planning. In addition, a list of topics for discussion (See Appendix B) was sent to each of the participants to be involved in the discussions at each site. This helped focus the conversations on the two specific topics of interest.

The scan team spent a day and a half at each site. On the first half-day of each visit, the scan team met with FHWA Division Office staff and the MPO Director. The second half-day of each visit included a



“round table” discussion with the scan team and representatives involved in the respective area’s interagency consultation process, including the MPO, state DOT, State and local air agencies, and FHWA/FTA and EPA Field Offices. See Appendix C for a listing of the participants at each site. Upon completion of each scan visit, a summary of each visit was developed, reviewed by the scan team, and posted on the FHWA Transportation Conformity Community of Practice website. (<http://www.fhwa1.ornl.gov/cops/hcx.nsf>). This final report on the domestic scan provides a synthesis of findings from all six scan site visits.

Being a team member on the conformity domestic scan project (CDSP) has been one of the best learning/training opportunities that I have had in my 3 years of work with FHWA and the air quality (AQ) conformity business.

Eddie Dancausse, FHWA NC Division

¹January 18, 2001, memorandum entitled, “Use of Latest Planning Assumptions in Conformity Determinations” issued by FHWA, FTA and EPA.

²See EPA’s MOBILE6 website to download a copy of the “Technical Guidance on the Use of MOBILE6 for Emission Inventory Preparation” which was issued in January 2002. The MOBILE6 website is located at: <http://www.epa.gov/otaq/m6.htm>.

³The current EPA approved emissions model for California is called EMFAC2002.

⁴MOBILE6 national defaults are commonly used in emissions modeling when no better state or local data exists (e.g., MOBILE6 fleet defaults may be better than older local fleet data), however, EPA encourages areas to use local data when available.



CHAPTER 2 - Findings

Synthesis of Scan Visits

Based on the information gathered from the background materials and on-site visits, four major themes emerged: Structuring the Conformity Process; Institutional Coordination; State Commitment and Leadership; and Innovative Techniques. The scan team identified good practices and techniques that were developed to help facilitate the conformity process and, to a certain degree, the transportation planning process at these sites. A number of suggested tools were also identified and are included in Appendix D for future consideration.

A. Structuring the Conformity Process

A common theme among all the areas visited is the existence of a “structure” to facilitate the conformity process, including the use of latest planning information in the regional emissions analysis. Examples of these “structures” include: documenting data and assumptions used in the conformity process; developing coordinated timelines for various actions to ensure that conformity deadlines are met on time; preparing project descriptions and conformity reports in a standardized format to facilitate review, and providing checklists to stakeholders so that the development of conformity reports is thorough and includes all necessary documentation for approval by FHWA/FTA. Below are notable good practices for structuring the conformity process.

1. Data documentation

The importance of documenting data and assumptions used in transportation conformity has been cited frequently as a lesson learned over the past decade. Data documentation is vital for a number of reasons including: staff turnover in agencies requires a good record of decisions made and assumptions used; the com-

plexities of travel demand and emissions models calls for good documentation so that a complete record of assumptions used in various model runs, for example, is kept; and, litigation on conformity-related issues has necessitated that good documentation be available to the public and the courts.

- **Pre-Analysis Consensus Plan** – The North Central Texas Council of Governments (NCTCOG – the Dallas-Ft. Worth MPO) prepares a pre-analysis consensus plan (<http://www.dfwinfo.com/trans/>) to streamline and improve the efficiency of the conformity process. The plan is a very detailed listing of all planning assumptions, sources of demographic data, models to be used in analysis, VMT adjustment factors, analysis years, control strategies, model validation process, project listing and schedules, etc. An interagency consultation meeting is held to build a consensus on the plan prior to the initiation of the conformity process.
- **Model protocol used for consistency in planning assumptions** – The Raleigh Area MPO (CAMPO) uses a model protocol (<http://www.raleigh-nc.org/campo/Index.htm>) to ensure that all planning assumptions are agreed to by the interagency consultation group and that a routine is in

place to update assumptions on a regular basis. This helps all agencies that provide input (e.g., local governments, State DOT) to understand what data is needed, and recognizes that consistency across agencies is important. To ensure data consistency throughout the maintenance area, the Raleigh MPO also closely coordinates with the Durham MPO (and vice versa). This is because both MPOs are part of a single nonattainment area and have adjacent MPO boundaries.

- **Data Consistency Among Multiple Stakeholder Agencies** – The Atlanta Regional Commission (ARC), Georgia DOT, Georgia Environmental Protection Division (EPD), Metropolitan Atlanta Regional Transit Authority (MARTA), and Georgia Regional Transportation Authority (GRTA) use consistent data throughout the Atlanta region. Interagency and intra-agency relationships are the primary resources available to ensure data consistency. The agencies felt that data consistency is critical due to employee turnover and a high level of scrutiny over the ARC by environmental groups.

In Atlanta, greater communication between project sponsors, MPO staff and the state air agency are taking place to ensure consistent use of planning assumptions in SIPs and conformity determination.

Charles Baber, Baltimore Metropolitan Council

- **Facilitating Use of Geographic Information Systems** – The Nashville MPO is working to develop GIS capabilities in order to better coordinate with other counties and localities in the MPO region and to maintain updated population, employment and land use data. The MPO is coding business license data into the GIS system and has purchased GIS software for the other jurisdictions to help facilitate the use of GIS. The GIS work underway will result in good land use data being collected so

that the MPO can better assess land use changes and more effectively integrate transportation and land use plans.

- **Interactive GIS Map and Supporting Materials for Public Access** – The ARC in Atlanta has developed an innovative GIS Interactive Map for the transportation plan and program in a hyperlink/CD format. This is a way to array information on the Regional Transportation Plan and TIP that allows projects to be searched based on their location in the region. The ARC GIS-based RTP and TIP is a major new innovation in displaying information in a user-friendly format for a major urban area. The public can view projects in any area within the region, obtain a fact sheet on the project and understand how the project fits into the neighborhood as well as the region. This is available on a multi-media CD with all ARC documents, a video on the RTP, reference material, and links to more than 100 different sites in 9 different categories with a brief description of each link.

2. Coordinated Timeline

Experience with transportation conformity has shown that keeping track of deadlines for updates of transportation plans, TIPs and associated transportation conformity determinations is very important. Also, as a complex analytical and institutional process, it is vital for all stakeholders and those responsible for executing part(s) of the process to know what is expected of them and when. The consequence for not meeting deadlines is significant and has caused many areas to go into a conformity lapse.

- **Gantt Chart for Conformity Process** – The NCTCOG prepares a Gantt chart (<http://www.dfwinfo.com/trans/>) that shows the critical path for all key activities in the transportation plan, TIP and SIP processes to ensure that all stakeholders understand which agency has responsibilities for



various elements of the process and the schedule for review and agreement on draft materials. A mid-course SIP review schedule was recently added to the Gantt chart.

- **State DOT sponsored kick-off meeting for each round of conformity** – In Pennsylvania, all nonattainment and maintenance areas are on the same transportation planning cycle. PennDOT sponsors a kick-off meeting for all impacted areas prior to each round of transportation plan, TIP and conformity updates. This helps organize the MPOs, makes information available on data needs and timelines, and improves the quality and timeliness of conformity determinations.

3. Standardized Project Descriptions and Conformity Report Format

Project descriptions are needed for a number of reasons. These include: understanding the scope of a project to determine whether it is regionally significant, compiling project lists for inclusion in TIPs, and subsequently STIPs, and for doing cost estimates both on individual projects and the set of TIP and/or plan projects as a whole. For these reasons, a consistent and standardized format for project descriptions can be very helpful. The format of a conformity determination report can greatly assist those who need to review the conformity determination such as MPO technical and policy committees, stakeholders, and Federal agencies. In addition, a sufficient level of detail in conformity determinations is important so that questions can be answered and independent reviewers can easily understand the conformity report. This can save the MPO staff time in answering questions, explaining assumptions, or describing agreements made in inter-agency consultation.

- **Standardized spreadsheet for project information** – The Capital Area MPO (CAMPO) for the Raleigh area has developed a standardized project information spreadsheet CAMPO <http://www.raleigh-nc.org/campo/Index.htm> that helps organize all project information in an easy to access format. This spreadsheet was developed through the Conformity Improvement Process (CIP). The CIP is an initiative to evaluate the conformity process and ensure a standard agenda. The CIP identifies obstacles, develops solutions to improve the conformity process, and ensures consistency across the State. The CIP also ensures that all required aspects of the planning process pertinent to conformity are addressed through interagency consultation to avoid future complications
- **Statewide timeline, consistent format, and standardized project description book** - The State of Pennsylvania DOT(PennDOT) has established a uniform



process for updating plans and TIPs and conducting conformity determinations including a timeline for required updates of planning assumptions, a standardized conformity reporting format and a standardized project description book (www.dep.state.pa.us). This has improved efficiency and provides stability to the transportation planning and conformity processes.

- **Detailed conformity determination reports** – The Atlanta Regional Commission (ARC- the MPO in Atlanta) has a process in place to meticulously document all planning assumptions, model inputs and outputs, and SIP assumptions including background on the motor vehicle emissions budget. Each conformity determination report Commission (<http://atl-reg.com/>) includes very detailed interagency consultation meeting summaries.

4. Conformity Checklist

Many agencies have found that maintaining a checklist of all conformity requirements is helpful. This is another tool that assists the various parties to the conformity process to understand roles and responsibilities. It also helps reviewing agencies to know quickly whether a conformity determination is complete. The FHWA has included a checklist in its Reference Guide to Transportation Conformity (http://www.fhwa.dot.gov/environment/conformity/ref_guid/index.htm) and many agencies have used that checklist or modified it to suit local conditions.

- **Conformity checklist** – In Nashville a standard checklist for conformity MPO (<http://www.nashvillempo.org/>) is being used with good documentation. This facilitates understanding of requirements and ensures complete conformity reports for the region.

B. Institutional Coordination

Good institutional coordination on transportation conformity issues is essential to a smoothly operating process. It also provides a mechanism for sharing information with stakeholders in an organized and timely way. Early and continuous institutional coordination very often enables timely detection and resolution of conformity issues such as those associated with the use of new planning information. Below are some notable examples of institutional coordination that the areas visited have employed.

1. Institutional Coordination

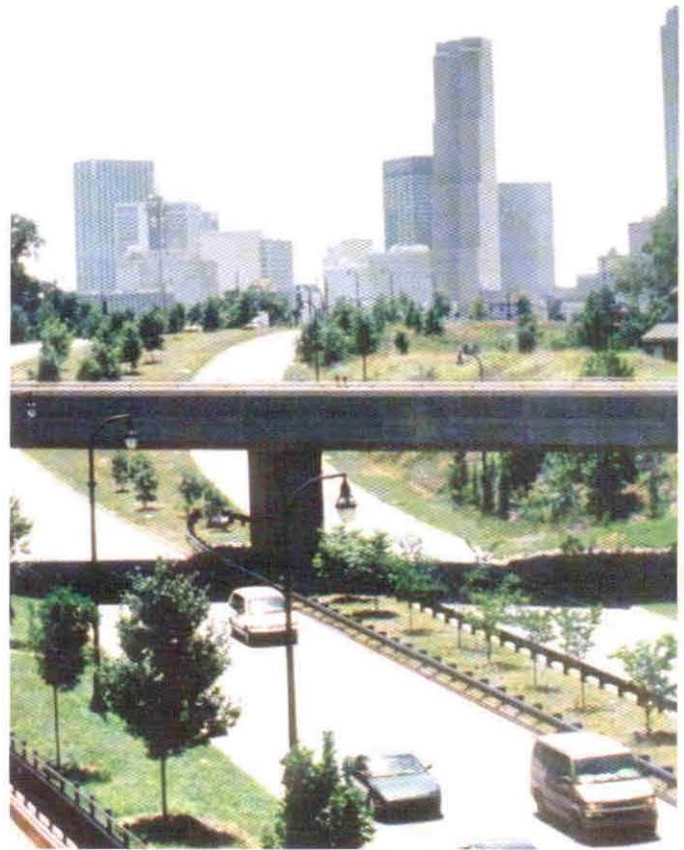
Over the years, many studies on transportation conformity have found one common thread that appears to be a major benefit of transportation conformity, and that is improved institutional coordination. Likewise, agencies working in partnership are the most successful in ensuring a smooth conformity process where all participants are fully informed at all steps along the way.

- **Texas Technical Working Group for MOBILE6** – This group meets quarterly with the Texas Transportation Institute to discuss MOBILE6 modeling and transition issues.
- **Travel demand modeling technical review team** – The Tampa region has established a modeling technical team that includes the four MPOs in the Tampa area and the State DOT. Each year the group decides modeling improvement priorities for the upcoming year. Improvements have included: using household surveys to augment model inputs, goods movement surveys, analyzing external trips (“through” trips) and developing a freight model. The team meets every two to three weeks, as needed.

2. Special Working Groups

The benefits of forming and sharing information among special working groups, beyond the required interagency consultation process, are evident in the examples being practiced in some of the scan sites. For example, statewide working groups are helpful to ensure that all MPOs and other stakeholders stay informed of new developments, share information and techniques that can be used or replicated in other areas, and help the State DOT in the project programming (TIP) process.

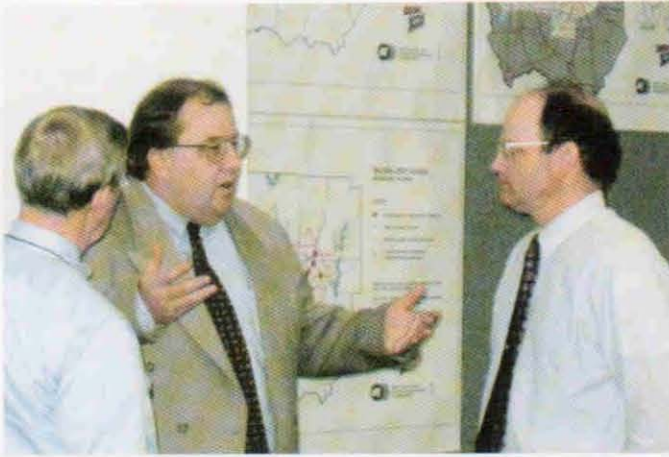
- **Statewide SIP Working Group** – At the initiation of the FHWA Division office in Texas, the agencies in Texas have organized a statewide group to coordinate issues related to SIP development and revisions. This effort has recently been launched, with key stakeholders including the Dallas-Ft.Worth and Houston MPOs. The goal of this SIP work group is to provide better coordination and efficiency between SIP planning and development and the transportation conformity process.



- **Air Quality Partners Group** – In Atlanta, a group of senior management officials from stakeholder agencies was formed to ensure high-level attention to air quality issues and concerns. This in part evolved from the lawsuits in Atlanta but has helped the management officials realize the importance of good communications and a collaborative approach.
- **Multi-disciplinary Technical Coordinating Committee** – The West Central Florida Air Quality Coordinating Committee (WCFAQC) is comprised of approximately 30 major stakeholders including the MPOs, the state DOT and DEP, utilities, transit providers, the University of South Florida, the American Lung Association (ALA), and others. The group meets every other month and has received various grants through the MPOs to promote air quality improvements. One of the innovative programs of the WCFAQC is the Youth Environmental Associates (YEA) program at local high schools. This program is funded through a grant with the ALA and activities include a “no-drive” day for high school students, four times a year.

One of the scan sites in particular struck a cord with me. I have already scheduled an FHWA funded peer exchange for the two MPO directors we spoke with in Tampa, FL to attend our annual Pennsylvania Fall Planning partners conference to speak about their collaborative and cooperative approach to transportation planning.

Spencer Stevens, FHWA PA Division



3. Communications Among Partners

Given the demands on staff in the various agencies involved in the conformity process, staff are always looking for more efficient ways to communicate. For example, E-Mail offers a good opportunity to quickly communicate on issues and to avoid the need for some travel and meetings.

■ **E-Mail Interagency Consultation Process** – In Nashville, an E-mail consultation process is used for TIP amendments and for the discussion of projects that are exempt from conformity. In addition, a programmatic list of exempt projects (<http://www.nashvillempo.org/>) has been developed.

C. State Commitment and Leadership

In areas where the development and use of latest planning assumptions occurs regularly and with minimum disruption, the scan team found that there is a strong State commitment to the process and demonstrated leadership among State DOT officials to meet the conformity requirements. This includes providing resources, both staff and funding, and technical assistance to MPOs. However, strong State leadership does not lessen the need for in-house resources within the MPOs. Further, the transfer of technical capabilities and expertise to the individual MPOs is important for establishing a transportation planning and conformity process that can effectively and address the area's mobility and air quality needs.

1. State DOT's Commitment in Conformity Process

State DOT leadership and commitment of resources in assisting MPOs in meeting the conformity requirements does make a difference. This is especially evident in the areas of technical assistance such as providing resources for hiring consultants or in developing a standardized transportation model. These coordinated efforts will ensure that planning assumptions used in each conformity analysis are agreed upon.

■ **State DOT Commitment and Leadership** – The Pennsylvania Department of Transportation (PennDOT) has played a key role in ensuring that all nonattainment and maintenance areas comply with transportation planning and conformity requirements. PennDOT has contracted with a consultant to conduct the conformity determinations in all areas in the state except for the urban areas of, Pittsburgh, Allentown, Lancaster, Harrisburg and Philadelphia. Resources to fund these efforts have been provided since 1993 and the State DOT has a small staff that oversees the consultant's work. The State's goal is to gradually develop the technical capabilities at the MPO level and have the MPOs take over the conformity process. Lancaster and Harrisburg are smaller MPOs that have recently taken over the conformity process with back up and assistance from the consultant as needed.

■ **Mobile Source Emission Reduction Measure Handbook** – Texas DOT (TXDOT) and the Texas Transportation Institute collaborated to produce this handbook which includes a proposed methodology for estimating impacts of transportation control measures (TCMs). The handbook will be published following review and comment by stakeholders.

■ **Technical Study Sponsored by State DOTs** – Tennessee DOT is a sponsor of the Arkansas/Tennessee/Mississippi Ozone Study (ATMOS), which, in addition to studying the ozone transport issues in the region, quantifies the effect of TCM-like projects using off-model analysis.

■ **One Travel Demand Model Used Statewide** – The Florida Standard Urban Transportation Model (FSUTM) is used statewide by the individual MPOs such as Hillsborough and Pinellas County MPOs in the Tampa area. All four counties within the maintenance area use the model, all with the same assumptions. "What if" scenarios can be tested at the MPO level and each MPO has modeling capability. Although the MPOs have the ability to modify the model, the FDOT district office is the gatekeeper for the official travel demand model files to ensure quality control.

2. State Leadership in Facilitating Discussion and Problem Solving

State agencies have played a key role in helping ensure that potential problems are identified early and that conformity stakeholders collaborate to resolve issues. This leadership is particularly important in States with many nonattainment or maintenance areas.

■ **Statewide monthly conference call** – The North Carolina DOT, in coordination with the State Department of Environment and Natural Resources (NCDENR), sponsors a statewide call each month for areas subject to conformity

requirements. This serves as a useful and timely way to share information and to ensure consistency within the state in addressing various conformity issues.

■ **Texas Statewide Air Quality Steering Group** –

This group, which includes businesses, elected officials, environmental groups and the Texas Commission on Environmental Quality (TCEQ), EPA, TXDOT and major MPOs discusses control strategies that TCEQ may not be able to implement on their own or without public or private sector support.

■ **MPO Conformity Staff-Capacity Building** –

The North Carolina DOT has historically been a dominant player in the transportation conformity process within the Raleigh/Durham region. Recently, the Raleigh MPO has been working to build its capacity to become a more equal partner by dedicating a new staff person to transportation conformity including handling demographic projections and modeling responsibilities. With State support, it is expected that the MPO will be able to carry-out the conformity process in the future.

■ **Early establishment of interagency consultation for 8-hour ozone and fine particulate matter (PM_{2.5}) areas** –

In Georgia, State and Federal agencies initiated a statewide, quarterly interagency consultation process for areas that anticipate being designated nonattainment for the new 8-hour ozone and PM 2.5 air quality standards. The State agencies expect this to enable the new areas to be better informed about transportation conformity requirements so that they can meet the need to have conforming plans and TIPs in place 12-months after the effective date of nonattainment designations.

■ **Statewide On-line Conformity Information** –

In Florida, the State DOT has been instrumental in coordinating conformity issues and maintains on-line information including a conformity checklist and guidelines, (<http://www.hillsboroughmpo.org/mpohome.htm>) an MPO manual, and information on the cycle for transportation plan, TIP and conformity updates. There also is a consistent statewide project numbering system and a process through E-Mail to agree on exempt projects and regionally significant projects. The State DOT commits considerable human and financial resources to these efforts and this clearly has assisted the MPOs in the conformity process.

■ **Annual Statewide Conformity Meeting** –

The Florida DOT facilitates an annual statewide conformity meeting with representatives from the Federal, State and local agencies (including all six MPOs within the three maintenance areas within Florida). FHWA-Florida Division and EPA Region 4 are very active participants in the annual meeting and provide presentations aimed at facilitating conformity implementation in the State.

3. State Initiatives

In recent years there has been a movement throughout the country to plan more thoughtfully for growth. A number of statewide initiatives were on the ballot in 2000 and 2002 to put measures in place to provide incentives and/or require local governments to do comprehensive land use planning. These initiatives provide good opportunities for planning assumption updates.

■ **Statewide Land Use Statute** –

In 1985, the Florida State Legislature enacted a land use statute resulting in the development of comprehensive land use plans in each county and updating of the plans every five years. This “concurrency process” ensures that any development occurs in areas where infrastructure is in place to serve the development. If development is done outside the Urban Service Area (USA), the county or the developer must pay the cost of infrastructure and no State funds can be used. In the Tampa area, Pinellas County has a growth management plan with 25 local governments and Hillsborough County’s plan includes three cities. Through this process, population, employment and land use data is generated and used in travel demand models. Socio-economic data are updated every three years on the schedule corresponding with the transportation plan update cycle.

D. Innovative Techniques

During the scan visits, numerous techniques and data sources were discussed to show how data used in the conformity process can be generated and tailored to reflect local and regional conditions. These sources of data are primarily used in the travel demand and emissions modeling processes. Some of these techniques are especially useful in addressing data issues related to MOBILE6 transition.

1. Data Sources

Transportation conformity is largely based on an analytical process that requires data which, prior to 1990, MPOs may not have needed. One example is vehicle registration and fleet mix data which are required data for estimating emissions. Innovative data sources have emerged in some areas and help make the conformity process more robust.

■ **School District information** – In Pennsylvania, school district information is used as an alternate source of population data and augments census block information.

■ **State-based Road Management System** – The PennDOT Road Management System (RMS) provides data on road inventory for the state-owned portion of the road system and allows PennDOT to improve the quality of HPMS data. This source of travel data is particularly helpful for conformity efforts conducted by smaller MPO’s and rural areas.

■ **Innovative sources and uses of data** – The Capital Area MPO (CAMPO) in the Raleigh, NC area uses a number of innovative data sources for transportation and emissions modeling purposes. These include: crash data from the State Department of Motor Vehicles to determine the fraction of vehicles subject to Inspection and Maintenance Program requirements and raw data from the State DMV used to develop vehicle age profiles. In addition, CAMPO uses InfoUSA data (employment records for the region updated twice a year) in collaboration with the Chamber of Commerce which funds access to this data for the MPO. Census data is updated annually using tax/parcel map data; and speed data is used from Global Positioning System (GPS) technology placed on paratransit agency vehicles.

■ **Improved Truck Data** – In Atlanta, a commercial vehicle survey was completed in the mid-1990s and used to develop the truck component of the travel demand model. Georgia DOT and Georgia Tech are currently conducting independent truck studies to update the truck information for the region. Georgia Tech is conducting this independent research effort under contract to GRTA.

■ **Improved Freight and Truck Data** – In Nashville, the MPO has initiated a freight movement study, which includes an assessment of the potential for diverting truck traffic to rail in the future. Tennessee DOT has completed a rail study (http://www.tdot.state.tn.us/Chief_Engineer/assistant_engineer_Planning/pubtr~1/RailPlan/index.htm) that will augment this analysis.

One very helpful emissions modeling tip I picked up was the use of accident data to identify the percentage of vehicles traveling in the non-attainment area from counties that do not have an emissions testing program. This tip was discovered during our visit to Harrisburg, PA.

Kip Billings, Wasatch Front Regional Council

2. Data Collection Techniques

Data collection is also important to MPOs and rural areas because it can help make the conformity process reflect local conditions and rely less on national default data, that may not be accurate in a given locale.

■ **Improved trip origin and destination data** – NCTCOG conducted parking lot surveys so that they can better determine trip origin and destination information. This included recording of vehicle identification numbers (VIN) which then are tracked to vehicle registration data.

■ **Travel surveys every ten years** – The NCTCOG conducts comprehensive travel surveys every ten years with the

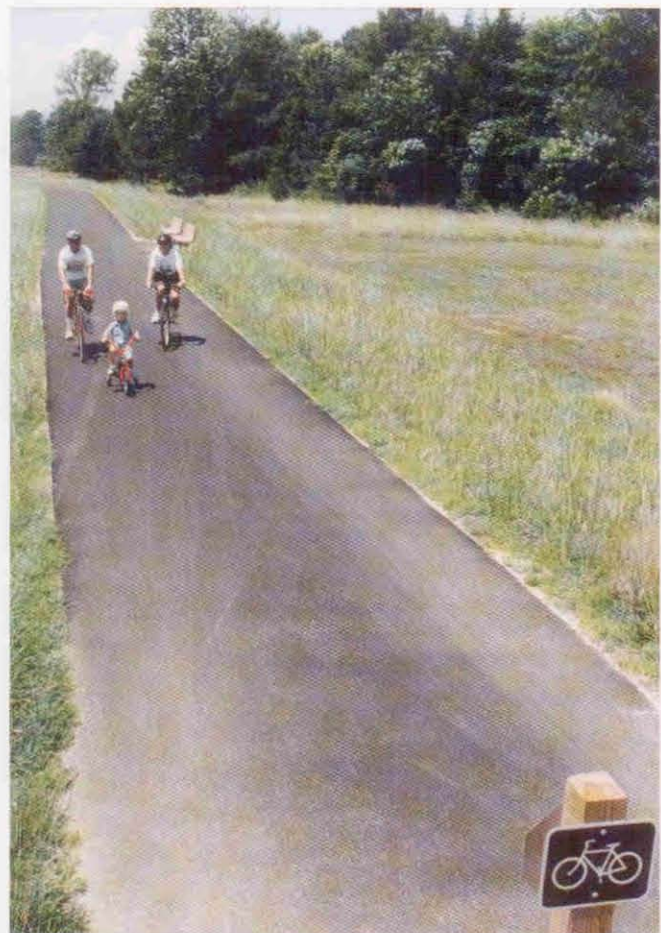
most recent having a budget of approximately \$2 million. Information collected includes traveler behavior, household demographics, trip generators and attractors, etc.

■ **Truck activity by time of day by facility type** – NCTCOG plans to examine detailed truck activity by time of day by facility type and possibly use GPS technology to collect this information. NCTCOG believes that this will make their heavy-duty truck information more accurate and reflect local activity for this vehicle classification.

3. Data Analysis, Preparation and Documentation

Good development and documentation of data is central to the regional emissions analysis. Some areas have put a major emphasis on developing data sets that reflect local conditions and on updating data on a routine basis.

■ **Innovative modeling enhancements** – The Tampa region has several efforts underway to enhance travel data including: travel activity of students through dorm surveys and other group quarters, analyzing household data for life style differences (e.g., households with no children, elderly persons, etc.), and using travel logs.



- **Documentation of data and inputs** – NCTCOG has a process in place to diligently document all modeling data inputs along with justification for use of each. This is intended to assist in protecting the agency should there be legal challenges and to provide a historical record of which assumptions have been used in conformity determinations.
- **Improvements to accuracy in VMT estimates** – The NCTCOG in Dallas- Ft. Worth is working to improve the quality of VMT data by incorporating alternative sources such as saturation counts conducted by TX DOT, into the VMT estimates used in modeling. Members of the interagency consultation group agreed with this approach contingent upon NCTCOG's agreement to continue using these alternative sources of data in the future.
- **Uniformity in Travel Demand Modeling** – The ARC in Atlanta developed TP+ modeling protocols in order to ensure uniformity in use of the travel demand model by different agencies. TRANSCAD is used for off-model analysis.
- **TRANSCAD Internal Peer Review** – NCTCOG has an internal peer review group to work on the transition to TRANSCAD. This aids the MPO in working through issues and building consensus within the organization about inputs, sensitivities, and other transition issues.
- **Speed Studies** – GRTA, in conjunction with ARC, EPD and GDOT, conducted two speed studies to update free flow speeds by facility type/area and to develop improved volume-delay curves by facility type/area and time of day. These studies were segment based and enable the development of link-by-link and point-to-point speeds in the region for four time periods during the day.

4. Transition to MOBILE6

The transition to MOBILE6 has been a focus of many MPOs over the past two years, given that all conformity analysis started after January 29, 2004, the end of the grace period, must be based on MOBILE6. While the transition is in different stages in different areas, much progress has been made in gearing up for use of the new model.

- **Agreement on MOBILE6 Assumptions and Schedule for SIP Revision** – In Atlanta, the interagency consultation group has agreed upon the MOBILE6 assumptions to be used and the Environmental Protection Department (EPD) is working to update the SIP using MOBILE6 prior to the next conformity determination.

- **Use of MOBILE6 for Maintenance Plan Update** – In Tampa the recently submitted update to the maintenance plan was done using MOBILE6. Default data for vehicle age and registration and speeds was used because the region does not have other available data.
- **MOBILE6 for Mid-Course SIP Review** – The NCTCOG in Dallas-Ft. Worth is coordinating the schedule for the update of the plan and TIP with the Texas Commission on Environmental Quality (TCEQ) to ensure that the SIP is revised prior to use of MOBILE6 for the next conformity determination. The region is planning to do one more conformity determination with MOBILE5 before the expiration of the MOBILE6 grace period.
- **Incremental Development of Local Inputs to MOBILE6** – In Pennsylvania, there are plans to incrementally develop local data inputs for MOBILE6 based upon the highest pay-off inputs in terms of sensitivities to local vs. national default data. The most sensitive inputs are speeds and vehicle miles traveled.
- **MOBILE6 Sensitivity Analysis** – The NCTCOG in Dallas- Ft. Worth is conducting sensitivity analysis to determine whether local data or national defaults should be used for various MOBILE6 assumptions. Planned areas of analysis include: identifying which inputs effect emissions rates and identifying those inputs which account for a high proportion of emissions (e.g. heavy-duty diesel) and focus on collecting local data for those vehicle classifications. NCTCOG is also testing absolute humidity for 15 different time periods and temperatures to better reflect local temperatures and traffic conditions.
- **Accounting for non-recurring congestion** – NCTCOG is accounting for non-recurring congestion in the emissions inventory so that they can take credit for strategies that reduce emissions due to non-recurring congestion (e.g., ITS improvements).
- **VMT Profiles from Travel Model Data** – The PennDOT contractor prepares MOBILE6 input files of VMT profiles (VMT by hour, speed range, and facility) in an automated process that extracts the information from the travel model.

WFRC has also had the good fortune to work with early drafts of the MOBILE6 model and was able to use that time to prepare in-house software that prepares MOBILE6 input files directly from the travel model data. In doing this, WFRC has taken full advantage of the increased detail available in MOBILE6 VMT profiles by speed category, hour, and facility type.

Kip Billings, Wasatch Front Regional Council



CHAPTER 3 – Conclusion and Lessons Learned

One important benefit of the domestic scan was that the scan team and participants at the six sites had the opportunity to share experience and learn from each other. In addition, many examples of good practices were identified and are being used in the six areas in meeting the data and planning assumptions requirements of the conformity process. The scan team has learned that each site has their own unique set of challenges, but all have implemented innovative ideas to make the process more efficient, to improve the quality of planning assumptions and to prepare necessary data inputs to transition into MOBILE6.

Based on the experience and lessons learned at the six sites, the scan team has identified four major conclusions, which offer some ideas and insight for experienced conformity practitioners and newcomers alike. In addition, several scan team members have provided feedback on their experience in participating in the domestic scan as shown in Appendix E.

1. There are a variety of non-traditional sources of transportation data that can be useful in meeting the latest planning assumptions requirements and emissions modeling needs.

The scan team has learned that many MPOs are exploring new and innovative data sources and forging new partnerships in obtaining up-to-date data. As examples, we heard about the use of employment data, crash data, and coordinated land use and general plan

data as being helpful to the conformity process and to ensuring that the most up to date assumptions are being used in the regional emissions analysis. Also, with the imminent transition to MOBILE6, more detailed vehicle fleet data will be required. The identification and use of non-traditional data sources can mitigate the need for, and the expense of, extensive data collection efforts. This can facilitate the conformity process and enables MPOs to use sources of data that may prove useful in other aspects of transportation planning.

2. Adding structure to the conformity process helps ensure a smooth process where multiple agencies interact to share information and work together to make a conformity determination.

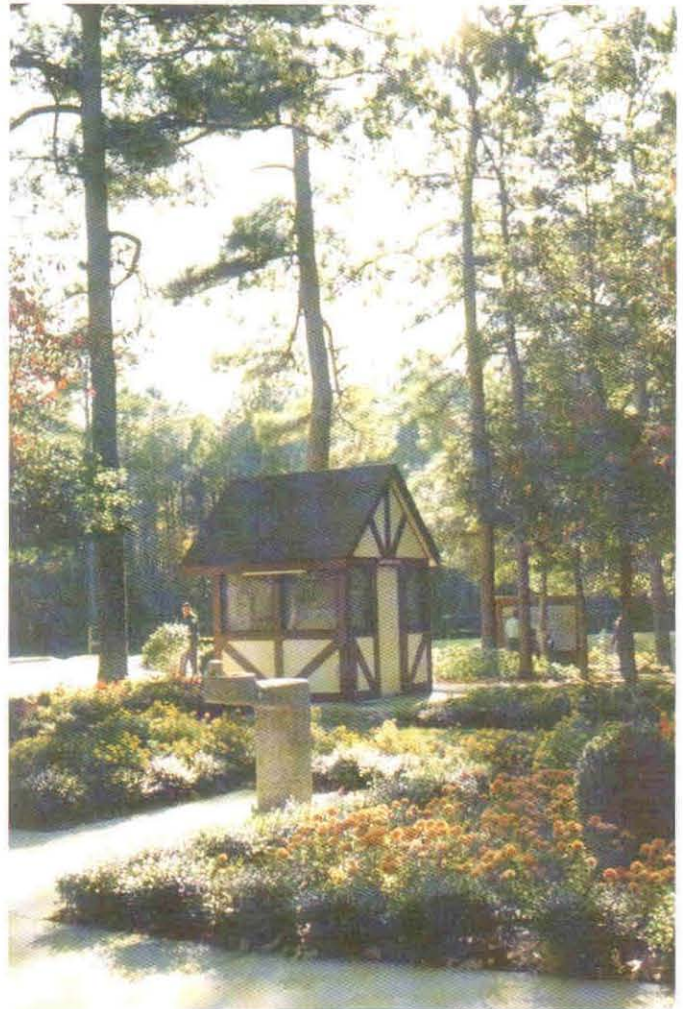
The use of consolidated timelines for transportation and air quality planning are being used to help areas schedule their work efforts in an organized and logical manner so that key deadlines and requirements are met. Further, the process of jointly developing these timelines enables all parties involved to understand and appreciate the length of time needed to carry-out the many tasks associated with a conformity determination. In addition, standard report formats, standard project information formats, and checklists all help areas to manage the conformity process effectively. Given the complexities of the conformity process, adding structure to help organize the stakeholders has greatly assisted areas in working through the conformity determination in a methodical and timely manner.

3. A strong State commitment is very helpful to MPOs and rural areas and assists them with vitally needed technical assistance and, in many cases, data needed for the conformity process.

Strong State commitment and leadership has proved to be essential to successfully working through the conformity process and providing the MPOs, especially smaller MPOs and rural areas with needed technical assistance. In addition, State commitment includes providing the necessary resources to collect data, perform modeling and support the needs of MPOs and rural areas in making conformity determinations. We also found that a strong State commitment reinforces the need for transportation and air quality agencies to work together and develop joint ownership of the conformity process.

4. Institutional coordination and cooperation are needed to successfully navigate the conformity process without missing key deadlines or requirements.

Different agencies have different but complementary roles in the transportation conformity process. Areas that have dedicated time to ensuring all parties know their roles and responsibilities and the importance of deadlines for key products have been very successful in efficiently managing the conformity process. The level of institutional coordination may vary depending on the severity of the air quality problem and on the number of agencies that may be involved. Nevertheless, all areas subject to the conformity process can benefit from strong institutional coordination and collaboration.



Transportation Conformity Scan Team Bios

Regina Aris received a Masters Degree in Business Administration from Loyola College. Ms Aris is currently the Manager of Plan and Policy Development for the Transportation Planning Division of the Baltimore Metropolitan Council. Ms. Aris has been with the Council for 10 years. The Council serves as staff to the metropolitan planning organization known as the Baltimore Regional Transportation Board serving the Baltimore region. Ms. Aris is currently Chair of the Interagency Consultation Group responsible for coordination of air quality issues for the Baltimore region. Ms. Aris participates on several TRB Committees and is a member of several national organizations.

Charles Baber has been employed at the Baltimore Metropolitan Council since 1989 applying travel models in transportation improvement and air quality applications. He participated in the collection and analysis of the Baltimore region's 1993 and 2001 household travel surveys and 1996 on board transit survey. Charles has a Bachelor of Science in Geography and Environmental Planning, Towson University, 1989

Kip Billings is a Traffic Engineer with the Wasatch Front Regional Council - the MPO for the greater Salt Lake City Area. Kip has worked for WFRC for 6 years primarily responsible for transportation conformity analysis and related work with travel modeling, CMAQ programs, and Congestion Management. Kip has been heavily involved in the initial beta testing of the MOBILE6 model since January 2001. Prior to working for WFRC, Kip worked 10 years as a Planner for the Utah Transit Authority. He earned his Bachelor's and Master's degrees in Civil Engineering from Brigham Young University.

Eddie Dancausse graduated from the North Carolina Agricultural and Technical State University with a B.S. in Industrial Engineering in 1987 and the George Washington University with a Master of Engineering Management in 1991. Eddie worked for the Department of Defense for 12 years doing environmental work in the areas of Hazardous Waste Management, Storm/Waste Water Management and Air Quality Management. Eddie joined the Federal Highway Administration (FHWA) in January 2000. Eddie has worked on air quality issues both at FHWA Headquarters and the FHWA North Carolina (NC) Division. Eddie has provided oversight and interacted extensively with Federal, State, and local partners for the successful completion of transportation conformity determinations. Eddie also manages the Congestion Mitigation and Air Quality (CMAQ) Improvement Program for the FHWA NC Division office.

Gary Dolce has been an Environmental Scientist in the U.S. Environmental Protection Agency, Office of Transportation and Air

Quality in Ann Arbor, Michigan for the past 14 years. During his tenure at EPA, Gary has worked on a wide range of technical and policy issues related to the assessment of the impact of mobile source emissions on regional air quality. Key projects have included the estimation of emission benefits of the National Low Emission Vehicle program and for Tier 2 emissions standards, and the development of a methodology for calculating what emissions reductions are creditable under Clean Air Act rate of progress requirements. More recently, Gary was the primary author of the MOBILE6 Technical Guidance. Gary received a Masters in Public Policy from the Ford School of Public Policy at the University of Michigan in 1990. Prior to that, Gary was a 1979 graduate of the University of Illinois with a bachelors degree in biology and he spent nine years as a graduate student and research entomologist at Cornell University and the Boyce Thompson Institute for Plan Research.

Cecilia Ho is the Transportation Conformity Team Leader in FHWA's Office of Natural and Human Environment in Washington D.C. She manages the implementation of the transportation conformity activities for the FHWA and oversees the development of Federal regulations and national policy and guidance related to transportation conformity. Cecilia has more than 18 years experience in transportation planning and modeling, and transportation and air quality policy development and analysis. Since joining the Federal Highway Administration in 1996, Cecilia has been involved in various transportation, air quality, and policy related projects in areas such as transportation conformity, emissions and dispersion modeling, and strategic planning. Her previous experience, in both public and private sectors, includes regional travel demand forecasting, highway and transit corridor planning studies, congestion management studies, and transportation and land use model development. Cecilia received her Master of City Planning degree from the Georgia Institute of Technology. She is a member of the American Institute of Certified Planners and a member of the TRB Transportation and Air Quality Committee.

Gary Jensen is a 1993 graduate of the University of Idaho with a degree in Civil Engineering. Gary has been with the Federal Highway Administration (FHWA) since 1994, serving time in a variety of offices, including four years in the Tennessee Division managing transportation planning and environmental programs. Currently, Gary is with FHWA's Office of Natural and Human Environment specializing in air quality. In particular, he is actively involved in developing policies and guidance associated with transportation conformity, and providing program and technical assistance to areas facing complex conformity issues.

Susan Lee is the newest member of the Transportation Air Quality Conformity team in Washington, DC and serves FHWA as a Community Planner. Ms. Lee relocated from Portland, Oregon and brings a diverse background in transportation and land use planning; program and policy development; revenue forecasting and finance; and public affairs to the agency. She has held increasingly responsible positions with Metro, the staff agency for the designated MPO in the Portland region; Multnomah County Oregon Transportation and Land Use Planning Division; and the City of Vancouver, Washington. She served as a member of the Transportation Managers Advisory Committee for each of these agencies during development of Portland's Westside light rail transit system and the I-5 Trade Corridor Study. Prior to joining FHWA, she was adjunct faculty in both the Hatfield School of Government and the School of Urban Studies and Planning and conducted grant funded transportation research for the Center for Urban Studies at Portland State University. She holds a BA in Human Resource Management, a Master of Public Administration, and is currently a doctoral candidate completing her dissertation on urban transportation policy and organizational development. She has been an Oregon Laurel Scholar, Women's Transportation Seminar Scholarship, and Eisenhower Fellow recipient.

Cynthia Marvin is the chief of air quality and transportation planning for the California Air Resources Board. Her branch is responsible for coordinating development, approval, and implementation of clean air plans to meet state and federal air quality standards. Her staff also works with local agencies on transportation planning issues, including the conformity provisions of the federal Clean Air Act. In her previous experience since joining the Board in 1988, Ms. Marvin managed the agency's response to the new federal ozone and fine particle standards, as well as the regional haze program. She also served as a technical team leader in the development of regulations to control air toxics. Prior to the Air Resources Board, Ms. Marvin was an officer in a private mortgage-banking firm. Ms. Marvin holds a B.S. in Environmental Toxicology from the University of California at Davis.

Sarah J. Siwek is a private consultant on transportation and air quality issues. She has more than 20 years experience in working with and for local, state, regional, and federal transportation and air quality agencies. Conformity related work includes: TCM evaluation, publications including: FHWA/FTA Basic Guide to Transportation Conformity for Local Officials; FHWA/FTA Transportation Conformity Reference Guide; Metropolitan Transportation Planning: How the Pieces Fit Together; Statewide Transportation Planning Under TEA-21; Integrating Planning and ITS. In addition, Ms. Siwek teaches the NHI/NTI Metropolitan Planning Course and the NTI Introduction to Transportation/Air Quality course. Ms. Siwek has also been a guest lecturer at several universities and has moderated national teleconference on transportation and air quality issues. She is also Chair of the Transportation Research Board Transportation and Air Quality Committee.

Lynn Jonell Soporowski, P.E. is a Transportation Engineering Branch Manager for the Kentucky Transportation Cabinet, in Frankfort, KY. She works for the Division of Multimodal Programs, which guides the transportation planning in Kentucky's urban and metropolitan areas as well as responsible for all regional transportation conformity statewide. Ms. Soporowski received her BS in Civil Engineering from Tennessee Technological University in 1989 and Masters in Civil Engineering at the University of Kentucky in 2002. She continues her education through the Certified Public Managers Training Program. Ms. Soporowski has served on Census 2002: Kentucky's Complete Count Committee and Kentucky's Clean Air Taskforce; KYTC's Citizen Involvement Taskforce, Project Development Taskforce, and Environmental Analysis Taskforce and is an avid spokesperson for rural conformity issues. Ms. Soporowski serves as Co-Chair of the Administrative Council at First United Methodist Church in Frankfort. She is involved with Habitat for Humanity, SIMON House, and spoiling her niece and nephews. Lynn is just returning from a vacation in Poland, Lithuania, Latvia, Estonia, and Russia.

Angela Spickard represents the U.S. Environmental Protection Agency, Office of Transportation and Air Quality (OTAQ) based in Ann Arbor, Michigan, where she serves as a member of OTAQ's transportation conformity team. She works primarily on conformity rulemakings, guidance and implementation issues. Angela came to OTAQ in March 2001 after receiving her master's in environmental biology at Western Michigan University. She is a native of Virginia where she earned her bachelors in biology at James Madison University and worked in biomedical research before moving to Michigan in 1997.

Spencer Stevens is the Transportation Planning Team Leader for the Federal Highway Administration (FHWA) Pennsylvania Division Office in Harrisburg, PA. Mr. Stevens has been with FHWA since graduating from the University of New Hampshire in June of 1990, and has worked in various FHWA offices throughout the country. On his most recent assignment Mr. Stevens was a member of the joint FTA/FHWA metropolitan office in Los Angeles, CA where for two years he covered transportation planning in Southern California for both FHWA and FTA. He and his family moved to Harrisburg, PA in October of 1998. Current responsibilities: Transportation planning Team Leader for FHWA in Pennsylvania.

Tianjia Tang, Ph.D., serves as the air quality specialist in FHWA's Resource Center in Atlanta, GA. Prior to this position, he was a project engineer/manager for the Florida Department of Transportation. During his eight and half year tenure with the FDOT, he also served as a senior environmental scientist for four years. He was mainly involved in preliminary engineering design/planning and NEPA studies. One of his most successful accomplishments was the completion an EIS study in less than 28 months. He has a bachelor's degree in environmental engineering from the University of Central Florida, and a Ph.D. degree from the University of Arkansas.

Domestic Scan Discussion Topics For Site Visits

Planning Assumptions – Please identify and describe the major planning assumptions used in your transportation modeling work and conformity analysis. Include a discussion of the general approach to meeting or attaining the national ambient air quality standards (NAAQS)—reliance on regulation and technology, transportation control measures (TCMs), voluntary emission reductions, etc.

Planning Assumption Process & Procedures – Please discuss with us the process and procedures used to identify, develop, and approve planning assumptions. Include in your discussion of organizational structures, assignment of responsibility, delegation of authority, review and/or approval bodies, and public information and/or involvement opportunities.

Planning Assumption and Interagency Consultation – Describe interagency consultation in this region, include how interagency consultation relates to the planning assumption process and procedures described earlier.

Planning Assumption Data Collection and Updating – Please discuss how and by whom the planning assumptions and related data are developed, collected, and/or updated.

Planning Assumption Application and Modeling – Please discuss how, where and by whom planning assumptions are used in your transportation modeling work and conformity analysis. Identify any relevant calibration, validation, and/or measurement information related to the use of the planning assumptions.

Planning Assumption and MOBILE6 – If your agency has used MOBILE6, please discuss any findings or outcomes of the experience, particularly as they relate to planning assumptions. If you have not yet used MOBILE6, please discuss any concerns you might have regarding the use of MOBILE6 as they relate to planning assumptions.

Planning Assumption Documentation – Please discuss how you document your planning assumptions.

Planning Assumption Resources – Please discuss the resources available to you related to planning assumptions including budget (staff, materials, services), intra and inter agency resources, outside services, etc.

Transportation and Air Quality Planning – Please discuss the participation by transportation interests in the development of the SIP in your area. Similarly, discuss the participation of air quality planning interests in the development of transportation plans and TIPs. Include in your discussion any obstacles and/or benefits of participation, including issues related but not limited to timing/schedule, agency review, etc.

Planning Assumptions Practices – Please share with us some examples of practical experiences and subsequent outcomes related to planning assumptions. Some examples might include, but are not limited to the following:

- What are some of the successes you have had that might be of benefit or serve as model examples to other areas of the country?
- Have you had any experiences that you would use to caution other areas of the country?
- Have you had any major surprises in model outcomes based on planning assumptions and how were they addressed/resolved?
- What has been the most difficult aspect of developing planning assumptions and how have you dealt with them?
- Have you developed any innovations that might have application elsewhere?
- What processes have you used to improve the planning assumption identification, development, and/or application?
- Do you have examples of ways to maximize resources and/or limit costs related to planning assumptions?
- How has the interagency consultation improved or impeded planning assumptions?
- Have you had any significant controversies related to planning assumptions and how did you resolve them?
- Have you encountered any major issues with the introduction of MOBILE6 and how are/have you successfully dealt with those issues?

Transportation Conformity Domestic Scan Participants

PENNSYLVANIA SCAN PARTICIPANTS

AUGUST 15, 2002

Mike Baker, *Pennsylvania Department of Transportation*
Larry Budney, *Environmental Protection Agency Region 3*
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Alfred Sundara, *Tri-County Regional Planning Commission*
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APRIL 29, 2003

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Jerry Campbell, *Environmental Protection Commissions, Tampa*
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Richard McElveen, *Florida Department Environmental Protection*
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NASHVILLE, TENNESSEE SCAN PARTICIPANTS

MAY 1, 2003

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Fred Huggins, *Metro Public Health Department, Pollution Control Division*
Rob Raney, *Metro Public Health Department, Pollution Control Division*
Jeanne Stevens, *Nashville Area MPO*
Matt Meservy, *Nashville Area MPO*
Jane Craig, *Tennessee Department of Transportation*
Theresa Hutchins, *Federal Highway Administration - TN*
Lynorea Benjamin, *Environmental Protection Agency-Region 4*

Suggested Tools

During the scan visits, each area was asked what guidance, technical assistance and/or training the FHWA/FTA/EPA might develop that would be helpful in the conformity process. Below is a listing of those ideas as presented by the scan participants.

Guidance

- Clarification of sub-area budgets and lapse consequences in such areas – Participants indicated an interest in having clarification of what happens in areas where sub-area budgets are in place in the event of a conformity lapse.
- Rural Area Conformity Guidance – FHWA and EPA have recently completed a study of rural areas and anticipate issuing guidance to help these areas understand the conformity requirements for rural areas.
- Tools for new nonattainment areas, especially for off-model analysis. Participants suggested that new nonattainment areas in particular could benefit from the availability of off-model tools for analysis, especially to estimate the impacts of transportation control measures on emissions.
- Improved definition of fiscal constraint for the plan – The working definition of fiscal constraint may be different in different areas. Participants in the scan project indicated an interest in a consistent definition.
- Definition of travel on ramps for use in MOBILE6 – MOBILE6 includes default information on travel on highway ramps. In some areas, this information is not representative of the area and it was suggested that more assistance on collecting or adopting local information could be helpful.
- Better information and data on freight travel – Information on freight travel is lacking in many areas and local or regional studies are often needed to understand local conditions and freight characteristics.
- Tool to define FHWA vehicle class profiles using the 28 vehicle types in MOBILE6
- Vehicle age distribution data sources that do not require VIN decoder software (e.g., I/M program data)

Training/Capacity Building

Technical Assistance

- Documentation Process for model inputs and changes – During the scan project, a number of examples were cited in the importance of good documentation for model inputs and changes to inputs. Participants suggested that this is an area where good practice is replicable and could help MPOs in carrying out their responsibilities.
- Peer exchange between MPOs, Technology Transfer, Information Clearinghouse – The FHWA has established the Conformity-Community of Practice website in an effort to provide and share information among conformity stakeholders.
- Resources for Legal Costs and the right to designate a single point for review by outside interests in the conformity process – These issues were raised in an area that has expended a considerable amount of time and money on issues related to litigation.

Feedback from the Domestic Scan Memembers

Regina Aris

Baltimore Metropolitan Council

Participating on the Conformity Scan team allowed me the opportunity to understand the issues in greater depth and meet knowledgeable individuals that can be a resource in the future. Also of significance was the creativity of MPOs in collecting or identifying data; there are productive partnerships that reduced the cost of accessing data. Finally, sharing what we learned through a report on the FHWA website allows many others to benefit as I did.

Eddie Dancausse

FHWA NC Division

Being a team member on the conformity domestic scan project (CDSP) has been one of the best learning/training opportunities that I have had in my 3 years of work with FHWA and the air quality (AQ) conformity business. The CDSP provided me the opportunity to visit and explore how 6 different States/Metropolitan Planning Organizations dealt with AQ conformity and the processes/tools that contributed to successful conformity determinations. The CDSP also allowed me to establish contacts with transportation/conformity professionals and has opened up a network of individuals that I can consult with on future AQ issues.

Spencer Stevens

FHWA PA Division

It was enlightening to see that the struggles we have with Air Quality conformity in Pennsylvania are similar to those faced in the other scan sites. I now have a much better understanding of the interagency consultation process as it is performed in other regions, and was pleased to see a correlation between the intensity of consultation sessions to the severity of the air quality nonattainment in the region. While Pennsylvania has some air quality issues, ours are not so severe that bi-weekly consultation meetings are warranted.

One of the scan sites in particular struck a cord with me. I have already scheduled an FHWA funded peer exchange for the two MPO directors we spoke with in Tampa, FL to attend our annual Pennsylvania Fall Planning partners conference to speak about their collaborative and cooperative approach to transportation planning. I was struck by the fact that this mega region sees itself as a grouping of smaller MPOs sharing one travel demand model, one air quality conformity model and collaborative data collection. I hope to bring this type of regional thinking back to Pennsylvania.

Charles Baber

Baltimore Metropolitan Council

Participated in the air quality data scan of the Dallas and Atlanta MPOs. At both locations, observed that communication and cooperation between MPO staff, local, state and federal agencies provided for effective technical and policy decisions in determining conformity. In Dallas, this was accomplished in the use of a joint letter between local and state agencies submitted to the federal agencies describing the technical method and assumptions in the upcoming conformity analysis. In Atlanta, greater communication between project sponsors, MPO staff and the state air agency are taking place to ensure consistent use of planning assumptions in SIPs and conformity determination.

Both locations at the time were still in the early stages of understanding MOBILE6 and were not required to conduct a conformity analysis using the MOBILE6 software for a two year period. Dallas was interested in understanding the sensitivity of the various inputs and would concentrate on developing local inputs on the more sensitive assumptions. Atlanta appeared to be relying more on the state air agency in the development of emission estimates using MOBILE6.

Dallas maintained and analyzed an extensive list of Transportation Emission Reduction Strategies (TERMS). It was my understanding that the state air agency considered the implementation of programmed TERMS in the establishment of the mobile emission budget in the SIP. TERMS related to non-recurring delay are credited in the conformity analysis. This credit is used to offset emissions associated with non-recurring delay which is estimated to be 50 percent of recurring delay.

Atlanta uses the land use model DRAM/EMPAL in the forecasting of demographic data at a super zone level and a Zone Allocation Program (ZAP) to distribute the estimated demographic data at the TAZ level used in transportation and air quality planning. Atlanta had just finished a major update to the travel model and provided documentation of the validation.

Kip Billings

Wasatch Front Regional Council

In addition to the information gained for the Conformity Scan best practices report, the visits to other urban areas gave me an opportunity to learn how different agencies deal with some of the same issues faced by the Wasatch Front Regional Council in regards to travel modeling and air quality conformity. By comparing the methods for travel modeling and conformity analysis employed by WFRC with those of other areas I was able to identify some points where WFRC could improve its process and other points where I found that our methods appear to be very much state of the practice.

■ **Accident data** - One very helpful emissions modeling tip I picked up was the use of accident data to identify the percentage of vehicles traveling in the non-attainment area from counties that do not have an emissions testing program. This tip was discovered during our visit to Harrisburg, PA. Our emissions modeling has undergone some criticism for omitting this detail. In the past our position has been that the influence on total emissions is small and data to document it is not readily available. It may still be true that the impact is small, but available accident data by county is a fairly convenient means to estimate the percentage of vehicles not subject to emission testing. WFRC will incorporate this detail into future emission modeling efforts.

■ **Limited TIP updates** - The Nashville MPO has been successful in limiting conformity analysis to Plan updates. Conformity analysis for the TIP is then a simple matter of identifying TIP projects as those coming directly from the Plan. Nashville has been successful with this simplified TIP conformity not only in the first year of the plan, but also the second and third years until a new Plan is required. This is evidence of good planning and cooperation with other state and local transportation agencies. WFRC would like to imitate this practice and get away from our current habit of amending the TIP more frequently than once per year and amending the Plan more frequently than once every three years.

■ **No TCMs in SIP** - It was reassuring to discover that each area we visited had a firm policy similar to that at WFRC of not including Transportation Control Measures (TCMs) in the SIP. The reasons for this policy were also similar to those expressed by WFRC. Including a TCM in the SIP carries a heavy legal commitment that the TCM must receive priority funding and must remain on schedule. The benefits of a TCM can just as easily be achieved but with greater flexibility by identifying them in the TIP or Plan as needed.

■ **Conformity automation** - Some of the areas we visited rely on time consuming and error prone manual processes to prepare and process data for the conformity analysis. Some areas reported that conformity analysis takes weeks or even months to complete. The exception may be Pennsylvania where they have developed, through a private contractor, the ability to prepare MOBILE6 input files using software prepared for Pennsylvania which prepares the needed input files from the travel model data. WFRC has developed similar though less sophisticated procedures to accomplish this same MOBILE6 data preparation task.

■ **MOBILE6 detail** - WFRC has also had the good fortune to work with early drafts of the MOBILE6 model and was able to use that time to prepare in-house software that prepares MOBILE6 input files directly from the travel model data. In doing this, WFRC has taken full advantage of the increased detail available in MOBILE6 VMT profiles by speed category, hour, and facility type. Some of the areas visited during the scan are applying MOBILE6 default values or are merely using limited Mobile5 data processed in MOBILE6 format. For example, in some cases a single speed value used in Mobile5 is represented as a Aprofile@ of two or three speed bins in MOBILE6. These procedures are acceptable in MOBILE6 but hardly take advantage of the new capabilities of MOBILE6 which will ultimately make this model more accurate, faster to use, and easier to defend.