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Conformity Policy: Air Quality Impact Assessment for Local Transportation Projects

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Abstract:

Under the requirement of the Clean Air Act (CAA), states are required to prepare air quality plans that outline how areas currently violating national ambient air quality standards (non-attainment areas) will achieve the standards and will avoid future significant deterioration of their air quality. On November 24, 1993, the U.S. Environmental Protection Agency (USEPA) adopted the transportation conformity rule (Rule), pursuant to Section 176(c)(4) of the CAA. The Rule requires that transportation plans, programs and projects funded or approved by the federal government of their agents under Title 23 (Highways) U.S.C. or the Federal Transit Act conform with state or Federal air quality implementation plans.

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**Conformity Policy: Air Quality
Impact Assessment for Local
Transportation Projects**

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March 1998

by

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**CONFORMITY POLICY:
AIR QUALITY IMPACT ASSESSMENT
FOR LOCAL TRANSPORTATION PROJECTS**

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DISCLAIMER

The conclusions, findings, and recommendations presented in this report reflect the views of the authors who are responsible for the facts and the accuracy of the information presented. The contents do not necessarily reflect the official views or policies of the State of California or Caltrans.

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NEW DEVELOPMENTS AND IMPACTS ON THE CONFORMITY PROCESS

A Supplement to Conformity Policy:
Air Quality Impact Assessment for Local Transportation Projects

NEW DEVELOPMENTS IN THE 1993 CONFORMITY RULE

Since 1993, there have been several developments in the Conformity Rule. This section includes a description of each change.

General Preamble for Exemption from Nitrogen Oxides Provisions (June 17, 1994)

The U.S. Environmental Protection Agency (USEPA) clarified with this general preamble that "nonclassifiable (i.e., submarginal, transitional, and incomplete/no data) ozone nonattainment areas that are outside the Northeast ozone transport region and have ambient monitoring data demonstrating attainment of the national ambient air quality standard for ozone may be exempted from the Conformity Rules' nitrogen oxides (NO_x) requirements" (USEPA, 1994). This general preamble simply clarifies the nitrogen oxides requirements contained in the Conformity Rule (Rule) and increases the ease of implementation.

The First Amendment: Transition to the Control Strategy Period (August 8, 1995)

This amendment fixed the timing of some consequences of State Implementation Plan (SIP) deficiencies under the Rule with the imposition of the Clean Air Act (CAA) highway sanctions. For the State Implementation Plan (SIP) deficiencies described, conformity lapses were delayed until the CAA section 179(b) highway sanctions became effective: 1) ozone nonattainment areas with an incomplete 15 percent emissions-reduction SIP with a protective finding; 2) incomplete ozone attainment three percent rate-of-progress plan or finding of failure to submit an ozone attainment three percent rate-of-progress plan; and 3) areas whose control strategy implementation plan for ozone, carbon monoxide, particulate matter, or nitrogen dioxide is disapproved with a protective finding (USEPA, 1995a). This delay in the lapse in conformity for the SIP deficiencies listed above was allowed because the USEPA realized that, in practice, the time allowed to correct the SIP deficiencies was "too short to be reasonable for purposes of determining when transportation plans and [Transportation Improvement Programs] TIPs should lapse following SIP development failures" (USEPA, 1995a). Prior to the amendment, new highway and transit project approvals, for instance, would have been delayed due to a lapse in the conformity status.

This amendment to the Rule generally makes it easier and less costly for State and local governments to implement the Rule without undermining its effectiveness. In certain instances, the amendment allows for a delay in conformity lapses, and in some instances, avoids highway and transit project approval delays.

Second Amendment: Miscellaneous Revisions (November 14, 1995)

This amendment made a variety of changes to the Rule. First, it permitted the implementation of Transportation Control Measures (TCMs) from approved SIPs during a conformity lapse. Second, it "aligned the date of conformity lapses with the date of application of CAA highway

sanctions for any failure to submit or the submission of an incomplete control strategy SIP" (USEPA, 1995b). Third, the grace period was extended for submissions of control strategy implementation plans for purposes of a conformity determination. Fourth, a grace period was established for transportation plan and program conformity determinations in new nonattainment areas. Fifth, the nitrogen oxides provisions of the transportation Conformity Rule were corrected, making them consistent with the CAA and prior USEPA commitments.

This amendment allows for a delay in conformity lapses and an extension of the grace periods, which could make conformity less costly to implement from the perspective of state and local governments. According to this amendment, CAA highway sanctions would still be imposed, maintaining the integrity of the Rule. This amendment also allows for TCM implementation during conformity lapses. Since TCM implementation should generally improve air quality, it would make good sense to implement TCMs during a conformity lapse.

Amendments and Final Rule (Summer 1997)

Below follows a general overview of the final transportation conformity amendments (final rule).

State and local governments have more authority in setting the performance measures used as tests of conformity.

- There is more flexibility for States to use their emissions budgets before USEPA has approved their air quality plans.
- Areas that are not required to develop emissions budgets have more flexibility to choose among several conformity tests.
- Rural areas have flexibility to choose among several conformity tests for years beyond the timeframe of the air quality plan.

State and local governments have more discretion when the transportation plan does not conform to the state air quality plan.

- State and local governments have more flexibility to use their own money and approval authority.
- Previously planned federal transportation projects can be approved and funded following USEPA disapproval of a state air quality plan.

Specific modeling requirements apply only to large, urbanized areas. Other areas can select regional models through the consultation process (FHWA, 1997).

Below follows highlights of changes in the final transportation Conformity Rule.

The regulatory text is streamlined and clarified.

- Separate sections for transportation plans, TIPs, and projects are now integrated into one section.
- Applicability of particular conformity criteria is described by pollutant and nonattainment classification (for easier reference).

The build/no-build test is eliminated when SIP budgets have been submitted.

- Submitted SIP budgets are the primary measure of conformity, even before USEPA approves them through formal rulemaking.
- Newly submitted SIPs replace the build/no-build and other emission reduction tests after a 45-day adequacy review period by USEPA.
- If an existing approved SIP is in place, the submitted SIP will override the existing one when it is approved.

There is more flexibility even where there are no submitted SIP budgets.

- Areas that are not required to submit SIP budgets can either satisfy the build/no-build test, or show that emissions are less than or equal to 1990 levels.
- The first analysis year for the build/no-build test can be any year that is no more than five years away.
- Maintenance plan budgets can be used after they are submitted (and before USEPA approval).

State and local governments can approve previously planned non-federal projects when there is no currently conforming transportation plan and TIP (or supporting regional emissions analysis).

- A non-federal project can be approved and advanced during a lapse if it is from the first three years of the most recent conforming plan and TIP (or supporting regional emissions analysis).

Requirements for network modeling are limited to large, urban areas.

- Network modeling is required in serious and above ozone and CO nonattainment areas with an urbanized population greater than 200,000. Areas currently using network models continue to use them.

Rural areas have flexibility to choose among several conformity tests.

- When demonstrating conformity for years beyond the timeframe of the attainment SIP or maintenance plan, rural areas can choose among the following tests:
 - the budget test;
 - the build/no-build and/or other emission reduction tests (depending on what is required of the area's classification);
 - air quality modeling to demonstrate that violations will not be caused or worsened.

Consequences of USEPA disapproval of a SIP are less severe.

- Following USEPA disapproval of a SIP without a protective finding, projects from the first three years of the currently conforming transportation plan and TIP could proceed.

Existing SIP policy for SIP/plan timeframe "mismatch" is retained.

- Conformity must be demonstrated for a 20-year timeframe.
- Existing policy allows SIPs to establish motor vehicle emissions budgets for conformity purposes for years outside the timeframe that the SIP normally addresses.
- Such budgets are subject to less stringent requirements, i.e., these budgets can contain enforceable commitments to approve control measures in the future.

Modeling requirements have been streamlined and clarified with these final amendments. Additional guidance will be issued in the future.

REFERENCES

FHWA (1997); *Transportation Conformity Amendments: General Overview of the Final Rule*. U.S. Department of Transportation.

USEPA (1994); *Conformity; General Preamble for Exemption from Nitrogen Oxides Provisions*. Federal Register. 59 (166):31238-31241.

USEPA (1995a); *Transportation Conformity Rule Amendments: Transition to the Control Strategy Period*. Federal Register.

USEPA (1995b); *Transportation Conformity Rule Amendments: Miscellaneous Revisions*. Federal Register. 60 (219):57179-57186.

INTRODUCTION

Under the requirement of the Clean Air Act (CAA), states are required to prepare air quality plans that outline how areas currently violating national ambient air quality standards (non-attainment areas) will achieve the standards and will avoid future significant deterioration of their air quality. On November 24, 1993, the U.S. Environmental Protection Agency (USEPA) adopted the transportation conformity rule (Rule), pursuant to Section 176(c)(4) of the CAA. The Rule requires that transportation plans, programs and projects funded or approved by the federal government or their agents under Title 23 (Highways) U.S.C. or the Federal Transit Act conform with state or Federal air quality implementation plans. Federal transportation planning regulations contain reciprocal language (40 CFR §450.312(d)), stipulating that the Metropolitan Planning Organization (MPO) shall not approve any plan or program that does not conform to the state implementation plan (SIP) as determined in accordance with the Rule.

The Rule is designed to ensure that the assumptions and projections employed in developing long-range regional transportation plans are the same as those used in developing the SIP for attainment of air quality standards. The linkage between assumptions ensures that transportation and air quality planning are coordinated. By ensuring that all of the transportation programs and projects identified in short-term transportation improvement programs (TIPs) have been included in the regional transportation plan, the emissions impacts from all projects will have to be accounted for in the air quality modeling used in SIP development. Transportation conformity assures that the 3C (cooperative, comprehensive, and continuing) transportation planning process is truly rational and comprehensive on an urban scale.

Conformity applies to such transportation projects as: intersections, ramp metering, lane additions, toll roads, bottleneck relief, high occupancy vehicle projects, park-n-ride construction, port and airport improvements affecting the highway system, bridges, bus terminals,¹ transit projects, etc. All transportation projects that are implemented or approved must be included in the TIPs, and the long range transportation plan. Hence, the conformity process ensures that the implementation of the local projects (collectively) will not interfere with attainment of the regional air quality standards. Furthermore, each project must be demonstrated not to interfere with the attainment and maintenance of local air quality standards for carbon monoxide and PM₁₀ through project-level analysis. Projects that were not included in the transportation plans and regional SIP analyses may not proceed until analyses demonstrate that no negative air quality impacts will result. Hence, the conformity process also ensures that the implementation of the local projects (individually) will not interfere with attainment of the local air quality standards

The Rule stipulates that a federal agency shall not, in any way, support a non-conforming project. Thus, the CAA requires agencies to make a positive conformity finding (not merely the absence of a negative conformity finding) before a project may proceed: "The assurance of conformity...shall be an affirmative responsibility of the head of such department, agency, or instrumentality" (42 U.S.C.A. §7506(c)(1)). Both the U.S. Department of Transportation (USDOT) and the USEPA stand behind the Rule (Shrouds, 1994). A finding of non-conformance stops highway projects, transit plans, and transportation control measures (TCMs).

Thus, from both a transportation and air quality perspective, it is critical that conformity determinations be made quickly and efficiently.

Conformity tests that must be met for local projects include: 1) the project must be specifically included in both the TIP and the regional transportation plan; 2) the regional conformity analysis must have been performed, and the assumptions for the regional analysis must be clearly outlined; 3) a local project assessment must be performed using the current modeling methodologies and assumptions carried forward from the regional analysis; and 4) the results of the local project assessment must demonstrate that the project will not cause or contribute to a violation of the local pollutant standard.

Policy Research Goals

This project was undertaken by the Institute of Transportation Studies at Davis (ITS-Davis) for the California Department of Transportation (Caltrans). The Rule's development process has been highly politically charged. ITS-Davis was asked to undertake this project for three reasons to: 1) provide objective opinions from individuals outside the purview of agencies responsible for implementing the Rule;² 2) identify and discuss technical issues associated with emissions modeling that should be considered in implementing the Rule; and 3) explore potential institutional conflicts that may arise in implementing the Rule.

The primary goal of the overall project was to develop a conformity modeling protocol for project analysis. The protocol, or guidance document, provides information necessary for an analyst to evaluate the potential air quality impacts of a project in a manner that meets USEPA/Federal Highway Administration (FHWA) approval and is published under separate cover (Garza, et al., 1996). In preparing the technical modeling protocol, an assessment of the adequacy of emission rate and pollutant dispersion models was undertaken, as well as additional original analyses designed to answer questions that were raised by earlier research efforts at ITS-Davis (Guensler, et al., 1994; Chang, et al., 1994; Guensler, 1993). The development of the local project carbon monoxide assessment protocol involved numerous separate efforts designed to: 1) identify the regulatory requirements that must be met through modeling procedures; 2) evaluate the predictive capabilities of the emissions impact models that would be applied in meeting the regulatory obligations; and 3) prepare guidance for emissions modelers based upon the review and assessment stages. The final modeling protocol includes guidelines for project description parameters, model selection criteria, data collection, recommended default values, and cautionary notes and advice to analysts. The final modeling protocol (Garza, et al., 1996) is based upon assessment of state-of-the-practice modeling tools and findings related to modeling uncertainty.

However, before the technical modeling guidance document could be developed, the research team undertook a comprehensive review of the Rule and applicable conformity literature to determine where, when, and under what conditions, conformity findings for local projects must be made. This policy document comprises the results of the policy-related research undertaken for project level conformity. A review of the appropriate federal state and local conformity

publications, the USEPA's docket of public comments, related environmental regulations, and the project assessment modeling literature was undertaken to identify potential issues that would be addressed in this report.

Report Organization

The first section of this policy document outlines the conformity process and the specific requirements that must be met in making conformity determinations under the CAA and the subsequent conformity rules promulgated by the USEPA and the USDOT.

With the strengthening of the conformity process under the CAA and subsequent final rulemaking by the USEPA and the USDOT, the roles of the federal National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) in transportation project assessment have also changed. The strengthened link between the conformity process and requirements of NEPA was identified as a critical issue. Given the statutory requirements for conformity process completion, NEPA process completion, and public comment periods, the intent of the Rule appears to encourage project conformity determinations to be made through the NEPA process (and CEQA process in California). The second section of this document addresses NEPA/CEQA requirements and provides guidance that will aid in understanding how the conformity process is interrelated with the environmental impact assessment process. The NEPA/CEQA section explains the environmental assessment process and highlights the relevance of specific conformity requirements in preparing an environmental impact statement (EIS) under NEPA and an environmental impact report (EIR) under CEQA. This section also explains the relationship between the quantitative analysis requirements of NEPA and CEQA and the more specific modeling procedures of the Rule, discussed in the subsequent technical manual (Guensler, et al., 1994). The technical manual highlights the importance of determining the air quality significance of a project and assessing the consistency of the project with regional plans.

The third section of the report addresses the importance of a comprehensive and stringent adherence to the mandates of both the Rule and NEPA/CEQA. The role of public involvement and the specter of citizen suits under the provisions of both the CAA and NEPA/CEQA are discussed. Potential litigation points under the CAA, NEPA, and CEQA are identified and explained. This section also reviews a number of legal cases that appear relevant to CAA conformity determinations and NEPA/CEQA environmental assessments, such as meeting inventory estimates in SIPs and the role of scientific evidence (i.e. modeling results) in litigation. This review indicates when NEPA and CEQA court cases might be referenced by litigants in an effort to counter conformity determinations.

In the final section of this policy report, the findings of the technical modeling studies reported in Guensler, et al. (1994) are summarized: 1) the outputs of the current project assessment models are highly uncertain because the emission rate models were not designed to provide corridor emission rates, and there is inherent uncertainty in the vehicle activity and dispersion model data employed in the analyses; 2) since the model outputs are uncertain, analysts should not conclude that a modeled result, which shows an emission increase or emission decrease associated with a

project, is accurate; 3) significant modeling improvements are required if the available project assessment models are to be used to accurately assess project-specific emissions; and 4) a nomograph system that recognizes model limitations should be prepared for determining when project-level analyses are superfluous under conformity.

This report concludes with a summary of the relevant policy issues associated with project assessment under the Rule. First, the modeling that must be undertaken is identified and framed in terms of the level of accuracy that models can achieve. Second, the importance of undertaking the conformity and NEPA processes concurrently for projects so that statutory requirements can be met on schedule is re-emphasized. Finally, the potential for litigation of conformity findings appears tremendous, indicating that implementing agencies need to work quickly through the public process to develop guidelines (that take into account the capabilities of the existing emission models) for determining when it is reasonable to dispute a conformity determination.

CONFORMITY OF TRANSPORTATION PLANS, PROGRAMS, AND PROJECTS

In general terms, conformity is the assurance that transportation plans and air quality management plans are consistent, ensuring that TIPs and individual projects have been appropriately accounted for in the development of the air quality management plan. Conformity with respect to an implementation plan means: 1) the transportation plans will help to eliminate or reduce the severity and number of violations of the National Ambient Air Quality Standards (NAAQS), and 2) the transportation activities will not cause or contribute to new violations of standards in any area, nor increase the frequency or severity of existing violations in any area, nor delay attainment (i.e., increase emissions) of any standard or required interim emission reduction or other milestone in any area (42 U.S.C.A. §7506(c)(1)).

In the 1970 CAA, Congress advanced the concept of NAAQS to protect the health and well being of citizens (42 U.S.C.A §7409(a)). Primary standards were set to protect public health. Secondary standards are less stringent and protect the public from "any known or anticipated adverse effects associated with the presence of [air pollutants] in the ambient air" (42 U.S.C.A. §7409(b)(2)). These health-based air quality standards, untempered by economic "feasibility," were adopted by the USEPA. Not surprisingly, Congress intended the NAAQS to be the ultimate regulatory goal and measure of programmatic success of the CAA (Schoenbaum & Rosenberg, 1991). Failure of many areas to attain these standards spurred the 1977 CAA Amendments.

In the 1977 amendments to the CAA, Congress adopted initial conformity provisions to emphasize that air quality and transportation agencies must strive to conform with the NAAQS commitments that are established in SIPs. These provisions, however, consisted of only 13 lines and did little to actually define conformity.

The Clean Air Act Amendments of 1990 resulted in changes in the procedures for determining compliance of TIPs with SIPs. The USEPA and the USDOT were tasked with developing a regulation that would implement the general conformity language of Section 176 of the CAA (42 U.S.C.A. §7506(c)(4)(A)). The conformity provisions in Section 176(c) make it the affirmative

responsibility of the Federal agency (or its designee) supporting an action to ensure that the action conforms to an approved or promulgated air quality implementation plan. The Rule prohibits the agency from approving any transportation plan, program, or project that does not conform to such a plan. Typically, it is the MPO or state Department of Transportation (DOT) that must make the affirmative declarations that the regional plan, TIPs, and projects conform with the SIP. Many policymakers view the changes in the conformity language that resulted from the 1990 CAA Amendments as simply a clarification of the intent of the existing conformity language (Brucker, 1994).

This section summarizes the requirements of the USEPA's transportation conformity rule, entitled "Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act," published in the Federal Register on Wednesday, November 24, 1993. The Rule (see Appendix A) comprises 40 CFR Parts 51 (Subpart T) and 93 (Subpart A). Although the section numbers differ, the text of parts 51 and 93 are identical, with the exception of 40 CFR §51.396.³

Applicability of Conformity

The Rule applies to regional transportation plans (covering at least a 20 year time horizon and updated triennially in nonattainment and maintenance areas, per 23 CFR §450.322(a)); TIPs (containing the specific implementation program of the regional plan and typically covering a three year time horizon per 23 CFR §450.324, but covering seven years and revised every two years per Gov. C.A. §65082 in California); and FHWA/Federal Transportation Administration (FTA) transportation projects in all nonattainment and maintenance areas.⁴ The Rule, as originally written, does not apply to attainment areas.⁵

Conformity specifically applies to FHWA/FTA transportation projects, defined as projects that are proposed to receive funding assistance and approval through the Federal-Aid Highway program or the Federal mass transit program, or requires FHWA or FTA approval for some aspect of the project, such as connection to an interstate highway or deviation from applicable design standards on the interstate system.⁶ Further, specific aspects of the Rule apply to projects that are funded or approved by a recipient of federal transportation funds (the Intermodal Surface Transportation Efficiency Act (ISTEA), Title 23 (Highways) funds, or Federal Transit Act funds), whether or not the project itself is directly funded (40 CFR §51.450; 58 FR 62204; Sargent, 1994). Essentially, an agency does not have to provide funding for the project; conformity demonstrations are still required if the federally supported agency must take an action on the project, such as granting a permit approval.⁷ Even in the cases where a recipient of federal funds neither funds nor approves a regionally significant project, the project must appear in the transportation plan and TIP analyses (Sargent, 1994).

The definition of "regionally significant" is pivotal in the applicability of conformity. Regionally significant projects are defined in both the transportation conformity regulation (40 CFR

§51.392) and the transportation planning regulation (23 CFR §450.104). Both of these definitions provide that:

A Regionally Significant Project means a transportation project (other than an exempt project) that is on a facility that serves regional transportation needs (such as access to and from the area outside the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network, including, at a minimum, all principal arterial highways and all fixed guideway transit facilities that offer a significant alternative to regional highway travel.

In most urban areas, the definition of regionally significant projects would make conformity requirements applicable to: arterial intersections, freeway ramp metering, arterial and freeway lane additions, toll roads, arterial and freeway bottleneck relief, high occupancy vehicle (HOV) projects, park-n-ride construction, port and airport improvements, bridges, bus terminals, and transit projects, etc.

However, the Rule's consultation process indicates that the definition of a regionally significant project should be based upon the output of the agency consultation process (40 CFR §51.402(c)(2); Pallarino, 1994), allowing for the input of consulting agencies into a set of criteria that will be used to make the 'significant project' determination. Under this process, it is possible that regional significance could vary from state to state or area to area, depending upon how the agencies collectively implement the definition.⁸

Certain projects subject to NEPA have been grandfathered and are exempt from conformity requirements if at least one of the following has occurred between November 24, 1990 and November 24, 1993: 1) the NEPA process is complete; 2) the start of the final design has occurred; 3) significant acquisition of right of way has occurred; or 4) project plans, specifications and estimates have been approved (40 CFR §51.394(c)(1)). New conformity determinations will be required for grandfathered projects: 1) if there is a significant change in project design concept and scope,⁹ 2) if a supplemental environmental document for air quality is initiated, or 3) if no major steps to advance the project has occurred in the past three years (40 CFR §51.394(c)(2)).

Applicability of Specific Provisions by Area and SIP Status Classification

To determine the specific Rule provisions that apply to a local area two factors must be known: 1) the SIP status (submitted, approved, disapproved, or incomplete), indicating which conformity period applies to the local area, and 2) the transportation provisions applicable to the area's attainment designation.

Conformity determinations are made during four USEPA-defined time periods. *Phase II of the interim period* extends until the SIP is submitted to the USEPA or until the CAA specifies these plans are due, whichever comes first. The *transitional period* lasts from when the plan revision is submitted to the USEPA until the USEPA approves or disapproves the plan. The *control strategy period* exists from the time that the USEPA approves the plan until the area submits and the USEPA approves redesignation to an attainment area. Finally, the *maintenance period* begins when the USEPA approves redesignation to an attainment area and lasts 20 years. Different conformity requirements apply during Interim Phase II, Transitional, Control Strategy, and Maintenance Periods (40 CFR §51.392), as defined below:

Phase II of the interim period (“Interim Period”) with respect to a pollutant or pollutant precursor means that period of time after November 24, 1994, extending until the earlier of the following: submission to USEPA of the relevant control strategy implementation plan revisions that have been endorsed by the Governor (or his or her designee) and have been subject to a public hearing, or the date that the CAA requires relevant control strategy implementation plans to be submitted to USEPA, provided USEPA has notified the State, MPO, and USDOT of the State's failure to submit any such plans. This definition is different than the proposed rule that would have extended the Phase II period to include the time from SIP submission to SIP approval, which is now covered in the transitional period.¹⁰

Transitional period, with respect to a pollutant or pollutant precursor, means that period of time that begins after submission to USEPA of the relevant control strategy implementation plan that has been endorsed by the Governor (or his or her designee) and has been subject to a public hearing. The transitional period lasts until the USEPA takes final approval or disapproval action on the control strategy implementation plan submission or finds it to be incomplete. The action that USEPA takes on the SIP submittal triggers a variety of Rule requirements, depending upon when the plan was submitted and what portions were approved, deemed incomplete, or disapproved. Readers are cautioned to read 40 CFR §51.448 very carefully and determine which requirements apply to the local situation. In general, if the USEPA disapproves the submitted control strategy implementation plan revision, the conformity status of the transportation plan and TIP shall lapse 120 days after USEPA's disapproval, and no new project-level conformity determinations may be made (a 12-month period is allowed if the reasons for USEPA disapproval were associated only with the enforceability of the adopted control strategy).

Control strategy period, with respect to the applicable pollutants, means that period of time after the USEPA approves control strategy implementation plan revisions containing applicable control strategies. This period ends when a state submits and the USEPA approves a request under section 107(d) of the CAA for redesignation to an attainment area, beginning the maintenance period.

Maintenance period, with respect to a pollutant or pollutant precursor, means that period of time beginning when a State submits and the USEPA approves a request under section 107(d) of the CAA for redesignation to an attainment area, and lasting for 20 years, unless the applicable implementation plan specifies that the maintenance period shall last for more than 20 years.

This volume examines the long-term policy implications of the Rule. Most of the differences between the requirements that apply during different SIP status periods are discussed in the body of this policy document. Nevertheless, the focus of this policy document is on the actions associated with the projects that must be taken on an ongoing basis.

Content of Transportation Plans

The final rules for statewide and metropolitan planning were codified by FHWA under 23 CFR 450 and 49 CFR 613 on October 28, 1993.¹¹ In serious carbon monoxide nonattainment areas (and serious severe or extreme ozone nonattainment areas), transportation plans adopted after January 1, 1995, must: 1) quantify and document demographic and employment factors influencing expected transportation demand, including land use forecasts (in accordance with the consultation protocol to be approved and submitted as a component of the SIP revision); 2) discuss in detail the existing and future highway and transit system; 3) identify and describe the transit and highway system modifications and additions sufficient for highway and transit modeling purposes; 4) describe the future transportation system in sufficient detail “to show that there is a reasonable relationship between expected land use and the envisioned transportation system;”¹² and 5) include other future transportation policies, requirements, services and activities (40 CFR §51.404). Moderate areas for CO or ozone nonattainment that are reclassified to serious must meet the requirements outlined above within two years of the reclassification.

Transportation plans and TIPs must be “fiscally constrained consistent with [US]DOT’s metropolitan planning regulations” (40 CFR §51.408). State transportation plans must summarize resource needs and the TIPs must then be financially constrained by year, with current and proposed revenue sources defined. Funding sources must ensure funding availability and should demonstrate a proven track record for the area. The MPO may fiscally constrain projects to an even greater extent than the state (e.g., if the state revenue projections appear overly-optimistic, the MPOs can lower the funding availability levels if they believe the new values to be more realistic (USEPA, 1994)). Note, if the plan is properly fiscally restrained, it will not be possible to add a project unless another project is removed from the plan.

The USEPA and the USDOT will decide a grace period following the specification of a new model. This period will be at least three months but not longer than 24 months depending on the changes in the model. If emissions analyses for the conformity determination begin before or during the grace period, then the model may continue to be used for transportation plans and TIPs. The time limit on the grace period is three years from the time a draft environmental document is issued (40 CFR §51.414).

“The transportation plan, TIP or FHWA/FTA project which is not from a conforming plan and TIP must provide for the timely implementation of TCMs from the applicable implementation plan”(40 CFR §51.418). For transportation plans, this is accomplished if the future transportation system proves timely implementation of all TCMs in the applicable implementation plan that are eligible for funding under title 23 U.S.C. or the Federal Transit Act or if nothing in the plan interferes with the implementation of any TCM in an implementation plan. The TCMs must be consistent with the plan. For TIPs, this is satisfied if: 1) funded TCMs under title 23 U.S.C. or the Federal Transit Act are on or ahead of schedule, or if the TCMs are behind schedule, the problems have been identified and will be overcome (However, if funding for TCMs has not been obligated and the TCMs are behind schedule, then the TIP cannot be found to conform.); and 2) nothing in the TIP or FHWA/FTA project interferes with implementation of any TCM (40 CFR §51.418). The TIP must show that TCMs are on-schedule (or that problems preventing the timely implementation are being corrected). The Rule does identify that delays may occur, but these delays cannot be due to funding, staffing or other agency-preventable problems (USEPA, 1994). If TCMs are not on schedule or being replaced by new TCMs, then a conformity determination cannot be made nor SIP revisions approved.

Motor Vehicle Emission Budgets

In developing SIPs, a four step process is employed: 1) an emission inventory is developed, providing estimates of hourly emission totals for each source category with spatial and temporal resolution; 2) regional modeling is undertaken to determine the amount of emission reductions that are needed to attain the standards; 3) a variety of emission control strategies are investigated for their potential to reduce emissions by source category; and 4) a phased plan is developed to implement combinations of emissions control strategies over time (based upon cost-effectiveness analysis) that will minimize the social costs of obtaining the necessary emission reductions to comply with the ambient air quality standards. The emission control strategies are adopted by the air quality management district and implemented in accordance with the schedule developed in the SIP. Emission budgets are the specific emission estimates allocated to each source category at any given time. For example, if the 1994 baseline emission budget for petroleum refineries was 100 tons/day and a 50 percent reduction in emissions is planned in the SIP for this source category, the SIP horizon year emission budget would be 50 tons/day in the year 2010.

Emission budgets are established and allocated for stationary and mobile sources and are used in demonstrations within the attainment SIP or the 15 percent annual reduction SIP. The SIP must contain an emission budget for mobile sources. The motor vehicle emission budget is described as the “portion of the total allowable emissions defined in a revision to the applicable implementation plan (or in an implementation plan revision that was endorsed by the Governor or his or her designee, subject to a public hearing, and submitted to USEPA, but not yet approved by the USEPA) for a certain date for the purpose of meeting reasonable further progress milestones or attainment or maintenance demonstrations, for any criteria pollutant or its precursors, allocated by the applicable implementation plan to highway and transit vehicles” (40 CFR §51.392).

Emission budgets are estimated for the current year, for the SIP attainment year, for the year that any interim SIP milestones are required to be met, and under conformity will be prepared for each transportation planning horizon year.¹³ In a SIP planning process, three emission budgets are usually estimated: 1) the current emission budget; 2) the attainment year, milestone year, or horizon year “no action” emission budget; and 3) the attainment year, milestone year, or horizon year “action” emission budget. The current emission budget (current baseline) is developed using current vehicle activity data and the emission rates from the models for the current calendar year. Future emission budgets are developed using projected vehicle activity and modeled emission rates for the future year (i.e., the emission rate models assume vehicle turnover and a general reduction in fleet emission rates). The no action budget assumes that the transportation network remains static (no new transportation projects will be implemented) and must accommodate the projected increases in population, constrained economic, and vehicle activity growth. The action, or build, alternative assumes that projects planned through the analysis year will be implemented. Estimates of vehicle activity (e.g., number of trips, vehicle miles traveled (VMT)), and traffic conditions (e.g., link speeds) are developed for the action and no action scenarios. Emission rates are applied to the activity projections to estimate regional emission quantities by pollutant type.

Plan and TIP conformity determinations associated with emission budgets are accomplished by comparing the emissions associated with transportation plans and TIPs with the emission budgets established for each attainment, milestone, or horizon year with the emission budgets that were developed for the action scenarios of the SIP. Thus, for conformity purposes, the no action alternative does not need to be estimated for each applicable milestone. Under conformity, emission budget analyses are to contain the emission estimates from the entire transportation system, including all regionally significant projects in the transportation plan and regionally significant highway and transit projects expected in the timeframe of the transportation plan. Detailed analyses must be performed for horizon years and the final attainment date; however, emission budgets may be interpolated for milestone years from the analyses (40 CFR §51.428(a)(4)).

Emission budgets for projects that are included in a conforming TIP and plan need not be prepared because the emissions from these projects have already been included in plan and TIP analyses. Under specific conditions, the Rule requires that project-level emission budget comparisons be made. These comparisons are to be developed by taking the difference between the regional emission estimates with and without the project. Project-level emission comparisons are discussed in more detail later.

In areas that have a conforming plan, the emission budget requirement for a project that appears in the plan but does not appear in the latest TIP may be satisfied without additional regional analysis, if: 1) allocating funds to the project will not delay the implementation of necessary projects that are in the TIP; 2) the project is not regionally significant or the project is part of the specific highway or transit system envisioned in the transportation plan’s 20 (or later) year horizon; and 3) the design concept and scope of the project is not significantly different than outlined in the transportation plan (40 CFR §51.432(b)(1)). In essence, these alternative provisions are designed so that planning organizations will have the flexibility to implement

projects earlier than planned, as long as doing so does not prevent or delay the overall plan from being achieved, without repeatedly being required to invoke the modeling process.

To be in concert with the requirements for transportation plan content (40 CFR §51.404), each horizon year the analyses should: 1) quantify and document the demographic and employment fraction influencing expected transportation demand, including land-use forecasts (in accordance with the consultation protocol to be approved and submitted as a component of the SIP revision); 2) describe the highway and transit system in detail; 3) identify and discuss the transit and highway system modifications and additions sufficient for modeling purposes; 4) identify the effects on route choice and zone-to-zone travel; and 5) include other future transportation policies, requirements, services, and activities.

If a plan submitted before November 24, 1993, demonstrates emissions less than necessary for attainment, a new SIP may be submitted that allocates this "safety margin to highway and transit mobile sources." Emissions may only be traded between budgets (i.e., between stationary source and mobile source emission budgets) through documented SIP revisions approved by the USEPA.

Geographic subarea budgets can be used if the plan "explicitly indicates an intent to create such subarea budgets for the purposes of conformity" (40 CFR §51.456(d)). On technical grounds, this report does not support the concept of breaking down the motor vehicle emission budget into subarea emission budgets as would be allowed under 40 CFR §51.456(d). To implement subarea budgets, the SIP must specifically require that the subarea budgets be applicable to conformity determinations, which would necessitate concurrence through the consultation process. Given the uncertainty associated with the use of the vehicle activity and emission rate models, subarea budgets are very likely to be less accurate than the regional budget. Topics associated with modeling uncertainty are addressed under separate cover (Guensler, et al., 1994).

If the nonattainment area includes more than one MPO, the SIP may specifically establish motor vehicle emission budgets for each area, or the MPOs may make a collective conformity determination for the entire region (40 CFR §51.456(d)). This report recommends that MPOs work collectively on conformity determinations.

The stated USEPA positions (Brucker, 1994) relating to the vehicle activity that should be employed in the emission budget analyses are: 1) if the vehicle activity is expected to increase between the current and the future analysis year, the highest vehicle activity estimate should be employed; and 2) if the vehicle activity is expected to decrease between the current and the future analysis year, the lower estimate for vehicle activity can only be used if enforceable conditions are in place that will ensure that the lower levels of activity will be achieved in practice.¹⁴ Hence, the future vehicle activity estimate would almost always be greater than or equal to the activity in the current year. No support for the stated position was identified in the Rule, except for the provision that TCM and tailpipe control strategies that require adoption as regulation must be enforceable and in place before credit can be claimed (40 CFR §51.452(a)(2) and (3)). This report recommends that the USEPA reconsider their decision and that vehicle activity decreases (e.g., through changes in land use or changes in mode choice) be accounted for

in emissions budget comparisons. Given the stringent requirements for implementing state-of-the-art travel demand models, failure to rely upon those models to predict increases and decreases in vehicle activity would make the model content requirements of 40 CFR §51.452(b)(1) questionable.

Conformity Determinations

The Rule requires that the USDOT and MPOs make conformity determinations on metropolitan transportation plans and TIPs before they are adopted, approved, or accepted. The USDOT is the primary agency responsible for the overall implementation of conformity. The local MPO, the duly delegated transportation authority by the USDOT for metropolitan areas, assumes the front-line responsibility for preparing conformity analyses for plans and local projects, in consultation with the appropriate air quality planning agencies. "In nonattainment and maintenance areas for transportation related pollutants, the FHWA and FTA, as well as the MPO, must make a conformity determination on any new/revised plan in accordance with the Clean Air Act and the EPA conformity regulations" (23 CFR §450.322(d)). For projects that lie outside of the MPO boundary, the state department of transportation is responsible for performing the conformity analyses. The USEPA assumes a commenting role on all conformity analyses (58 FR 62201). The state air quality agency (local air quality management districts in California) assumes a cooperative role in the conformity determination, per the conformity cooperation guidelines that are to be developed between the transportation and air quality agencies.

A transportation plan must be deemed in conformance with the SIP before it is approved by the MPO and accepted by the USDOT. These transportation plans must conform with the SIP within 18 months of an USEPA approval that: 1) establishes or revises emission budgets, or 2) adds or deletes TCMs. TIPs must be deemed in conformance with transportation plans within six months by the MPO or the USDOT unless the new or revised plan merely adds or deletes exempt projects. Conformity determinations must be made for transportation plans and TIPs no less than every three years (40 CFR §51.394). Local projects must be deemed in conformance with the TIP and regional transportation plan before they are implemented. In addition, specific findings based upon the application of emission models and air quality assessment models must be made (and will be discussed later).

The portions of nonattainment areas that are excluded from the MPO can be pulled into the MPO planning area for conformity evaluation, or the MPO can develop a cooperative working agreement with the nonattainment area outside of the MPO region. Under either situation, conformity must be determined for the entire nonattainment area. Hence, cooperative working agreements will be required to implement conformity on a regional and local scale.

Latest Planning Assumptions

All conformity determinations must use the latest planning assumptions in force at the time the conformity determination is made. Assumptions must be derived from estimates of current and

future population, employment, travel, and congestion most recently developed by the planning agency responsible for such projections (40 CFR §51.412(b)). Conformity determinations must also take into account the influence of, and discuss the impacts of, changes in transit operating policies (e.g., fares) and ridership since the last conformity determination and reasonable transit policies projected for the future.

The conformity determinations must use “the latest existing information” regarding the effectiveness of the TCMs that have already been implemented (40 CFR §51.412(e)). Section 51.412 of the Rule does not explicitly require that TCM effectiveness be assessed prior to making a conformity determination, only that the latest study results be included in the analysis. However, emission reduction effectiveness of TCMs must be periodically reassessed in the SIP development process, and when the information becomes available, it must be incorporated.

All key assumptions must be specified and included in draft conformity documents (40 CFR §51.412(f)). The project team interprets this requirement to mean that the assumptions should be documented and presented in sufficient detail so that they can be evaluated in the interagency and public consultation process.

Latest Emission Model

All conformity determinations must be based on the latest emission rate model available (40 CFR §51.414) and approved for SIP development. The USEPA has specified that MOBILE5a (bearing the internal release date of March 26, 1993) coupled with the MOBILE5 information sheet #2 (Estimating Idle Emission Factors Using MOBILE5) is the latest approved emission model for use outside of California, and EMFAC7F is the latest approved emission model for use inside California (58 FR 62211). In California, the EMFAC7F will continue to be the applicable model until a future release of EMFAC is developed by the California Air Resources Board (CARB) and approved by the USEPA.

The USEPA has the authority to grant MPOs up to a 12-month grace period for the model switchover for new conformity determinations. The length of the grace period will be published in the Federal Register and will depend upon USEPA-perceived MPO resource constraints and the technical difficulty involved in switching to the new model. Conformity determinations for plans, TIPs, or projects that began before the announcement of the new model or during the grace period may continue to use the older model for up to three years after the publication of the draft environmental impact document. The grace period for switching to the MOBILE5a model for use outside California ended November 24, 1994 (58 FR 62211). The grace period for switching to the EMFAC7F model for use in California expired February 24, 1994.

Emission Rate Modeling Assumptions

Ambient temperatures and other emission rate model parameters, such as fraction of cold starts, should be consistent with those used to establish the emission budget in the applicable

implementation plan (40 CFR §51.452). In conformity analyses, the cold start fractions or other emission rate model input parameters may be modified through the consultation process to provide better spatial resolution for local geographic areas or to better represent logically estimated trends, if the revised estimates will improve modeled estimates.

Conflict Resolution

Under the consultation requirements (40 CFR §51.402 (d)), conflicts among state agencies or between state agencies and an MPO shall be escalated to the Governor if they cannot be resolved by the heads of the involved agencies. The state air agency has 14 calendar days to appeal to the Governor after the state DOT or MPO has notified the state air agency head of the resolution of his or her comments.¹⁵ If the state air agency appeals to the Governor, the final conformity determination must have the concurrence of the Governor.¹⁶ The state air agency may delay acceptance of an MPO or state DOT conformity determination if consultation has been pursued between the agencies and the issues have been escalated to the Governor. If the conflict is not appealed to in the required timeframe, the MPO or state DOT may finalize its conformity determination. The Governor may delegate his or her role in this process but not to the head or staff of the state or local air agency, state department of transportation, state transportation commission or board, or an MPO (40 CFR §51.402(d)).

Approval of Transportation Plans and Transportation Improvement Programs

During the transitional, control strategy, and maintenance periods, the transportation plan must be consistent with the emission budget(s) in the applicable implementation plan or implementation plan submission (40 CFR §51.428(a)). The regional emission analysis for the transportation plan should demonstrate that for each individual nonattainment pollutant or precursor, the emissions are less than or equal to the motor vehicle emission budget(s) established in the SIP for the attainment year, milestone years, and transportation plan horizon years that fall after the attainment year. Plans submitted prior to January 1, 1995, that do not meet the transportation plan content requirements stipulated in the Rule (40 CFR §51.404) require emission budget comparisons only for the attainment year and any years during the 25 year planning horizon that are not more than ten years apart and include the final horizon year of the plan.

During the transitional, control strategy, and maintenance periods, the TIP must be consistent with the motor vehicle emission budget in the applicable SIP (40 CFR §51.430). The motor vehicle emission budget can be deemed consistent without additional regional emission analysis provided that: 1) each program year of the TIP is consistent with expected federal funding and matching funds of state/local funds, and 2) the TIP is consistent with the conforming transportation plan such that the regional emission analysis already performed for the plan are still applicable. The second component above requires that: 1) the TIP is implemented in a timeframe that achieves the highway and transit system envisioned by the transportation plan in the given horizon years; 2) the regionally significant projects in the TIP are part of the highway

or transit system in transportation plan horizon years; and 3) the design concept and scope of the TIP projects do not differ significantly from those in the plan. If one of the above is not met, then either the TIP must be revised or the plan must be revised and demonstrated to conform (40 CFR §51.430(b)(3)).

The regional analyses must include all regionally significant projects in the plan and all regionally significant projects expected in the nonattainment area (40 CFR §51.428(a)(2)). The emissions analysis need not include non-regionally significant projects; however, the VMT effects from non-regionally significant projects and non-regionally significant TCMs must be included within “reasonable professional practice” (40 CFR §51.452(a)(1)).

TCMs that are behind schedule may not be included in the emission analysis until implementation has been assured. Credit for programs that have not been adopted as regulations and submitted as SIP revisions (e.g., reformulated gasoline rules) may not be included in the analysis (40 CFR §51.452(a)(3) and (4)).

In making quantitative conformity determinations, serious and worse areas must use network-based transportation demand models in the regional analyses to estimate travel within the metropolitan planning area that relates “travel demand and transportation system performance to land-use patterns, population demographics, employment, transportation infrastructure, and transportation policies” (40 CFR §51.452). Specific capabilities for transportation demand models used in extreme, severe, and serious nonattainment areas are outlined in the Rule (40 CFR §51.452(b)(1)). The modeling must have the following attributes:

- modeling methods and the functional relationships in the models must be in accordance with “acceptable professional practice” and “reasonable for purposes of emissions estimation;”
- network models must be validated “against ground counts for a base year that is not more than ten years prior to the date of the conformity determination;”
- land use, population, and other model inputs must be based on the best available information and appropriate to the validation base year;
- for peak-hour or peak-period traffic assignments, a “capacity sensitive” assignment methodology must be used;
- travel times between zones used to distribute trips between origin and destination pairs must be in reasonable agreement with the travel times that result from the process of assignment of trips to network links (a feedback loop is inferred by this requirement);
- where use of transit currently is anticipated to be a significant factor in satisfying transportation demand, zone-to-zone travel times should also be used for modeling mode splits;
- freeflow speed must be based on “empirical observations” (on network links);
- peak and off-peak travel demand and times must be provided;
- trip distribution and mode choice must be sensitive to pricing, if pricing is a significant factor in mode choice (this requirement applies if the model is sensitive to pricing effects and if the necessary information is available);

- the model must employ and document logical relationships between land use projections and the transportation system characteristics of current and future scenarios for which emissions are estimated (use of a formal land-use model is not specifically required but is encouraged);
- if the network model is capable of modeling trip generation as a function of destination “accessibility” (that includes the effects of price) via the transportation system and the necessary information is available, the relationship must be employed...[and,] agencies are encouraged to develop and employ such relationships if their model is currently not sensitive to this causal relationship; and
- if the network model is capable of modeling the dependence of economic and population growth on the accessibility of transportation system and the necessary information is available, the relationship must be employed...[and,] agencies are encouraged to develop and employ such relationships if their model is currently not sensitive to this causal relationship.

“Reasonable methods in accordance with good practice” must be used to estimate traffic speeds and delays in a manner that is sensitive to the estimated volume of travel on each roadway segment represented in the network model (40 CFR §51.452(b)(4)). Reasonable methods must also be used to estimate travel that is on off-network roadways and to estimate traffic speeds and delays in a manner that is “sensitive to the estimated volume of travel on each roadway segment represented in the network model” (40 CFR §51.452(b)(3)).

Emissions from construction related congestion do not need to be considered.¹⁷ The requirements for travel demand models outlined in the Rule essentially extend from the findings of a lawsuit that will be discussed later in the paper. Essentially, these guidelines are in concert with those prepared for the National Association of Regional Councils by Harvey and Deakin (1993).

HPMS Estimates for Vehicle Miles Traveled

The Highway Performance Monitoring System (HPMS) is to be used as the primary source of VMT estimation in conformity determinations (40 CFR §51.452(b)(2)). HPMS estimates of VMT shall be considered the primary measure of VMT within the portion of the nonattainment or maintenance area and the functional classes of roadways included in HPMS. A factor must be developed to reconcile HPMS estimates to demand model estimates for VMT. For example, the ratio of demand model VMT estimates for the current and milestone year could be used as a multiplier for projecting current HPMS estimates into the future. In the factoring process, “consideration will be given” to differences in facility representation in HPMS and the demand model (40 CFR §51.452(b)(2)).

The rationale for using the HPMS in conformity analysis is as follows: 1) HPMS counts are made on a statistical basis; 2) the reliance maximizes the use of existing equipment; 3) the HPMS process is proven (ten years); 4) FHWA overview is already in place; and 5) it is consistent with existing programs such as congestion management (Fleet, 1993). On the other hand, states rely upon local agencies (that operate on limited resources) for HPMS data collection, leading to high variability in the applied field methods and accuracy of estimates. The

HPMS system often will not encompass an entire geographic area. In addition, HPMS does not include local roads or roads outside the urban area, so “reasonable methods” must be used to estimate this off-HPMS VMT.

A great deal of flexibility has been included in the final rule (this flexibility did not exist in the proposed rule) regarding the use of HPMS estimates in conformity determinations. The Rule allows departure from the HPMS mandate if concurrence is obtained from the USDOT and the USEPA (40 CFR §51.452(b)(2)). The USEPA's position is that all areas should have VMT data equivalent to properly implemented HPMS and for areas without area-specific HPMS counts, local districts can get USDOT/USEPA to “buy in” to alternative estimates (Brucker, 1994). If the local region can demonstrate that an alternative VMT estimation method is more accurate than HPMS, the alternative method is likely to be approved.

Approval of Projects

For a regionally significant project to be approved at any time, a currently conforming transportation plan and TIP must exist at the time of project approval (40 CFR §51.420 and 450). Project level conformity determinations cannot be made once a SIP lapses or a TIP or transportation plan are deemed non-conforming (e.g. 40 CFR §51.448) in accordance with specific timeframes outlined in the Rule, which are dependent upon the type and date of plan disapproval.

Federal projects must come from the currently conforming transportation plan and TIP (40 CFR §51.422(a)), unless specific criteria for ‘projects not from a conforming plan and TIP’ are satisfied. A project is considered to be from a conforming plan and TIP if the project is specifically included in the plan and TIP and the project’s design concept and scope have not changed significantly since the plan and TIP were deemed conforming.¹⁸

If the project does not come from the conforming plan and TIP, the project must be consistent with the motor vehicle emission budgets in the applicable SIP or SIP submission (40 CFR §51.432). This requirement is fulfilled if the emissions from the project when considered with the emissions from all of the projects in the conforming plan and TIP do not exceed the applicable emission budget in the applicable SIP. In cases where the MPO has simply implemented a project in an earlier TIP than envisioned in the plan, provisions allow for the emission budget conformity determination to be made without undertaking additional regional modeling (40 CFR §51.432(b)(1)), as long as the project will not prevent or delay the overall plan from being achieved.

No regionally significant non-federal project may be approved by the recipient of FHWA/FTA funds, regardless of whether the funds are allocated directly to the project or not, unless a conforming plan and TIP are in place. Failure to certify the plan and TIP as conforming within specified time periods (e.g., within 12 months of the submittal of a revised SIP) stops all regionally significant federal and non-federal projects. In addition, before a non-federal project may be approved, one of the following criteria must be met (40 CFR §51.450):

- The project comes from a conforming plan and program and the design concept and scope have not changed significantly since the conformity determination was made;
- The project is included in the regional emission analysis, even if the project is not strictly “included” in the TIP (e.g. the project lies outside the MPO boundary), and the project's design concept and scope have not changed significantly from those that were included in the regional emission analysis, or in a manner that would significantly impact use of the facility;
- During the control strategy or maintenance period, the project is consistent with the motor vehicle emission budget(s) in the applicable implementation plan;
- During Phase II of the interim period, the project contributes to emission reductions or does not increase emissions; or
- During the transitional period, the project is both consistent with the motor vehicle emission budget(s) in the applicable implementation plan and contributes to emission reductions or does not increase emissions.

The above requirements for regionally significant non-FHWA/FTA projects are in essence a *de facto* conformity determination, except that the hot spot analysis provisions (40 CFR §51.434) are not applicable to non-federal projects.

Required Project Level Emission Impact Assessments

The Rule requires that air quality impact assessments for FHWA/FTA projects be undertaken to ensure that the projects will not result in the exceedance of a local air quality standard.¹⁹ FHWA/FTA projects must not create new local CO or PM₁₀ hot spots nor may the projects result in an increase in the severity of a CO or PM₁₀ violation (i.e., emissions may not increase in a nonattainment hot spot) at any time (40 CFR §51.424(a)). Quantitative analyses must be performed. A number of modeling approaches can be taken to model the carbon monoxide emission impacts of projects. Analyses must be based upon applicable air quality models, databases, and existing USEPA modeling guidelines (see appendix W of 40 CFR Part 51)²⁰ and procedures developed through the consultation process (40 CFR §51.402(c)(1)(i)), unless the interagency consultation process determines that the models, databases, and other requirements are inappropriate for such modeling (provided that the USEPA Regional Administrator concurs). Hot spot analysis assumptions must be consistent with the assumptions in the regional emission analysis for those inputs that are required for both analyses. However, worst-case traffic data should be employed in project analyses. This is analogous to the emission modeling that requires that worst-case meteorological data be employed in the analyses. With respect to modeling methodologies: “The statutory provisions govern. Whatever can withstand a private lawsuit is acceptable in terms of modeling” (Pallarino, 1994).

Hot spot analyses are not required if “consideration of local factors clearly demonstrates that no local violations presently exist and no new local violations will be created as a result of the project” (40 CFR §51.424(c)). The criteria for making the determination that the local factors “clearly demonstrate” that no new violations will be created is not provided in the Rule. The consultation process that is to be developed under 40 CFR §51.402 does not specifically require

that a protocol for making this determination be developed. Because a protocol will be developed for "evaluating and choosing a model (or models) and associated methods and assumptions to be used in hot spot analyses and regional emissions analyses" (40 CFR §51.402(c)(1)(i)), it seems logical to develop screening criteria through the interagency consultation process as well. Note, however, that the protocol must be adopted into the SIP.

Before an emission impact analysis is undertaken, any mitigation or control measures that are binding components of the NEPA/CEQA document shall be assumed to have been put in place (40 CFR §51.458). That is to say, project conformity is determined for the mitigated project, rather than the unmitigated project. However, the mitigation must be specific and committed to in writing by the project sponsor. The measures must be included in the project design concept and scope, which is used in the regional emission analysis for the transportation plan and TIP. The mitigation must be legally enforceable and the project sponsors must comply with mitigation measure obligations.

CO

Carbon monoxide hot spot analyses must be undertaken when: 1) the project is in an area identified in applicable implementation plans as having a current violation or possible current violation; 2) the project involves intersections at level of service (LOS) D, E, or F, or intersections that will change to these levels because of the new project; 3) the project involves any of the three highest traffic volume intersections identified in applicable implementation plans; 4) the project involves any of the worst three LOS intersections identified in applicable implementation plans; and 5) use of the guideline models is practicable and reasonable given the potential for violations (40 CFR §51.424(c) and §51.454 (a)). For cases other than those listed above, other quantitative methods representing "reasonable and common professional practice" may be employed, where these methods will presumably be developed through the interagency consultation process.

Analyses must include the entire project and be performed only after major features that have the potential to affect pollutant concentrations are known. "The background concentration can be estimated using the ratio of future to current traffic multiplied by the ratio of future to current emission factors" (40 CFR §51.454(c)). Presumably this language is intended to provide that future background concentrations can be estimated by multiplying the current background CO concentration by the derived ratio(s) of current to future activity and emission factors.

PM₁₀

In July 1997, USEPA adopted a new 24-hour PM₁₀ standard, which is based on the three-year average of the annual arithmetic mean PM₁₀ concentrations at each monitor within an area is less than or equal to 50 µg/m³, with fractional parts of 0.5 or greater rounding up (40 CFR Part 50). PM₁₀ hot spot analyses must be performed for projects located at sites where violations have occurred and at sites that essentially have identical vehicle and roadway emission and dispersion

characteristics at sites where violations have occurred (40 CFR §51.454(d)). The interagency consultation procedures (40 CFR §51.402(c)(1)(v)) will be used to identify the vehicle and roadway emission and dispersion characteristics that meet the above criteria. In PM₁₀ nonattainment and maintenance areas, bus and rail terminals and transfer points where diesel vehicles congregate require hot spot analyses. As discussed earlier, none of the PM₁₀ modeling requirements will take effect until the USEPA releases PM₁₀ modeling guidance through the Federal Register.

PM_{2.5}

In July 1997, USEPA adopted a new 24-hour PM_{2.5} standard, which is met when the three-year average of the 98th percentile of the 24-hour PM_{2.5} concentrations at each population-oriented monitor within an area is less than or equal to 65 µg/m³, with fractional parts of 0.5 or greater rounding up (40 CFR Part 50). PM_{2.5} hot spot analyses may be required for projects located at sites where violations have occurred and at sites that essentially have identical vehicle and roadway emission and dispersion characteristics at sites where violations have occurred (40 CFR §51.454(d)).

If PM_{2.5} hot spot analysis is required, the interagency consultation procedures (40 CFR §51.402(c)(1)(v)) would most likely be used to identify the vehicle and roadway emission and dispersion characteristics that meet the above criteria. At present, USEPA has not addressed whether PM_{2.5} modeling requirements will be required. If required, the USEPA will release PM_{2.5} modeling guidance through the Federal Register.

Required Project Level Emission Assessments

The Rule requires that project-level emission assessments be undertaken for a number of cases. These assessments are different than emission impact (or air quality impact) assessments, where models are employed to develop estimates of maximum downwind pollutant concentration levels. Instead, the Rule requires that regional models be employed to predict the emissions from the transportation system with and without a project (where the difference in estimates is assumed to be the emissions associated with the project). Two types of emission tests are potentially required: 1) a *project-level emission budget test*, which compares the system with the project to the emission budget; and 2) a *project-level emission magnitude test*, which compares the emissions from the system with the project to the emissions of the system without the project, to ensure that no emissions increase results. As will be discussed later, the project-level emission budget test is reasonable (albeit resource intensive and yielding highly uncertain results) while the project-level emission magnitude test is completely unreliable (given the uncertainty associated with the emission modeling techniques currently available).

Project Level Emission Budget Tests

During the transitional, control strategy, and maintenance periods, if a project is not from a conforming plan and TIP, the project must be consistent with the motor vehicle emission budget(s) in the applicable implementation plan or implementation plan submission (40 CFR §51.432 (a)).²¹ The requirement is satisfied if emissions from the implementation of the project, when considered with the emissions from the projects in the conforming transportation plan and TIP and all other regionally significant projects expected in the area, do not exceed the motor vehicle emission budget(s) in the applicable implementation plan (or implementation plan submission).

If the “currently conforming”²² transportation plan and TIP have not [yet] been demonstrated to conform according to transitional period criteria and procedures, the following requirements must be met (40 CFR §51.448(e)): 1) before a FHWA/FTA project that is regionally significant and increases single-occupant vehicle capacity (a new general purpose highway in a new location or adding general purpose lanes) may be found to conform, the state air agency must be consulted on how the existing transportation plan and TIP conformity determinations estimates for the “action” scenario emissions (as required by §51.436 through §51.446) compare to the motor vehicle emission budget in the implementation plan submission or the projected motor vehicle emission budget in the implementation plan under development; and 2) in the event of unresolved disputes on such project-level conformity determinations, the state air agency may escalate the issue to the Governor consistent with the 14 day procedure under consultation (40 CFR §51.448(d)).

When regional emission budget analyses are required for approval of a project, the standard methods for regional emission analyses must be used and emissions estimated for each horizon year including the emissions from the proposed project, all other regionally significant projects that would have been implemented in the plan prior to the horizon year, and any other projects that were not from a conforming plan and TIP that have already been approved (40 CFR §51.432(b)(2)).²³

As was the case with emission impact analyses, before an emission budget analysis is undertaken, any mitigation measures that are binding components of the NEPA/CEQA document shall be assumed to have been put in place (40 CFR §51.458). The measures must be included in the project design concept and scope that is used in the regional emission analysis for the transportation plan and TIP, the mitigation must be legally enforceable, and the project sponsors must comply with obligations to mitigation measures.

Project-Level Emission Magnitude Tests

The entire section related to approval of non-federal projects (40 CFR §51.450) was added after the publication of the notice of proposed rulemaking (as will be discussed in more detail later). This section of the Rule requires that unless the non-federal project is specifically included in the plan and TIP and incorporated in the emission budget analyses used to demonstrate plan and TIP

conformity, a project-level emission assessment must be undertaken. The assessment must demonstrate that: 1) during the control strategy or maintenance period, the project is consistent with the motor vehicle emission budget(s) in the applicable implementation plan; 2) during Phase II of the interim period, the project does not increase emissions;²⁴ and 3) during the transitional period, the project is both consistent with the motor vehicle emission budget(s) in the applicable implementation plan and does not increase emissions. Hence, for non-federal projects, during Phase II of the interim period and during the transitional period, a project emission test must be undertaken.

Exempt Projects

A number of specific projects are exempt from the requirements that a conformity determination be made, including both regional and local project emission analyses. Exempt projects may proceed toward implementation even in the absence of a conforming transportation plan and TIP. These projects are defined in 40 CFR §51.460 and include such projects as those undertaken for safety reasons (e.g., railroad/highway crossings, pavement resurfacing, and shoulder improvements),²⁵ operation of existing mass transit systems (e.g., purchase of support vehicles, transit vehicle rehabilitation, signal renovation, etc.), continuation of ridesharing and vanpooling promotion at current levels, bicycle and pedestrian facilities,²⁶ a variety of activities that are planning oriented and do not lead to construction, and repairs resulting from natural disasters. In addition, “transportation enhancement activities” are exempted under 40 CFR §51.460; however, the term is undefined in the Rule. “Transportation enhancement activities” are not defined in the transportation planning regulations (40 CFR §51.450) either. States and MPOs must ensure that exempt projects do not interfere with TCM implementation. Projects lose their exempt status if the MPO, in consultation with other agencies (40 CFR §51.402(c)(1)(iii)), the USEPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur that it has potentially adverse emission impacts for any reason. As will be discussed later, categorical exclusions from NEPA are not exempt from conformity.

Intersection channelization projects, intersection signalization projects at individual intersections,²⁷ interchange reconfiguration projects, changes in vertical and horizontal alignment, truck size and weight inspection stations, and bus terminals and transfer points are exempt from regional emission analysis requirements. The local effects of these projects with respect to CO or PM₁₀ concentrations must be considered to determine if a hot spot analysis is required prior to making a project-level conformity determination. These projects may then proceed to the project development process even in the absence of a conforming transportation plan and TIP.

Interagency Consultation

The Rule requires that conformity SIP revisions establish detailed interagency consultation procedures (40 CFR §51.402). In its SIP revisions, each state identifies the agencies that should be involved in interagency consultation. In making conformity decisions, MPOs must follow the

consultation procedures established by the SIP (40 CFR §51.416). It is the responsibility of the states to provide well defined procedures for consultation (40 CFR §51.402). At a minimum, these consultation procedures must outline the: 1) roles and responsibilities of participating agencies for each stage in the SIP and transportation planning processes; 2) level of consultation required for each participant; 3) organization and management of consultation groups; 4) frequency of group meetings; 5) circulation mechanism for review and comment on draft analyses; 6) process for responding to agency comments; and 7) procedures for developing a list of applicable TCMs that are included in the SIP (40 CFR §51.402(b)(2)(i-vi)). In California, the CARB and the state DOT are producing two sets of consultation procedures for transportation and air agencies to use in developing transportation plans, TIPs, and SIPs (Thompson, 1994).

The consultation process is also to be used to reach agreements between agencies on a number of specific Rule requirements. The primary role of consultation in local project analysis will be to determine which projects: 1) meet the exemption criteria, 2) qualify as regionally significant and require analysis, and 3) have undertaken significant design or scope changes and require re-analysis. These agreements, or at least the continuing process through which these agreements will be reached, must include (40 CFR §51.402(c)):

- A process involving the MPO, state and local air quality planning agencies, state and local transportation agencies, USEPA, and USDOT must be developed to handle the following:
 - 1) Evaluating and choosing a model (or models) and associated methods and assumptions to be used in hot spot analyses and regional emission analyses;
 - 2) Determining which minor arterials and other transportation projects should be considered "regionally significant" for the purposes of regional emission analysis (in addition to those functionally classified as principal arterial or higher or fixed guideway systems or extensions that offer an alternative to regional highway travel), and which projects should be considered to have a significant change in design concept and scope from the transportation plan or TIP;
 - 3) Evaluating whether projects otherwise exempted from meeting the requirements of this subpart (see 40 CFR §51.460 and §51.462) should be treated as non-exempt in cases where potential adverse emission impacts may exist for any reason;
 - 4) Making a determination, as required by 40 CFR §51.418(c)(1), whether past obstacles to implementation of TCMs that are behind the schedule established in the applicable implementation plan have been identified and are being overcome, and whether State and local agencies with influence over approvals or funding for TCMs are giving maximum priority to approval or funding for TCMs. This process shall also consider whether delays in TCM implementation necessitate revisions to the applicable implementation plan to remove TCMs or substitute TCMs or other emissions reduction measures;
 - 5) Identifying, as required by 40 CFR §51.454(d), projects located at sites in PM₁₀ nonattainment areas that have vehicle and roadway emissions and dispersion;

- 6) Characteristics that are essentially identical to those at sites that have violations verified by monitoring, and hence require quantitative PM₁₀ hot spot analysis; and
 - 7) Notification of transportation plan or TIP revisions or amendments that merely add or delete exempt projects listed in 40 CFR §51.460.
- A process involving the MPO and state and local air quality planning agencies and transportation agencies for the following:
 - 1) Evaluating events that will trigger new conformity determinations in addition to those triggering events established in 40 CFR §51.400; and
 - 2) Consulting on emission analysis for transportation activities that cross the borders of MPOs or nonattainment areas or air basins.
 - Where the metropolitan planning area does not include the entire nonattainment or maintenance area, a process involving the MPO and the state DOT for cooperative planning and analysis for purposes of determining conformity of all projects outside the metropolitan area and within the nonattainment or maintenance area.
 - A process to ensure that plans for construction of regionally significant projects that are not FHWA/FTA projects (including projects for which alternative locations, design concept and scope, or the no-build option are still being considered), including those by recipients of funds designated under title 23 U.S.C. or the Federal Transit Act, are disclosed to the MPO on a regular basis, and to ensure that any changes to those plans are immediately disclosed;
 - A process involving the MPO and other recipients of funds designated under title 23 U.S.C. or the Federal Transit Act for assuming the location and design concept and scope of projects that are disclosed to the MPO as required by paragraph (c)(4) of this section but whose sponsors have not yet settled on these features in sufficient detail to perform the regional emission analysis according to the requirements of 40 CFR §51.452.
 - A process for consulting on the design, schedule, and funding of research and data collection efforts and regional transportation model development by the MPO (e.g., household/travel transportation surveys).
 - A process for providing final documents (including applicable implementation plans and implementation plan revisions) and supporting information to each agency after approval or adoption.

Public Participation and Comment Requirements

The Rule outlines public consultation procedures in 40 CFR §51.402(e), referencing previous transportation planning public participation requirements. The language is general, requiring that "...agencies making conformity determinations on transportation plans, programs, and projects shall establish a proactive public involvement process which provides the opportunity for public comment prior to taking formal action on a conformity determination for all transportation plans and TIPs, consistent with the requirements of 23 CFR Part 450." In addition, the agencies must specifically address all public comments in writing on regionally significant projects, not

receiving FHWA or FTA funding, that have not been properly reflected in the emissions analysis used to support a proposed conformity finding for a transportation plan or TIP (40 CFR §51.402(e)). Furthermore, these agencies must also “provide opportunity for public involvement in conformity determinations for projects where otherwise required by law” (40 CFR §51.402(e)). The MPO must always make the conformity determination according to the consultation procedures adopted in the SIP and according to the public involvement procedures established by the MPO in compliance with 23 CFR Part 450.

Under 23 CFR Part 450, a public review period for transportation plans and TIPs in nonattainment areas is required. The metropolitan planning process is to “[i]nclude a proactive public involvement process that provides complete information, timely public notice, full public access to key decisions, and supports early and continuing involvement of the public in developing plans and TIPs” (40 CFR §450.316(b)(1)). Specifically, public notice must be provided for the public involvement process, open public meetings must be held, and time for public review and comment must be provided. Further, “in nonattainment areas, classified as serious and above, the comment period shall last at least 30 days for the plan, TIP, and major amendments” (40 CFR §450.316(b)(1)(iv)). A second link to conformity is established in the transportation planning regulations in 40 CFR §450.316(b)(1)(vii): “When significant written and oral comments are received on the draft transportation plan or TIP (including the financial plan) as a result of the public involvement process or the interagency consultation period process required under the USEPA’s conformity regulations, a summary, analysis, and report on the disposition of comments shall be made part of the final plan and TIP.” Lastly, if the transportation plan or TIP changes significantly between the draft public-notice plan or TIP, the modified plan or TIP must undergo another public hearing/comment process. The MPO is responsible for determining that the public consultation procedures outlined above are followed (40 CFR §51.416).

With respect to transportation projects, the conformity determination and the EIS/EIR determinations are not specifically required by the Rule to be made together. However, as will be discussed in further detail later, the conformity determinations for transportation plans and TIPs must essentially be made in the draft EIS/EA stage. Given the extensive public comment requirements of the NEPA and conformity processes (in terms of the length of comment periods and response to comment requirements), only when the conformity process is coincident with EIS/EIR procedures will the conformity determination be approvable during the final EIS/EIR stage. Further, the transportation planning regulations require that the MPO public process “shall be coordinated with other statewide public involvement processes [see NEPA/CEQA section of this volume] wherever possible to enhance public consideration of the issues, plans, and programs, to reduce redundancies and costs” (40 CFR §450.316(b)(1)(xi)).

Public Availability of Conformity Determinations

The draft of any conformity finding, including analyses that support findings, must be made available to any requester. Draft documents and supporting materials used for the required

interagency and public consultation must specify and include key assumptions (40 CFR §51.412(f)).

The conformity analysis must follow formal public notice procedures and include a 30-day period for public comment. The notification of a conformity determination must go to the USEPA region, state and local air quality management district (AQMD), federal land manager, MPO, and the lead NEPA/CEQA agency (Brucker, 1994).

The form of “public availability” that a conformity analysis must take is an issue that was not addressed in the Rule nor was the issue mentioned in public comments on the Rule in the docket. The USEPA public hearings also did not adequately address this issue. What level of detail and completeness must the public information document on the conformity analysis exhibit? The format and level of detail of conformity determination will likely be important in any future legal proceedings associated with legal challenges to conformity determinations. If the agency performing the conformity analyses only provides a written summary, there is inadequate information for an informed member of the public to determine if the conformity analysis was adequate. On the other hand, if local agencies are required to provide full documentation, including statements of assumptions, model software, and input files in computer format, those regions that employ a proprietary model for regional analysis may run into copyright problems or resource constraints.

This report interprets “public availability” of conformity determinations as requiring that any project’s analysis be made available to an interested party in a common electronic media (i.e., computer disk format today). There are several arguments that support the use of a computerized format in providing public access to conformity documents. First, the local project assessment models are within the public domain and can be run on personal computers with minimal processing requirements by today’s standards. Second, the analyst must already prepare a detailed description of modeling technique and assumptions. Finally, the computer input files must be developed for analysis anyway. Hence, a computerized format should not significantly impact the resource allocations associated with conformity determinations.

CONFORMITY AND THE NEPA/CEQA CONNECTION

When federal transportation projects have the potential to affect the environment, an Environmental Impact Statement (EIS) must be prepared under the requirements of NEPA. In California, the requirements of CEQA also apply to state and local agencies (see Appendix E, NEPA/CEQA Process Table, for a summary of NEPA/CEQA process). If there is substantial evidence that a project may have a significant effect on the environment, an EIR must be prepared under CEQA. A joint EIR/EIS document may be (and usually is) prepared. This section of the report describes NEPA and CEQA, discusses the direct references to NEPA and CEQA in the Rule, and explains how the requirements of NEPA, CEQA, and conformity are interrelated.

National Environmental Policy Act (NEPA)

The National Environmental Policy Act is one of the most significant pieces of environmental legislation in U.S. history. Passed by Congress in 1969 and signed into law in 1970, NEPA requires federal agencies to consider the environmental consequences of their actions before executing them. In preparing and passing NEPA, Congress recognized "the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances" (42 U.S.C. §4331(a)). The language of NEPA recognizes the importance of several things: 1) preserving the environment for future generations; 2) maintaining the safety, health, productivity and well being of the American people; 3) using the products and materials of the natural environment of the country without diminishing them to the point of destruction; and 4) maintaining a balance between the growing population of the United States and the country's natural resources.

NEPA requires all agencies of the federal government to assess the possible adverse environmental impacts of proposed actions or legislation. NEPA applies to actions where FHWA, FTA, or agencies delegated the authority for such decisions have control over project approval. Consequently, NEPA applies to many of the projects to which conformity applies.²⁸

If a federally proposed project has the potential to yield a significant environmental impact, compliance with the mandates of NEPA is accomplished through the preparation of an EIS. Under NEPA, all EISs must include: 1) a detailed statement by the responsible official on the environmental impact of the proposed action; 2) a description of any adverse environmental effects that cannot be avoided should the proposal be implemented; 3) a discussion of alternatives to the proposed action; 4) a treatment of the relationship between local short-term uses of the environment and long-term productivity of the area; and 5) a discussion of any irreversible commitments of resources to be involved in the proposed action (42 U.S.C. §4332(c)).

In Title II of NEPA, Congress established the Council on Environmental Quality (CEQ) as the administrating agency of NEPA. The CEQ developed a set of regulations for implementing the NEPA mandates that are contained in 40 CFR Parts 1500 to 1508. Under the CEQ regulations, federal agencies must adopt procedures ensuring that applicable project-related decisions are made in accordance with the policies and purposes of NEPA. The USDOT's FHWA and FTA NEPA regulations are contained in 23 CFR Part 771.

California Environmental Quality Act (CEQA)

NEPA regulates federal actions but does little to address actions on a statewide or local level. Subsequently, California and other states enacted environmental legislation to govern the activity affecting their own respective territories. In 1970, the California legislature passed the CEQA to require an environmental analysis to be performed by state and local government before undertaking projects. It was the intent of CEQA that "all agencies of the state government which

regulate activities of private individuals, corporations, and public agencies which are found to affect the quality of the environment, shall regulate such activities so that major consideration is given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian” (Public Resources Code (PRC) Section 21000(g)). CEQA recognizes several key goals for the state of California: 1) maintaining a quality, healthy environment for the future as well as the present; 2) sustaining the capacity of the environment well beyond any minimal thresholds of health and safety; and 3) regulating the activities of citizens of the state to safeguard the environment while preserving the lifestyles and living environment for the citizens of California. Initially after its passage in California, CEQA had little impact on project regulation as it was believed to apply only to public works projects. The 1972 court case *Friends of Mammoth v Board of Supervisors* ((1972)8 C3d 247, 104 CR 761) established that CEQA also applies to governmental regulation of private projects. This case helped to broaden the scope of CEQA's influence on project actions.

Many requirements and procedures in the preparation of EISs under NEPA are similar to those for EIRs under CEQA. The NEPA and CEQA regulations include requirements for a scoping process, document circulation, and public comment periods in order to include all interested parties. Similarly, the Rule requires a thorough consultation process to incorporate the input of interested parties. Both the Rule and NEPA/CEQA guidance require quantitative analysis to determine the impacts of proposed projects.

CEQA guidelines were also created by the South Coast Air Quality Management District with the intent of helping local government agencies and consultants develop environmental documents required by CEQA and to assist local land use planners to analyze and document proposed and existing project effects on air quality. These guidelines are summarized in Appendix F, Summary of the SCAQMD CEQA Air Quality Handbook.

Compliance with the mandates of CEQA can be accomplished with the preparation of an EIR. The set of requirements under CEQA are similar to the set of NEPA requirements; both sets may be satisfied with the preparation of a joint EIR/EIS document. To help agencies fulfill the requirements of CEQA, the State Office of Planning and Research has prepared a set of CEQA guidelines, approved by the Secretary of Resources. CEQA, along with NEPA, has played a powerful role in regulating the activities of state and federal agencies to achieve and maintain a high standard of environmental quality.

Summary of References to NEPA in the Conformity Rule

NEPA is defined in the Rule at 40 CFR §51.392 as “the National Environmental Policy Act of 1969, as amended (42 U.S.C. §4321 et seq).” In this same section of the Rule, ‘NEPA process completion’ is defined as “the point at which there is a specific action to make a determination that a project is categorically excluded, to make a Finding of No Significant Impact [FONSI], or to issue a record of decision [ROD] on a Final Environmental Impact Statement under NEPA” (40 CFR §51.392). The term ‘NEPA process completion’ is defined in the Rule because project

proposals that have already received a categorical exclusion or have been issued a FONSI or ROD may be grandfathered as existing projects and exempted from conformity determinations.

A project that has been found in conformity must be reanalyzed for conformity if, within three years of the last conformity determination, one of the following has not occurred: 1) the NEPA process has been completed; 2) the final design has started; 3) there has been acquisition of a significant portion of the right-of-way; or 4) the plan, specifications and estimates have been approved (40 CFR §51.400 (d)).

In reference to transportation plans and TIPs, the Rule states that “[t]he degree of specificity required in the transportation plan and the specific travel network assumed for air quality modeling do not preclude the consideration of alternatives in the NEPA [/CEQA] process or other project development studies” (40 CFR §51.406).

If the NEPA [/CEQA] process results in a final project with a design concept and scope significantly different from that in the transportation plan or TIP,²⁹ the project must meet the conformity criteria for *projects not from a plan and TIP* (40 CFR §51.410 through 51.446) prior to NEPA process completion (i.e., before the NEPA process can be deemed complete and the final EIS can be approved). This criteria can be satisfied if the emissions from the project, in combination with the emissions from all other regionally significant projects expected in the area, do not exceed the motor vehicle emission budget(s) in the applicable attainment plan or implementation plan submission. Not surprisingly, the only method that can realistically be used to assess compliance with this criteria is a re-run of the regional model with the modified project included in the build scenario.

Overall, none of the NEPA references in the Rule explicitly state that conformity determinations for individual projects must be made within the NEPA [/CEQA] process. Nevertheless, the conformity requirements are intertwined with the requirements of NEPA [/CEQA]. As will be discussed in the next section of this report, conformity determinations can and should be made during the process of preparing an EIS under NEPA or an EIR under CEQA (or both).

Concurrent Conformity and NEPA/CEQA Decisions

The Rule does not require that NEPA/CEQA and conformity determinations be made concurrently for transportation projects. However, the specific requirements of the NEPA and conformity processes result in a *de facto* requirement that the determinations be made concurrently. There are five basic arguments supporting the conclusion that the conformity determinations for projects must be made during the NEPA/CEQA process: 1) the legislative history of conformity indicates that the intent of project conformity is that findings be made during the NEPA/CEQA process; 2) the general requirements of NEPA and CEQA require coordination between environmental processes; 3) the level of technical detail and documentation required for NEPA/CEQA analyses and conformity analyses are so similar that they can be used for both determinations; 4) unless conformity is taken into account during EIR/EIS analyses, the alternatives analysis and mitigation requirements of NEPA/CEQA may

result in negative conformity determinations after EIS/EIR approval; and 5) unless coordinated, the public comment periods for NEPA/CEQA would run consecutively rather than concurrently, unreasonably delaying project implementation.

Argument One: Legislative history indicates that project conformity determinations be made during the NEPA/CEQA process.

As mentioned previously, conformity requirements already existed with the passage of the 1977 amendments to the CAA. In June 1980, the USEPA and the USDOT jointly released a conformity guidance document entitled "Procedures for Conformance of Transportation Plans, Programs, and Projects with Clean Air Act State Implementation Plans" (58 FR 62189). This guidance document required that conformity determinations be documented as a necessary element in all certifications, TIP reviews, and EIS findings in nonattainment areas (58 FR 62189). At the time of that publication, however, conformity was defined differently; it was defined in the context of TCM implementation, rather than in terms of emissions budgets and air quality impact analysis (58 FR 62189). Notwithstanding the current USEPA interpretation that a mobile source emission reflects precise and enforceable quantities that may not be exceeded, the concept of undertaking conformity analyses as a part of the NEPA/CEQA process has clear historical precedent.

In addition, the Background of the Rule provides guidance on NEPA/conformity analyses in Section V, Number 7 (40 CFR Parts 51 and 93, Background, V(A)(7)). The Background states that the process for making USDOT conformity determinations is similar to the way NEPA/[CEQA] analyses are conducted, and the USEPA expects that most project-level conformity determinations will be made as a part of the NEPA/[CEQA] process.

Argument Two: General NEPA/CEQA requirements specify coordination between environmental processes.

Federal agencies are required to integrate the NEPA process with the policies of other planning regulations at the earliest possible time (40 CFR §1501.2). Because conformity is an environmental planning process, the general requirements of NEPA can be interpreted to require the coordination of conformity with NEPA. This coordination is also required in USDOT's FHWA NEPA regulation which states that the "final EIS or FONSI should document compliance with requirements of all applicable environmental laws, Executive orders and other related requirements" (23 CFR §771.33).

Under CEQA, the EIR must discuss any inconsistencies between the project and applicable general and regional plans (Cal. Code Regs., tit. 14, §15125(b)). (See Appendix D, A Summary of Applicable CEQA Provisions, for summary of applicable CEQA provisions.) For example, the Secretary of the Interior was required to determine if a proposed oil lease was consistent with the Coastal Zone Management Act before an EIS could be approved.³⁰ Similarly, this CEQA

requirement could be rationally extended to the reconciliation of the project with long-range transportation and air quality plans, given the specific mandates of the Rule.

The requirements described above might be interpreted as a *de facto* requirement in which a final NEPA/CEQA determination cannot be made until project conformity with a conformity plan and TIP is demonstrated.

Argument Three: The level of technical detail required for NEPA/[CEQA] and conformity are similar.

Although the level of technical detail required by conformity and NEPA/[CEQA] are generally similar, the requirements of conformity are clearly more stringent. First, the Rule stipulates specific modeling methodologies deemed as the best practice that must be employed to support conformity analyses and determinations. Deviations from these modeling practices prescribed in the Rule are not allowed unless agreement is reached through the interagency consultation process. Second, the Rule requires a level of technical analysis for projects that is unprecedented in previous environmental legislation. The analytical requirements of the Rule are much more specific than those outlined by NEPA. And, in practice, the minimum level of technical detail required to support NEPA analyses is generally less exhaustive than the requirements of conformity.

Under CEQA, a complete and comprehensive description of the project and its environment must be provided in the EIR (Cal. Code Regs., tit. 14, §15124). Furthermore, the EIR must also contain all relevant technical data, plots, plans, maps, diagrams, and other relevant information sufficient to permit the full assessment of significant environmental impacts by reviewing agencies and the public (Cal. Code Regs., tit. 14, §15147). The EIR/EIS serves as an information document, whereas conformity analyses are designed as a CAA planning tool (while some also argue that conformity is a CAA enforcement tool). At present, “the court does not pass upon the correctness of the EIR’s conclusions, but only upon its sufficiency as an informative document” (Duggan et al., 1988). However, in order to be effective in the environmental analysis process, NEPA and CEQA are also intended to be used as planning tools.

The analytical requirements of the Rule are more specific than CEQA requirements. In practice, the minimal level of technical detail required to support CEQA analyses is typically less exhaustive than the level necessary to comply with the conformity requirements. “In judging the legal sufficiency of an EIR, a reviewing court will not expect perfection, but will focus instead on adequacy, completeness, and a good faith effort at full disclosure ... a sufficient degree of analysis to allow decisionmakers to make intelligent judgments” (Duggan, et al., 1988; Cal. Code Regs., tit. 14, §15151). Under CEQA, a lead agency has the discretion to approve a project that will have a negative environmental impact. Similarly, in the past, lead agencies have been allowed the discretion to reject additional testing or experimentation proposed by commenters (Duggan, et al., 1988).

Under CEQA, the modeling methods must be state of the practice, but the analytic depth required to demonstrate the level of impact significance is left to practicing professionals. In their CEQA implementing regulations, Caltrans mimics the CEQA language by requiring that “[t]he determination of whether a project may have a significant effect on the environment calls for careful judgment based, to the extent possible, on scientific and factual data” (Cal. Code Regs., tit. 21, §1509.3(a)). However, now that the Rule is in place and the modeling methods are codified as reasonable practice, it is possible that the CEQA language, i.e., ‘necessary for full assessment of environmental impacts;’ could be stringently interpreted to require a level of detail comparable to conformity analyses.

Although many NEPA requirements are similar to those of CEQA, most professionals would consider the required level of analytical depth under NEPA somewhat less stringent than that required by CEQA. Under NEPA, agencies shall ensure that professional integrity and scientific integrity are incorporated into the discussions and analyses of EISs (40 CFR §1502.24). The modeling requirements under the Rule, CEQA, and NEPA may be considered as decreasing in the level of technical depth and analytical stringency required. In fact, conformity analyses should more than satisfy the NEPA air quality requirements, since the transportation demand modeling requirements of the Rule reflect the findings of a recent technical assessment of modeling approaches undertaken for the National Association of Regional Councils (Harvey and Deakin, 1993). In addition, court decisions, ruling on the accuracy of travel demand models, support the assertion that the technical analyses required by conformity will satisfy current level of detail requirements for air quality analyses under both NEPA and CEQA.³¹

Argument Four: Adoption of alternatives or mitigation measures may change the project scope or air quality impact, resulting in a negative conformity determination.

Under both the NEPA and CEQA processes, the alternatives analysis and mitigation sections of the EIS/EIR are considered the heart of the environmental process. It is critical that agencies pay special attention to the presentation of alternatives and analysis of potential project mitigation measures. Unless project alternative and mitigation analyses are prepared prior to making a conformity determination, a previously conforming project may no longer conform after it is modified.

Alternatives and Mitigation Under NEPA

Under NEPA, the alternatives section of the EIS should be based on the information and analysis presented in the affected environment (Section 1502.15) and environmental consequences (Section 1502.16) sections of the EIS. In addition, it should also comparatively present the environmental impacts of a proposed action and a reasonable range of alternatives which include both the proposed project and the no-action alternative. Agencies must:

- Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives that are eliminated from detailed study, briefly discuss the reasons for their elimination;
- Substantially treat each alternative considered in detail, including the proposed action so that reviewers may evaluate their comparative merits;
- Consider reasonable alternatives not within the jurisdiction of the lead agency;
- Include the alternative of no action;
- Identify the agency's preferred alternative (or alternatives if more than one exists) in the draft statement and present such an alternative in the final statement unless another law prohibits this alternative; and
- Include appropriate mitigation measures not already included in the proposed action or alternatives (40 CFR §1502.14(a)-(f)).

In the CEQ NEPA guidance entitled *Forty Most Asked Questions Concerning CEQ's NEPA Regulations* (46 FR 18026, 18027 (1981)), CEQ addresses the meaning of an 'appropriate range of alternatives to be considered' in its response to Questions 1(a) and (b): "What is meant by 'range of alternatives' as referred to in Section 1505.1(e)?" and "How many alternatives have to be discussed when there is an infinite number of possible alternatives?" Given that an infinite number of potential project alternatives are conceivable, CEQ advises agencies to consider a 'full spectrum of alternatives,' not necessarily a large number. The CEQ states that a 'reasonable number' will suffice.

The courts have reviewed the adequacy of NEPA alternatives analyses for over twenty years. For instance, in *Town of Mathews v. Department of Transportation* (527 F. Supp. 1055 (1981)), an EIS prepared by the USDOT was invalidated because the agency's discussion of a bypass alternative to a proposed highway was held inadequate by the court. In general, it is not unusual for NEPA documents to be invalidated by the courts for unsatisfactory alternatives analyses. Consequently, it is important that agencies strive to conduct and demonstrate thoughtful alternatives analyses in all EISs.

Under NEPA, mitigation has received little attention in the courts. NEPA serves an informational role in the decisionmaking process and does not require the implementation of mitigation measures. Nevertheless, projects have been delayed by the courts because an EIS has failed to provide mitigation measures to offset the impacts of a proposed action. In CEQ's NEPA regulations, mitigation includes:

- Avoiding the impact altogether by not taking a certain action or parts of an action;
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation;
- Rectifying the impact by repairing, rehabilitating, and restoring the affected environment;

- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of an action; and
- Compensating for the impact by replacing or providing substitute resources or environments (40 CFR §1508.20).

Alternatives and Mitigation Under CEQA

Under CEQA, EIRs should focus on feasible mitigation measures and alternatives to the project (PRC §21003). All feasible alternatives must be considered (Cal. Code Regs., tit. 14, §15126), where ‘feasible’ may include consideration of specific economic, environmental, legal, social, and technological factors (Cal. Code Regs., tit. 14, §14021(b)). Project alternatives are to be developed early in the interagency consultation process (i.e., prior to the publication of the draft EIS/EIR); this means that early coordination is essential, if the public comment requirements are to be satisfied. The no action alternative must be one of the alternatives analyzed (Cal. Code Regs., tit. 14, §15126(d)(2)). If the alternatives are rejected, the EIR must explain why the alternatives were rejected in favor of the proposed project (Cal. Code Regs., tit. 14, §15126(d)(1)). For example, a district court invalidated an EIS that failed to consider the alternative of routing traffic around the town.³² Consideration of alternatives must be documented. If the alternatives are rejected, then considerable documentation must be provided to demonstrate good agency decisionmaking, especially in the event that a lawsuit was ensued. The Rule supports the alternatives analysis requirement in stating that “the degree of specificity required in the transportation plan and the specific travel network assumed for air quality modeling do not preclude the consideration of alternatives in the NEPA [CEQA] process or other project development studies” (40 CFR §51.406).

An EIR must describe measures that could significantly reduce environmental impact (Cal. Code Regs., tit. 14, §15126(c)). The EIR should assure the prevention of significant avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when determined ‘feasible’ (Cal. Code Regs., tit. 14, §§15002, 15021, 15091; Duggan et al., 1988). The project shall not be approved unless the agency has eliminated or substantially lessened all significant effects on the environment ‘where feasible’ (Cal. Code Regs., tit. 14, §15092, PRC §21002, Duggan et al., 1988).³³ The agency has the authority to require mitigation measures (or even to deny the project) in order to avoid one or more significant impacts on the environment (Cal. Code Regs., tit. 14, §15041 and 15042) and may require the adoption of mitigation measures even if they are beyond the normal scope of the lead agency’s authority.³⁴ Thus, even if a regional air agency was the lead agency on a project, water quality mitigation measures might be required as a condition of approval. The EIR must describe the mitigation measures that are required as a condition of approval (Cal. Code Regs., tit. 14, §15094). In fact, all impacts that cannot be fully mitigated must be disclosed (Cal. Code Regs., tit. 14, §15127(f)). The lead agency must provide specific reasons that justify why the project is not required to fully mitigate all environmental impacts (Cal. Code Regs., tit. 14, §15093). It is important to note that mitigation measures can easily cross environmental media boundaries. For example, mitigation to reduce the potential impacts of a project on water quality may result in a proposal with a

design concept or scope that has also been modified in terms of conformity analyses for air quality.

Alternatives and Mitigation and Conformity

Not surprisingly, the Rule supports the alternatives analysis requirements of NEPA. The Rule indicates that "the degree of specificity required in the transportation plan and the specific travel network assumed for air quality modeling to not preclude the consideration of alternatives in the NEPA process or other project development studies" (40 CFR §51.406). If the NEPA [CEQA] process results in a final project with a design concept and scope that is significantly different from that in the transportation plan or TIP,³⁵ the Rule requires that the revised project undergo a new conformity determination. The revised project must meet the criteria listed in 40 CFR §51.410 through 40 CFR §51.446 for projects not from a TIP prior to NEPA process completion (40 CFR §51.406). Thus, conformity determinations for any projects that are subsequently modified should run concurrently with the NEPA[CEQA] process. Because projects must be consistent with the motor vehicle emission budget(s) in the applicable attainment plan or implementation plan submission (40 CFR §51.432), analysts must ensure that emissions from the project, in combination with the emissions from all other regionally significant projects planned for the area, do not exceed the motor vehicle emission budget. In fact, the only method that can realistically be used to assess compliance with this criteria is to re-run the regional model with the final modified project included in the 'action' scenario.

In addition, it is important that project sponsors remember that proposals may require mitigation for reasons other than air quality (e.g., wetlands, water quality, and cultural resources). Also, not every mitigated alternative will necessarily receive a positive conformity determination. Unless the alternatives and mitigation components of the NEPA process are conducted concurrently with the conformity requirements, it is possible that projects may enter a circular approval process in which a project must iteratively pass through NEPA analyses and conformity assessments (i.e., a mitigated project fails conformity and returns to the NEPA mitigation phase).

Argument Five: Public comment periods, unless coordinated, would run consecutively rather than concurrently, potentially delaying project implementation.

Most of the input into the NEPA [CEQA] process is provided by the lead and responsible agencies along with any trustee agency, federal agency, and any party directly affected by a proposed project. There are specific provisions in the respective regulations to incorporate all affected agencies and individuals who may have special expertise with regard to the proposed project and its possible environmental effects. However, NEPA [CEQA] also provide(s) for input from members of the general public, allowing for review and comment on decisions that are made during the environmental assessment process. Not surprisingly, there are significant benefits that can arise from active public involvement. For instance, valuable input can be gained from members of the public who have an interest in the proposed project. Second, agencies may avoid future legal battles if the public has an opportunity to participate in a decision that may affect their future.

Public Participation Under NEPA

Clearly, the NEPA process has been designed to assist federal agencies in determining the potential environmental effects that a project may have on an area by facilitating public participation in project scoping and document review. The NEPA regulations include requirements for commenting and document circulation. Under NEPA, the scoping process requires the involvement of several different parties, such as government, individuals, and organizations that may have an interest in the proposed project and EIS preparation. Preparation of the draft and final EIS must be followed by document circulation. In addition, the agency preparing a final EIS must formally respond to comments received from the circulation of the draft EIS in the final document.

Public involvement is one of the minimum legal necessities required by the NEPA process. The NEPA Regulations state that there shall be an early and open process for determining the scope of issues to be addressed in the EIS (40 CFR §1501.7).

The CEQ NEPA regulations list several requirements for the participation of interested parties in the preparation of a final EIS. After a draft EIS is prepared, agencies should obtain comments from other federal agencies with jurisdiction or special expertise. The CEQ regulations also require agencies to invite the participation of: 1) the appropriate state and local agencies; 2) Indian tribes, if the effects may be on a reservation; 3) any agency that requested statements on actions of the kind proposed by the EIS; 4) the applicant; and 5) the public, especially those individuals and organizations that may be affected or interested in the action on environmental grounds (40 CFR §1503.1(a)). Because every project is different, neither NEPA nor agency implementing regulations can specify a particular level of public review. Hence, the courts rely on tests of "reasonableness" or "good faith." This means courts can test an agency's actions according to a standard of reasonable treatment. If a community may be affected by a pending decision, the community should be notified. If the potential effects of an action will be substantial, individuals should be contacted. If the impacts are likely to be indirect or insubstantial, notification in newspapers is often considered sufficient.

Although the CEQ regulations are fairly detailed, they do not provide specific time periods for the public (and other interested parties) to comment on either the lead agency's decisions or any of the prepared documents. For instance, the CEQ regulations state that "the Council has decided that prescribed universal time limits for the entire NEPA process are too inflexible" (40 CFR §1501.8).

The USDOT's FHWA and FTA NEPA regulations give few guidelines for public comments timeframes in the environmental assessment process, but the regulations do encourage timely proceedings. "Early coordination with appropriate agencies and the public aids in determining the type of environmental document an action requires, the scope of the document, the level of analysis, and related environmental requirements" (23 CFR §771.111). If an applicant prepares an environmental assessment (EA), the EA does not have to be circulated, but it must be made

available for public inspection. The minimum time period for public comment on an EA is 30 days from the time the EA was made available for written comment (23 CFR §771.119(e)).

The draft EIS should be circulated for comment by the applicant on behalf of the FHWA or the FTA. If a public hearing is held during the circulation period, the draft EIS should be available at least 15 days before the hearing and at the meeting itself. Comment periods on the draft EIS must last for a minimum of at least 45 days from the public notice, which is usually listed in the *Federal Register* (23 CFR §771.123(i)). The FHWA and FTA NEPA regulations also provide for public review of the final EIS; this requires that the document be made available in the applicant's office and at the appropriate FHWA or FTA offices at the time the final EIS is filed with the USEPA (23 CFR §771.125(g)).

In contrast to the CEQ regulations that address specific timeframes for public review of relevant documents before the issuance of a decision to prepare an EIS or ROD, the USDOT's FHWA and FTA timeframe requirements focus specifically on public participation for the draft EIS. This lack of specificity offers agencies flexibility in determining the length of time required for public participation on other NEPA processes.

Finally, it is important for agencies to note that public involvement is really an on-going activity for offices involved in the NEPA process. If an agency has routinely notified the public of upcoming projects through a newsletter, such notification may suffice as an acceptable form of public involvement for site-specific projects that have no direct effects on any agency or person (e.g., small-scale project included in a TIP). Consequently, agencies should continually notify the public of their activities, although this may not be specifically required by NEPA or the Rule.

Public Participation Under CEQA

In contrast, CEQA addresses public participation in more detail than NEPA, i.e., it provides guidelines for most of the steps in the CEQA process. The CEQA guidelines (California Code of Regulations, Title 14) offer specific public comment periods for some steps in the environmental review process and provide a statute of limitations period for public actions for other steps in the process.

Although there is no specific provision for public review of a notice of exemption, the California CEQA Guidelines state that the filing of a notice of exemption starts a 35-day statute of limitations period for legal challenges to an agency's decision. This period is extended to 180 days if no notice of exemption was filed (Cal. Code Regs., tit. 14, §15062(d)).

Under CEQA, the lead agency has 30 days from the submission of a project application to determine if the project is ministerial or discretionary, exempt from CEQA, or could result in a potentially significant environmental effect. As soon as the lead agency has determined that an initial study is required, it must consult informally with all responsible agencies to obtain recommendations regarding the project impacts, i.e., whether an EIR or a negative declaration (i.e., finding of no significant impact) must be prepared.

It is the lead agency's obligation to provide public notice that it intends to adopt a negative declaration (ND) to all organizations and individuals who requested notice. The lead agency also must give notice of its intent by publicizing the decision either: 1) in a newspaper of general circulation in the area affected by the proposed project; 2) by a posting on and off site of the area in which the project will be located; or 3) by direct mailing to owners of property contiguous to the project (Cal. Code Regs., tit. 14, §15072). When a ND is prepared and submitted to the State Clearinghouse, the public must be provided with a 30-day period to submit their comments, which the lead agency must respond to (PRC §21091, §21092), unless a shorter period is approved by the State Clearinghouse (Cal. Code Regs., tit. 14, §15073). Caltrans extends the comment period in their CEQA implementation regulations such that “[a]ny substantive comments received within 45 days of the public notice and circulation of the ND as provided in Section 1509.7(b) will be considered” (Cal. Code Regs., tit. 21, §1509.7(c)). The decision to certify the ND can only be made if there is no substantial evidence in the record that the project will have a significant effect on the environment (Cal. Code Regs., tit. 14, §15074(b)). If there is disagreement between experts over the “significance” of an environmental effect, the lead agency is required to treat it as significant (Cal. Code Regs., tit. 14, §15064(h)(2), Duggan, et al., 1988), requiring that an EIR be prepared.

After preparing a draft EIR, the lead agency must provide public notice of the availability of the draft. This will be done at the same time the agency sends a notice of completion to the Office of Planning and Research using at least one of the three methods listed above for the publication of a ND. A minimum public comment period of 30 days must then be undertaken (PRC §21091); 45 days is required if the draft EIR is prepared by a state agency that is the lead agency or the responsible trustee for the agency preparing the EIR, or if the document also serves as the NEPA document (Cal. Code Regs., tit. 14, §15205). The Caltrans regulations for implementing CEQA require that “[r]eviewers shall be given a reasonable length of time to submit their comments. Forty-five days plus mailing time is considered to be reasonable. If at all possible, requests for time extensions of up to fifteen days shall be granted” (Cal. Code Regs., tit. 21, §15to 12). There is no provision for public review of the final EIR under CEQA.

CEQA requires that the lead agency solicit and respond to comments from the public and other affected agencies regarding the draft EIR (PRC §§21104, 21153, 21092; Cal. Code Regs., tit. 14, §§15086, 15087). A candid response to all comments from agencies and responsible parties must be included in the final EIR (Cal. Code Regs., tit. 14, §15088). Good faith and reasoned analysis must be evident in the lead agency’s response to comments; responses that are unsupported by fact are generally considered inadequate (Cal. Code Regs., tit. 14, §15088; Duggan et al., 1988).

Public Participation Under the Conformity Rule

As discussed previously, the Conformity Rule indirectly requires that public comments be solicited during the conformity process. The Rule (40 CFR §51.402(e)) requires that “...agencies making conformity determinations on transportation plans, programs, and projects shall establish

a proactive public involvement process which provides the opportunity for public review and comment prior to taking formal action on a conformity determination for all transportation plans and TIPs, consistent with the requirements of 23 CFR Part 450.” Agencies must also “provide opportunity for public involvement in conformity determinations for projects where otherwise required by law” (40 CFR §51.402(e)). In addition, the agencies must specifically address in writing all public comments in which regionally significant projects -- not receiving FHWA or FTA funding -- have not been properly reflected in an emission analysis, which supports a proposed conformity finding for a transportation plan or TIP (40 CFR §51.402(e)). Hence, it could be inferred that a comment submission period is also required by the Rule.

Under 23 CFR 450, a public review period for all transportation plans and TIPs in nonattainment areas is required. Public notice must be provided for the public involvement process, open public meetings must be held, and time for public review and comment must be provided. Further, “in nonattainment areas, classified as serious and above, the comment period shall last at least 30 days for the plan, TIP, and major amendments” (40 CFR §450.316(b)(1)(iv)).

Significant written and oral comments on a draft transportation plan or TIP that result from the public involvement process or the conformity interagency consultation process must be summarized and addressed as a part of the final plan and TIP (40 CFR §450.316(b)(1)(vii)). If the transportation plan or TIP changes significantly between the draft plan or TIP, the modified plan or TIP must undergo another public hearing/comment process.

Transportation planning regulations require that the MPO public process “shall be coordinated with other statewide public involvement processes (see NEPA/CEQA section of this volume) wherever possible to enhance public consideration of the issues, plans, and programs, to reduce redundancies and costs” (40 CFR §450.316(b)(1)(xi)). Hence, coordination with NEPA/[CEQA] can be inferred. If the NEPA/[CEQA] provisions can be interpreted to require that project conformity determinations be made during the EIR/[EIS] process, then the NEPA/[CEQA] public comment requirements apply to conformity.

The consultation procedures that are required to be adopted in the SIP revision do not explicitly require the incorporation of public involvement procedures. In fact, the Rule’s language only indicates that “[t]he implementation plan revision required under §51.396 of this chapter will include procedures for interagency consultation (Federal, State, and local), and resolution of conflicts” (40 CFR §51.402(a)). Specific public comment procedures should probably be addressed in the consultation process and incorporated into the SIP, keeping in mind that doing so would make these public procedures enforceable through the SIP.

Coordination of NEPA/[CEQA] and Conformity Public Comment Periods

As a result of the extensive public comment requirements of the NEPA/[CEQA] and conformity programs, both in terms of the length of comment periods and response to comment requirements, only when the conformity process is coincident with the EIS/[EIR] process will the conformity determination be approvable during the final EIS/[EIR] stage.

Unless the NEPA[/CEQA] and conformity processes are coordinated, the 45 to 60 day NEPA[/CEQA] public comment periods would be followed by the public hearing requirements and any public comment requirements of local MPOs that flow from 23 CFR Part 450 transportation planning requirements. It is conceivable that a project could complete the NEPA[/CEQA] process after the lead agency requires mitigation for one or more environmental impacts (perhaps not even air related) and later be determined not to conform with the SIP (i.e., stopping the project), returning the project to the NEPA[/CEQA] process for another round of determinations. Separate analytical processes and preparation of response to comment documents during the NEPA[/CEQA] and conformity processes would be duplicative and wasteful.

MODELING ISSUES

This section of the volume describes the relative level of modeling effort required for each type of analysis and the importance of meeting specific modeling requirements. Issues related to the uncertainty associated with using the prescribed models are also addressed.

NEPA/CEQA Modeling Requirements

Few references in NEPA[/CEQA] are made to quantitative analysis, and even fewer references to modeling. Although there are specific procedures and requirements for modeling listed in the conformity guidelines for transportation plans, programs and projects, there are only a few references to quantitative analysis in the guidelines for NEPA[/CEQA]. The steps listed in these statutes and the subsequent guidance documents for determining and mitigating adverse environmental impacts provide little guidance on the preparation and use of quantitative evidence. There are no modeling requirements listed in the USDOT regulations for implementing NEPA. The CEQ regulations for writing an EIS declares only that "[a]gencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impacts statements" (40 CFR §1502.24).

The CEQA regulations state that the determination of whether or not a project may have a significant effect on the environment and should be approved or not will be "based on substantial evidence in the record" (PRC §21082.2 and §21081.5). Only one reference to quantitative analyses appears in the *California CEQA Guidelines and the Caltrans Regulations for implementing CEQA*, i.e., where a determination of significant effects on the environment that calls for careful judgment on the part of the public agency involved, which is based to the extent possible on scientific and factual data (Cal. Code Regs., tit. 14, §15064(b); Cal. Code Regs., tit. 21, §1509.3(a)).

Historically, the modeling sections of EIS/EIRs have not been comprehensive. Recent CAA lawsuits over the modeling approaches taken in motor vehicle emission analyses may also change the effective requirements of NEPA[/CEQA] and will be discussed later. With the new

conformity requirements and an emphasis on modeling by local agencies, the importance of modeling to meet conformity and NEPA/[CEQA] requirements has been heightened.

Comments in the USEPA Conformity Docket Related to Modeling

The docket for the draft transportation conformity rule (USEPA 1994) contained a stack three feet high of comments submitted by interested state and local agencies, businesses, public interest groups, and members of the general public. During a one-day period, ITS-Davis staff visited Washington, DC, and screened all of the public comments submitted. The docket contained form letters as well as copies of previously-published research papers that were not reviewed. Approximately 300 pages of comments were copied and reviewed in detail by ITS-Davis staff. Appendix B, EPA's Request for Comments on the Conformity NPRM, shows a list of questions that USEPA requested comments on for the docket and Appendix C, A Summary of Relevant Comments Submitted to the Docket, contains a summary of other relevant comments submitted to the docket. Surprisingly few of the comments dealt directly with the accuracy and uncertainty in the use of state-of-the-practice emissions modeling techniques. The major issues associated with modeling requirements, gathered from the docket, are summarized below:

The Minnesota DOT (USEPA 1994, IV-D-76) noted that "a continuing constraint in air quality analysis is the assumption that transportation models are specific and precise enough to provide precise emissions data. Transportation models are most useful for long range guidances, and were not intended to provide for specificity." The Louisiana DOT (USEPA 1994, IV-D-84) similarly stated that "care should be taken to understand the limitations of the transportation models to estimate mobile emissions to the degree of accuracy that may be implied in the rules."

Emission factors and their derivation were questioned by several different organizations, especially in California. One general concern was the tenuous relationship between average vehicle speed and emissions. In addition, concern was raised over the representativeness of the test fleets used to develop emission relationships, the role of high emitters in these relationships, and whether these relationships hold over time as the fleet evolves.

Testimony by Brian Smith, Chief of Caltrans' Division of Transportation Planning (USEPA 1994, IV-D-15), called into question the analytical tractability of the models to perform the tasks that they are being asked to perform, and he also noted that local analytical capabilities (i.e., skill and expertise) vary greatly:

"One of the underlying issues throughout the conformity determination process is the assumption that our technical and analytic methodologies and capabilities are adequate to perform a reliable conformity determination. Similarly, there are differences among regions in terms of technical and analytic capabilities that may result in different conformity findings. We need to recognize that as our technical and analytic capabilities improve, revisions to earlier findings may be necessary. The consequences of this evolutionary process on conformity determination and

emission schedules is not clear, particularly in terms of emission reduction schedules and sanctions.”

The Minnesota Pollution Control Agency (USEPA 1994, IV-D-67) recognized that air quality models still do not predict well and are not accurate past ten years. The Transportation and Air Quality Committee of the Transportation Research Board of the National Research Council recently noted that better models remain a major research challenge.

The North Carolina DOT (USEPA 1994, IV-D-41) suggested that many of the incorrect assumptions of the effect of highway improvements on air quality are due to the structure of the MOBILE model. Some of the potential factors being worked on by the USEPA that are addressed are driving cycles and relations of emissions to road type, average speeds, and cruise speed. By addressing these issues, the USEPA feels that the “true impacts of transportation system improvements” can be modeled, and this work may “dispel some of the current widespread misconceptions among many groups.”

The Wasatch Front Regional Council (USEPA 1994, IV-D-68) noted:

“Our main concerns with regard to conformity are related to accuracy restrictions of the (travel demand and emission) models. The transportation planning process, must be better linked to the air quality planning process. Unfortunately, we believe that there has not been a distinction made between procedural improvements and technical improvements. Our comments, in general, are related to the difficulty in interpreting procedurally based rules in the technical framework of transportation planning, which includes disruptions that may be caused by interpreting and documenting unclear procedures as opposed to methodologically improving the transportation models and transportation planning process to better integrate air quality concerns.

The reliance on models has clear advantages over trial and error across the population. On the other hand, transportation models have inherent inaccuracies. The combined inaccuracies of the travel demand models and the emission models is a cause of concern for certain types of analysis. There appears to be a strong reliance on travel demand and emission model over a relatively short time period. It will take our area more than two years to complete a home interview survey to improve our models to be better responsive to demand management and related air quality issues. Improvements to speed estimates, particularly at the high and low speed ranges, as well as concerns about the emission estimates for steady flow speed conditions, are only beginning to receive national research attention.”

Californians for Better Transportation (USEPA 1994, IV-D-72) recognized the limitations of the models:

“Transportation and air quality models are simply incapable of yielding reliable data of the type required by this rule, especially for individual projects. Further,

the conformity analyses in the recent past have consistently indicated that the impact of transportation plans and programs on air quality are extremely marginal. Measured differences between the build and no-build transportation alternatives mandated by the rules consistently fall well below the threshold of reliability for regional transportation and air quality models.”

In modeling hot spots, most comments addressed the USEPA provision of better modeling guidance than currently exists in 40 CFR Appendix W and other related documents. Other commenters questioned the accuracy of the microscale models currently available. Microscale models have significant limitations with respect to accuracy, which must be recognized. Orange County (USEPA 1994, II-D-09) commented that CO emissions for hot spot analyses based on fleet average characteristics were not appropriate. Orange County also cited other modeling problems, such as the failure to include cold starts and the use of “artificial meteorological data” in modeling.

Modeling Uncertainty Issues

All of the comments submitted to the USEPA’s Rule Docket regarding the uncertainty associated with quantifying motor vehicle emissions and assessing emission impacts, reflect the current state of knowledge in the emission modeling field. Significant problems exist in current modeling techniques. The uncertainties in existing methods are great, and significant research efforts are currently being undertaken by regulatory agencies and motor vehicle and fuels manufacturers to improve motor vehicle emission estimates.

In general, the docket comments closely reflect many of the significant issues raised by the conformity modeling guidance prepared by ITS-Davis (Guensler, et al., 1994). In summary, one of the greatest problems with project-level emission magnitude tests and project-level emission budget tests is that minor increases and decreases in the predicted emissions from a modeling demonstration cannot be reasonably discerned from model ‘noise.’

This section first summarizes the modeling methods and analytical steps employed in assessing emission impacts. Second, the problems arising from the application of regional scale models to the assessment of project-level emissions are discussed. Finally, uncertainty issues associated with existing air quality impact models are reviewed.

Emission Modeling Efforts

The assessment of emission impacts is a threefold modeling effort: 1) identifying and quantifying emission-producing vehicle activities; 2) coupling each emission-producing vehicle activity with its appropriate emission rate given the existing vehicle operating and environmental conditions, which provides a quantitative emissions estimate; and 3) dispersing the spatially and temporally allocated emissions over the region and assessing the pollutant concentrations that

result. For a more detailed outline of the important parameters in the modeling process, see Guensler (1993).

The first step in the modeling process is to identify and quantify emission-producing vehicle activities. The identification of emission-producing vehicle activities stems from a laboratory effort, where vehicle testing has resulted in the conventional wisdom that engine starts, VMT, and hours of engine idling are emission-producing vehicle activities. For each emission-producing activity, certain vehicle operating and environmental parameters are modeled as playing a role in the magnitude of emissions associated with each activity. Thus, the major modeling effort is quantifying the emission-producing vehicle activities that occur in a region (specifically, number of trips, vehicle miles of travel, and hours of vehicle idle) and noting the vehicle operating conditions and environmental parameters that are modeled as affecting the magnitude of those emissions (e.g., average vehicle speed, ambient temperature, fuel composition, and many other factors). The uncertainty resulting from the first modeling step is threefold: 1) the premise that the important emission-producing activities are being modeled is often flawed; 2) the accuracy in quantifying the vehicle activities is poor; and 3) the environmental and operating condition data employed in the next step of the analysis (e.g., average speeds, temperature, etc.) are uncertain.

The second step in the emission impact modeling process is to link the vehicle activities defined in the first step with the appropriate emission rates. Essentially, a computerized matrix of emission rates for each environmental and vehicle operating condition is developed and takes the form of the emission rate model, such as MOBILE or EMFAC. These emission rates are based upon relationships determined during the laboratory analysis of various vehicle test fleets undertaken during emission rate model improvement and update efforts. In the second step, the uncertainty is associated with the accuracy of the internal modeling algorithms. The uncertainty associated with the outputs from emission models is typically linked back to: 1) the size and representativeness of the sample fleet, and 2) the vehicle to vehicle variability in emission response to changes in emission-related variables (e.g., changes in temperature or average speed).

The third step in the modeling process employs the emission outputs from the first two steps and combines these estimates with modeled estimates of atmospheric meteorology to determine: 1) where the pollutants will travel; 2) how they will be diluted in the atmosphere; and 3) what concentrations of pollutants will result in areas where human exposure is likely to occur. The goal of the third modeling step is to predict when projects are likely to violate an ambient air quality standard. Uncertainties in the third modeling step are associated with the atmospheric dispersion algorithms and modeled chemical/atmospheric relationships.

Analysis of Modeling Uncertainties

Analysis of uncertainties in the various modeling steps can take four forms: 1) model validation, 2) sensitivity analysis, 3) confidence analysis, and 4) Monte Carlo simulation analysis.

- Model validation focuses on the ability of the combined modeling steps to predict the desired output; typically the exceedance of an ambient pollutant concentration standard. The important aspect to be noted here is that the model validation always focuses on the purpose of the model output. That is, if the model or model combinations are designed to predict air quality standard exceedances, they must be validated by examining their performance against field measurements of pollutant concentration. If the models or model combinations are designed to predict emissions, they must be validated by examining their performance against field measurements of emissions. At present the emission models used are validated only on the basis of predicted versus actual atmospheric concentrations. Model validation does not examine the internal workings of the models nor does it concern itself with whether positive and negative errors cancel each other out in the various modeling steps. The important aspect is whether the models are reliable today. Note, however, that if the internal model relationships are invalid, these models may not be reliable in the future as important variables in the fleet change over time. For this reason, model validation should be performed on an ongoing basis.
- Sensitivity analysis predicts how responsive the emission prediction results are to errors in vehicle activity and environmental and vehicle operating conditions input. Although these types of analyses are the most commonly performed by agencies and consulting firms, sensitivity analyses only determine the impacts of errors that result from the preceding modeling step. The findings of a sensitivity analysis, assuming that the internal components of the models are valid, provide a sense of model output reliability.
- Confidence analysis is more relevant to the analysis of inherent uncertainty associated with the numerical algorithms contained in the various models. For example, a trip generation model might predict that the average household generates 6.5 trips per day. Confidence interval analysis might indicate that we are 95 percent confident that the average household trip generation lies between 6.3 and 6.7 trips per day. Similarly, the modeled carbon monoxide emission rate at an average speed of 65 mph might be modeled as being 1.6 times the emission rate for an average speed of 16 mph. Confidence interval analysis actually indicates that the 65 mph average speed emission rate lies between 0.8 and 2.6 times the 16 mph average speed emission rate (Guensler, et al., 1994). Confidence interval analysis also provides a sense of model output reliability, especially when modeling the effects of single variable changes, such as average speed along a corridor.
- Finally, Monte Carlo simulation analysis carries confidence interval analysis to a significantly greater level of detail. In this analytical approach, probability distributions for measured input variables and internal model algorithms are employed rather than the actual measured and average values. The analyses are repeated thousands of times, allowing the probability functions to determine what values are employed in each analysis. The final distribution of modeled outputs provides a sense of model outputs accuracy. This type of analysis was conducted in a research project funded by the National Cooperative Research Project and conducted by a research team centered at the University of Tennessee, Knoxville.

Demand Modeling Issues

The modeling methods used to quantify vehicle activity and emissions have been the subject of a recent technical assessment (Harvey and Deakin, 1993), and the efficacy of the methods employed has been the subject of a series of high profile lawsuits in California.³⁶ The final case brought before the court questioned whether sixteen mandated TCMs did in fact yield sufficient emissions reduction to achieve 'reasonable further progress' as defined in the 1982 Bay Area Air Quality Management Plan for the San Francisco region. The technical issues surrounding the lawsuits were complex and involved testimony from expert witnesses on the subject of transportation demand modeling for the plaintiff and the defendant. Even the judge employed a third technical expert as an advisor. The suit resulted in the finding that the most reasonable modeling methods shall be used in the assessment of air quality impacts.

Harvey and Deakin were directly involved in the case and provide additional insight, not just into the case decision and order, but into the evidence that was presented by both the plaintiff and the defendant during this case. Their findings are summarized below (FHWA, 1992):

- One of the main points of contention was whether the Metropolitan Transportation Committee (MTC) used "standard practice and analysis" to determine the emission impacts of previous plans. The environmental groups argued that standard practices overestimate the emission benefits of highway investments by showing speed improvements while not accounting for the "induced" travel from the faster times. Thus, a method to incorporate feedback needs to be defined in mode split and trip distribution. This line of argument brought out possible variables that need to be included in modeling transportation and air quality.
- While the MTC supported using travel time in models as they relate to trip generation, auto ownership, residential location, and employment location (including appropriate feedback), the environmental groups supported the additional use of travel times in trip chaining, regional population, and economic growth relationships in the modeling efforts. The emphasis by the environmental groups was on the importance of the regional economic situation, specifically population and job growth that could stimulate vehicle trips and thus would nullify any emissions benefits. In many of the highway and transit planning documents, economic stimulus is an important part of justifying certain projects. However, this economic growth may actually counteract any emission benefits and may have significant impacts on plan conformity determinations.
- While the MTC's analysis procedure was deemed reasonable, the judge also noted that incorporating the effect of infrastructure on regional growth was not invalid because "nothing in his reading of the 1990 Amendments would preclude EPA from requiring such an analysis in future guidance." This is likely the reason that the Rule stipulates that these economic factors shall be included in the most detailed models where technically feasible (i.e., where sufficient information to establish these relationships exists).
- The MTC case was important because it addressed the kind of analyses that would be necessary to assess regional impact of "highway capacity investments." The cost of data and

model development are concluded to be very important. In fact, the cost of the necessary information may actually be greater than the potential litigation costs. Transportation modelers and professionals question if the models can incorporate all the factors discussed above in an accurate manner. "Existing models were conceived to support relatively narrow sizing and location decisions, given assumptions about basic facility needs." Because of this case and the conformity assessment, analyses of major projects will have to be more detailed and critical.

- The majority of the required modeling improvements appeal to common sense and appear reasonable. For example, requiring that the average speed predictions for the network be consistent throughout all modeling steps, or that a feedback loop be used between modeling steps until equilibrium is attained, makes intuitive sense. In addition, the improvements are technically feasible (e.g., the model was already capable of performing these analyses, it just required additional analytical resources), and in theory, should improve the accuracy and stability of the model outputs over time. However, from a technical perspective, the court findings in the MTC case are disturbing. The arguments presented in the decision did not contain an assessment of the uncertainty associated with the outputs of the travel demand models in question and whether the required modifications would result in a more accurate assessment of motor vehicle emissions.

The mandated demand modeling improvements are of relatively minor concern compared to the fact that the analytical arguments all assumed that: 1) vehicle activities being measured were the most significant emission-producing activities of concern; 2) vehicle activity output uncertainty was deemed less important than ensuring the models used methods that were considered best professional practice; and 3) emission rate model outputs were accepted without question as being accurate. No discussion related to the accuracy of the vehicle activity and emission rate estimates appeared in the final ruling. Given the recent findings related to uncertainty regarding average speed emission relationships and cold and hot start emission rates (Guensler, et al., 1994), this oversight is potentially damaging with respect to reliance on the scientific method in legal proceedings and in determining when model outputs provide reasonable scientific evidence.

Summary of Emission Modeling Problems in Conformity Analysis

A review of the modeling tools that are recommended for emission quantification and emission impact conformity analyses is contained in Guensler, et al. (1994). The general conclusions of this review include:

- The outputs of the current project assessment models are highly uncertain. The vehicle activity and emission rate models were never designed to provide corridor emission estimates. There is inherent uncertainty in the activity, emission rate, and dispersion model parameters employed in the analyses. As discussed earlier, emissions modeling tools have not been validated for their capabilities at predicting fleet emission quantities. The most recent tests resembling validation for this purpose are the tunnel studies, which concluded that the emissions models do a poor job of predicting CO and hydrocarbon emissions (see Guensler, et al., 1994).³⁷ Yet, even these types of studies appear to involve tremendous

uncertainties in themselves (Washington, 1994). Significant modeling improvements are required if the available project assessment models are to be used to accurately assess project-specific emissions for either emission magnitude tests or emission budget tests.

- Because the model outputs are uncertain, analysts should not immediately conclude that a modeled result showing an emission increase or decrease associated with a project is accurate. There are a number of qualitative conditions that can be reviewed in concert with modeled outputs to assess when emissions are more likely to increase or decrease. For example, when average speed is the only parameter that changes, the modeled emission rate output is subject to very wide confidence intervals. Using the same example described before, confidence interval analysis actually indicates that the 65 mph average speed emission rate for carbon monoxide lies between 0.8 and 2.6 times the 16 mph average speed emission rate (Guensler, et al., 1994). However, if the patterns of vehicle flow become smoother as a result of the change in average speed, we can reasonably assert (based upon recent findings associated with modal emissions) that the emission rate change is more likely to reside somewhere in the lower confidence bound than in the upper confidence bound, probably increasing emissions but not by as much as the average value may indicate.
- There is much less uncertainty in predicting the emissions changes associated with increases/decreases in the number of trips made or VMT than there is in estimating emission rates following changes in average vehicle speed and other operating/environmental factors.
- There is less uncertainty associated with the application of hot-spot modeling procedures for use in predicting near-term violations of the one-hour CO standards than there is with emissions prediction, because the models have been and continue to be validated for the purpose of predicting hot-spots. The capabilities of hot-spot models are currently limited in predicting violations of eight-hour CO standards (Chang, et al., 1994). Care must be taken in applying hot-spot models to future scenarios because the validation process does not examine each step in the modeling process to insure that the causal relationships are valid, only whether the model accurately predicts under today's conditions. Hence, if important variables are misrepresented in the model and these variables change over time, the predictive ability of the model in the future may suffer.
- A nomograph system (a set of graphic lookup tables) should be prepared for determining when one-hour and eight-hour project level analyses are superfluous under conformity. This nomograph system should recognize model limitations and be structured accordingly such that unnecessary analyses are avoided and necessary analyses are not overlooked.

Project Level Emission Assessments

The project-level emission assessment requirements for non-federal projects (40 CFR §51.450) were added to the Rule after the publication of the notice of proposed rulemaking. The new Rule section was added in response to comments submitted to the USEPA on the proposed rule by parties that believe that the CAA conformity requirements apply to both federal and non-federal (as defined by the Rule) projects. Although the USEPA restated their position that conformity determinations need not be made for non-federal projects (58 FR 62205), the USEPA added new

provisions for non-federal projects to insure: 1) the integrity of the transportation planning process; 2) the soundness of the emission accounting process (i.e., so that emissions from non-federal projects will not have to be offset at a later date); 3) there is no incentive to shift funding from federal to non-federal sources; and 4) non-federal projects will not be able to proceed until a conforming plan and TIP are in place.

The new section of the Rule requires that unless the non-federal project is specifically included in the plan and TIP and incorporated into the emission budget analyses used to demonstrate plan and TIP conformity, a project-level emission assessment must demonstrate that the project does not increase emissions (applies during both Phase II of the interim period and the transitional period). Hence, during these periods a project emission magnitude test must be undertaken.³⁸

None of the comment letters submitted to the docket directly addressed the issue of whether the required models were accurate in estimating project-level emissions. In part, this may be due to the fact that the notice of proposed rulemaking would have only required project-specific emission analysis for a small number of projects (58 FR 62204). In the first draft of the Rule, project-level emission budget analyses (58 FR 3793) and demonstrated project-level contributions to emission reductions (58 FR 3795) were only required for federal projects not from a conforming plan and TIP. These projects are likely to be in non-MPO areas, are not likely to be significant in number, and seem less likely to result in significant public controversy. While additional requirements for project-level emission analysis were added in response to public comments on the draft rule, these sections were added without the benefit of full public comment nor an opportunity for the expression of opposing views.

Significant analytical uncertainty is associated with emission quantity and emission budget determinations that involve changes in parameters for single projects. Less uncertainty is likely to be associated with emission budget demonstrations when significant system changes occur since errors tend to cancel each other out. Significant analytical uncertainty is associated with all conformity determinations made for future milestone years because causal relationships represented in the models are often not validated. The noted uncertainties call into question the premise that emission budgets for mobile sources can or should be elevated from the status of a planning tool to that of an enforcement tool.

Nevertheless, the Rule clearly and directly requires that project-specific emission assessments be conducted. The Rule also stipulates which models must be employed and how the model outputs shall be interpreted. The regulation has undergone a public hearing process and has been appropriately adopted into law. Hence, the specific conformity requirements must be followed. Failure to comply with the analytical requirements in the Rule is likely to result in litigation.

Options available for modifying the hot-spot modeling methods are prescribed by the Rule (and contained in the USEPA modeling guidance (1986a)). The prescribed methods must be used "unless, after the interagency consultation process described in 40 CFR §51.402 and with the approval of the USEPA Regional Administrator, these models, databases, and other requirements are determined to be inappropriate" (40 CFR §51.454(a)). However, similar provisions for determining the 'appropriateness' of applying regional modeling methods to project emission

assessments nor modifying these analytic requirements are not specifically provided. The only potential solution to the project modeling dilemma appears to lie indirectly in the interagency consultation procedures (40 CFR §51.402(c)(1)(i)), which requires a process involving the MPO, state and local air quality planning agencies, state and local transportation agencies, the USEPA, and the USDOT for “[e]valuating and choosing a model (or models) and associated methods and assumptions to be used in hot spot analyses and regional emissions analyses” (40 CFR §51.402(c)(1)). ITS-Davis staff recommend that the interagency process be used to rationally address uncertainty issues in the analytical methods. The public participation process associated with the SIP approval process may be sufficient to make any necessary modeling method changes. However, the Rule may need to undergo a new rulemaking process to incorporate the necessary changes to the statutory requirements.

Including Uncertainty Analysis in Decisions

Under CEQA, the EIR must acknowledge any uncertainties that are inherent in the document. Since drafting an EIR involves some degree of forecasting and inherent uncertainty, the agency must use its best efforts to qualify, quantify, and disclose all of the uncertainties that it reasonably can (Cal. Code Regs., tit. 14, §15142, 15144). Under NEPA, EISs must be prepared if there is a potential for environmental impact, even if there is a great deal of uncertainty in projecting future impacts.³⁹

Conformity determinations, however, do not require an assessment of uncertainty. The emission analysis must present a finite estimate and cannot be presented in terms of error bounds (Brucker, 1994). Since a number of requirements of the Rule stretch the bounds of model applicability and the mandated modeling methods are highly uncertain, these requirements are an issue of great concern. The USEPA, however, has indicated that concerns regarding modeling can be handled during the consultation process (Brucker, 1994). ITS-Davis staff recommend that implementing agencies address modeling concerns during this process.

Safety Factors to Reduce Modeling Requirements

If, during the course of project approval, the design or scope of the project is modified, new emission analyses are required under the Rule. Yet, if these modifications do not change the assessment of worst-case traffic activity data, an argument can be supported that a supplemental analysis is unnecessary. In theory, if a ‘safety factor’ were applied to the traffic activity data associated with each project within a TIP (i.e., the traffic activity data for each project were purposely overestimated), subsequent changes in traffic activity, which are caused by evolving projects from a conforming TIP, could be accommodated without reanalysis. Project activity data would simply be reviewed to validate that the data still conform with (i.e., are less than) the assumptions used in the original project impact modeling demonstration. Similarly, if projects not from a conforming TIP that provide a safety factor are deemed conforming, changes to project design or scope that remain within the safety factor might avoid repetitive analysis during project evolution. Each time a new TIP is analyzed for conformity (e.g., every two years in

California), the final activity levels for all projects, adopted since the last TIP conformity demonstration, would be incorporated into the baseline level and new safety factors would be considered.

To implement this procedure, project activity safety factors must be approved by the interagency working group. The initial USEPA reaction to this concept was that a separate analysis should be performed for each and every set of assumptions as project parameters evolve (Brucker, 1994). The ITS-Davis staff recommend that the USEPA should reconsider this interpretation of the Rule, given the current accuracy of the existing models and the costs associated with duplicative modeling. Computerized project databooks (discussed below) could insure that worst-case analyses reflect the impacts of the project throughout any proposed midstream project changes.

Project Databooks

Each conformity analysis must contain a discussion and justification of model choice selection. The latest planning assumptions relevant to population, employment, vehicle activity, background pollutant concentrations, transit ridership and policies (e.g., fares), TCM effectiveness, etc., must be used. The assumptions used in conformity analyses (and NEPA/CEQA analyses) must be explicitly described, justified, and documented.

This report recommends that a project databook (initially proposed by Davies, 1994) be prepared for each project. The databook would contain a detailed description of all vehicle activity and emission rate assumptions, as well as the vehicle activity datafiles that will be employed in subsequent analyses. When any remodeling of a project is required, the analysts can rely upon the information contained in the project databook and can make appropriate changes to the data. In addition, any safety factors associated with vehicle activity estimates could be documented in this format to address any concerns regarding the tracking of activity assumptions in conformity determinations.

ITS-Davis staff interpret "public availability" of conformity determinations as requiring that any project's analysis be made available to an interested party in a common electronic media (i.e., computer disk format today). A computerized databook would contain the: 1) public domain emissions impact model; 2) model input files used to describe the project and to assess the impacts; 3) detailed descriptions of modeling technique and assumptions; and 4) datafiles describing the design elements of the project related to capacity and operation that will determine the traffic volumes and conditions under those volumes. The proposed project databook could describe all data and analyses over the lifetime of the project and would serve as a NEPA/CEQA audit trail.

Non-Transportation Projects That Affect Transportation Projects

An additional issue associated with transportation conformity is the potential for non-transportation projects to have a significant impact on the transportation system. The Rule does not address indirect impacts of non-transportation projects directly. For example, if a major private shopping mall is slated for construction, and the NEPA/CEQA process requires the developer to mitigate transportation impacts (thereby constituting a federal or non-federal regionally significant project), the transportation project modification appears to be subject to conformity. Hence, the transportation impacts associated with the non-transportation project must appear in the plan and the TIP and be accounted for in the attainment planning process. Addressing this issue in the NEPA/CEQA process will require additional attention from the parties involved and should probably be addressed in the development of the interagency consultation guidelines.

POTENTIAL LITIGATION

One of the most important reasons for correctly preparing an EIS/EIR is the potential for civil litigation. A conscientious effort in making conformity determinations, either within or without the NEPA/CEQA process, is similarly important. It is in the best interest of agencies seeking to prepare documents under the Rule or NEPA/CEQA to do so as thoroughly and accurately as possible. It is important to remember that legal challenges may occur months or even years after a NEPA/CEQA or conformity determination is actually made. This increases the importance of properly documenting conformity analyses and findings.

Private citizens have the power to enforce the mandates of NEPA and CEQA through the courts. Specific citizen suit provisions of the CAA and NEPA/CEQA are summarized and referenced in Appendix G, Citizen Suit Provisions Under the CAA and NEPA/CEQA. Increasingly, citizens groups throughout the United States are using the courts to halt the projects that they oppose by obtaining declaratory or injunctive relief or both. Clearly, legal battles are costly and time consuming to all of the involved parties and may ultimately lead to the rejection of a proposed project. Nevertheless, these battles are a vital part of the democratic process afforded to U.S. citizens.

Unlike NEPA, CEQA provides a statute of limitations period for actions or proceedings with the intent to "attack, review, set aside, void or annul" certain acts or decisions of a public agency on the grounds of noncompliance (PRC §21167). If a citizens group wishes to file a lawsuit against a CEQA project exemption, it has 35 days from the time of the notice of exemption filing date to do so. If no notice of project exemption is filed, the group has 180 days from the date of project approval to commence any legal action or proceeding (PRC §21167). Once a notice of determination has been filed, groups have a 30-day time period to file action alleging that a public agency has improperly determined whether a project may have a significant effect on the environment. This time period is extended to 180 days if no notice of determination was filed. Citizens or citizen groups can file a lawsuit after a final EIS has been approved. However, the

treatment of evidence that was not provided during the CEQA administrative proceedings (i.e., during the draft comment period) is often limited by the courts (Duggan, et al., 1988).

In California, citizen groups can seek judicial review in accordance with the provisions of the Code of Civil Procedure. The Public Resources Code Sections 21168 (i.e., Review of Determination) and 21168.5 (i.e., Prejudicial Abuse of Discretion Test) govern the standard of review applied by courts in CEQA actions; Section 21168 incorporates the standards of Section 1094.5 of the Code of Civil Procedure (Remy et al., 1993). In general, the courts have applied liberal standards of review for establishing standing in CEQA cases (Remy et al., 1993). However, the courts are often more stringent in their review of evidence. In fact, courts frequently limit their review of evidence to information gathered or presented during draft comment periods only (Duggan et al., 1988). Generally, a court's examination focuses on determining whether or not: 1) the public has been defrauded; 2) decisionmakers have been deprived of any critical information; or 3) any adverse environmental impacts have been ignored, understated, or underestimated (Duggan, et al., 1988).

The mobile source provisions of the CAA (in Titles I and II) contain numerous provisions for public hearing and formal comment by anyone interested in the air quality issue at hand. Practically every formal USEPA action, including the preparation of TCM guidance documents (42 U.S.C.A. §7408); action on SIPs (42 U.S.C.A. §7410); and the promulgation of regulations, motor vehicle emission standards, and waivers of such standards (42 U.S.C.A. §7521), require public notice and public participation (as required by the CAA or the Federal Administrative Procedures Act). Title III of the CAA contains citizen suit authority and judicial review procedures, which allow citizens to sue any person or government agency for noncompliance with non-discretionary measures of the Act, including violation of an emission standard and failure of the Administrator to perform an act or duty (42 U.S.C.A. §7604).

Review of Relevant NEPA/CEQA and Conformity Court Cases and Litigation

States, regions, and local agencies must use emission modeling in their plans to demonstrate conformity. The failure to meet the emission inventory estimates that are required to attain federal air quality goals in these plans can result in litigation. The case of *Citizens for a Better Environment v. Deukmejian* indicates that citizens and groups have clear standing to challenge a "state's failure to enforce an emission standard or limitation set forth in a SIP." This case confirmed the strong reliance on emission modeling to quantify comprehensive emission estimates. Failure to demonstrate the emission levels required by attainment years can be used in a legal suit to hold an agency accountable and liable for nonattainment.

Accurate emission modeling, whether quantifying reductions from TCMs or other transportation programs, will be important in not only fulfilling conformity requirements but in carrying out the plan. If the emission's levels that plans and areas commit to reaching are not met, citizens may undertake legal action to insure that the levels are obtained. Given the existing emphasis on modeling by regional agencies, the new conformity requirements are likely to increase the importance of modeled demonstrations. However, as discussed in the uncertainty section of the

report, determining whether emission reductions have been achieved is neither a simple nor a straightforward process.

A number of cases appear relevant to potential litigation that could ensue under NEPA/CEQA. The cases summarized below are thought to be relevant to possible conformity litigation in the future. Each case is outlined in more detail in Appendix H, Summary of CAA Cases that May be Relevant to Conformity:

- *South Coast Air Quality Management District v. EPA* questioned the final actions in the conformity guidelines and whether or not the USEPA went beyond its jurisdiction and authority in writing the guidelines. The objections raised in the case include: 1) the stipulation that previous conformity determinations shall lapse due to a failure to submit a SIP, incomplete SIP submittal, or disapproval of control strategy implementation plan revisions; 2) separate conformity determinations cannot be made in portions of a nonattainment area where there are separate political subdivisions responsible for air quality planning; 3) a state's conformity procedures must be adopted into the SIP; and 4) TCMs cannot be found to be in conformity nor be implemented in the absence of a currently conforming plan and TIP.
- A second case, *Conservation Law Foundation v. EPA*, questions some of the plans that have already been deemed by the USEPA to have adequately demonstrated conformity. In this second case, the plaintiffs assert that, in some instances, the approved plans will not actually obtain the air quality goals stated in the plan. The plaintiffs argue the following points, which may still apply to the final Rule: 1) conformity should apply to attainment areas; 2) "indirect emissions" that are foreseeable and that would not occur without the project should not be exempted; 3) sources that have previously undergone NEPA review using older emissions models should not be exempted; 4) emissions reductions from mitigation measures not committed to by a funding source should not be addressed in conformity analyses; 5) the Rule fails to require that an activity must conform to an applicable implementation plan during the foreseeable activity's life (i.e., emissions budgets should be analyzed over a transportation project's lifetime); 6) the Rule allows an activity to be deemed as conforming even when it may cause an increase in emissions in a nonattainment area; 7) the Rule does not consider the effect of projects on surrounding nonattainment, maintenance, and attainment areas; and 8) the Rule prohibits states from revising implementation plans so that conformity requirements apply with equal stringency to federal and non-federal entities.
- The series of *Citizens for a Better Environment* cases are associated with the Bay Area Air Quality Management Plan and whether 'reasonable further progress' (RFP) was made (i.e., whether the emission reduction estimates in the SIP were actually achieved) by the district in the mobile source sector. In *Citizens for a Better Environment v. Deukmejian*, the court found: 1) when a SIP commits to adopting contingency measures if RFP was not achieved, the contingency measures must be adopted if the RFP is not achieved; 2) the terms 'targeted emissions reduction' and 'emissions level' were both correct; 3) once a plan has been accepted, the emission levels expressed must be met because they are legally enforceable; and 4) overdue SIP commitments must be satisfied without delay and without re-balancing the costs and benefits already balanced.

- In *Conservation Law Foundation (CLF) v. Federal Highway Administration (FHWA)* (24 F3d 1465), the plaintiffs questioned the positive conformity determination for Jamestown Connector proposal in Rhode Island. Originally, the project was proposed as Interstate Highway 895, in 1969. The project has undergone several changes and two different environmental impact assessment procedures. As a result of two draft EISs and two final EISs, and even further alternative modifications, a proposal was selected in May, 1988. CLF was granted a temporary restraining order on May 21, 1993, eight days after construction had begun. The court then lifted the order on June 8, 1993 when the court found no legal reason to halt construction. In the appeals case, CLF contested that the TIP and Transportation Plan, with the altered Jamestown project design, did not conform to the SIP, according to the 1990 CAA Amendments. The project itself was found to positively conform in the Final Supplementary EIS for the project in 1988. The FHWA argued that under the citizen suit provision of the Clean Air Act, the district court had no jurisdiction in considering the plaintiff's claims since the claims dealt with emission standards (as defined in CAA). The appeals court disagreed, based on legal history. CLF contested that 42 U.S.C. Section 7506 (c)(3) should be interpreted such that no project will receive federal funding unless it came from a conforming Plan and TIP, and this applied to all projects regardless of their conformity determination. In the end, the court found that although the TIP and Plan may be out of conformity with the SIP (according to the 1990 CAA Amendments), the Jamestown Connector project was found to be positively conforming prior to 1990 CAA Amendments and that there was no reason to stop the project or its federal funding.
- In *Citizens for a Better Environment v. Wilson* (775 F.Supp. 1291 -- August 19, 1991), the plaintiff questioned whether the TCMs implemented by the MTC (i.e., contingency measures required by the court in *Citizens for a Better Environment v. Deukmejian*) did in fact achieve sufficient reduction to bring a RFP as defined in the 1982 Plan. The court found that: 1) RFP denotes annual incremental reductions of emissions necessary to achieve air quality standards;⁴⁰ 2) an RFP designation by the use of CO emissions surrogates (VMT and vehicle trips (VT)) cannot be done because Congress defined RFP in terms of emissions; 3) the measurement of RFP requires remaining true to the assumptions and methodology established in the original plan to maintain "internal consistency;"⁴¹ 4) states have an unwavering obligation to carry out federally mandated SIPs and where a SIP is violated, liability attaches, regardless of the reasons for the violation; and 5) when emission levels are not achieved, the MTC has the burden to "either identify additional feasible TCMs (including authorized or funded "stalled" 2131 TCMs) or demonstrate why such additional TCMs are infeasible [sic]."
- Finally, *Daubert v. Merrell Dow Pharmaceuticals* appears to establish new requirements for experts and scientific evidence. In 1975, Congress enacted new rules of evidence for use in Federal courts (Black, 1993). The section of the Federal Rules of Evidence on which the Supreme Court focused was Rule 702: "...if scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." Under the rules of evidence, a trial judge should consider if scientific testimony or evidence is relevant and reliable (implied by Rule 702). In addition, federal judges must evaluate evidence to assure that it is pertinent

to the case...“scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes.” Judges must insure that testimony uses reasoning or methodology that is scientifically valid and can be applied properly “to the facts in issue.” The Court suggested four ways in which scientific validity may be determined. First, the scientific evidence should be tested. Second, the theories in the evidence should be subjected to publication and peer review. Third the courts should note the potential rate of error involved in each study submitted as evidence. Finally, while widespread acceptance is good, evidence with little acceptance can be “viewed with skepticism.” Evidence associated with future legal claims brought about by disputes under the Rule may be required to meet the tests for scientific evidence established by the Supreme Court. However, given the uncertainty associated with modeled conformity demonstrations, and the case-by-case application of legal rules to the facts of individual cases, it is unclear what the outcome individual legal challenges to modeled conformity demonstrations might be.

Implications if Modeling does not Result in Accurate Emission Estimates

Current court cases may determine to what extent emission modeling estimates will be legally binding. There are two potential causes of inaccurate emission modeling. The first possible cause is that the model internal workings do not accurately predict emission relationships and emission levels in future years (i.e. the model inputs, as such, are accurate but predicted emission levels were inaccurate). The second possible cause is that the inputs in the model were inaccurate and the predicted levels were not attained. Either way, the emission inventory levels that were committed to in the plan are not met. Thus far, the Courts have ruled that it is necessary to meet the emission levels committed to in the plans (*Citizens for a Better Environment v. Deukmejian*). The Courts solution to meeting these shortfalls have been to require adoption of feasible TCMs and other control measures.

The *Conservation Law Foundation v. Environmental Protection Agency* case may initiate many issues of questioning a plans modeling estimates. In some of the statements from their petition, the plaintiffs question whether some plans are underestimating the emission levels so that the area's plan will conform. They also question whether cumulative impacts are taken into account (more modeling inputs). The Court may have to look at the inputs into the models to decide if they are accurate or if a possible conformity determination was incorrect. The scientific evidence that is used will possibly be evaluated using the four criteria set by the Supreme Court in *Daubert v. Merrell Dow*. How these criterion are applied to modeling evidence remains to be seen.

CONCLUSIONS

The 1993 Conformity Rule is one of the most complex USEPA rules in existence, rivaling New Source Review requirements in terms of defining applicability and determining which specific requirements apply and under what specific conditions. However, the basic principles of the Rule are straightforward. The specific requirements are clear and concise. The transportation plan and transportation improvement programs must employ the same assumptions used to

develop the state implementation plan for air quality. Conformity is designed to insure that transportation plans, programs, and projects will contribute, as planned, to the attainment effort. Any project that is funded or approved by a federal agency must be included in the conforming plan and must not contribute to the exceedance of local ambient air quality standards. Although a conformity determination is not specifically required, the requirements for non-federal projects still require that a *de facto* conformity finding be made. Agencies must make a positive finding for every project subject to conformity.

Almost every transportation project of concern to the public (either from the public perspective of increasing mobility or from the public perspective of potentially adversely impacting the environment) is subject to conformity. The only exemptions are non-substantive projects. Making conformity determinations for transportation plans, programs and projects will be resource intensive. Conformity involves the commitment of significant resources to the analytical processes, as each project must be demonstrated not to cause or contribute to exceedances of the NAAQS before it may be approved.

The actual modeling provisions contained in the transportation Rule are clear and concise. The models to be used are directly stipulated in referenced guidance (and will be supplemented/modified through the interagency consultation process). The Rule requires that model outputs be strictly interpreted. When emission predictions exceed emission budgets, the plan, program, or project is non-conforming. The Rule has undergone a public hearing process and has been appropriately adopted into law. Thus, the specific conformity requirements must be followed. Failure to comply with the analytical requirements in the Rule is likely to result in litigation.

The combinations of emission rate and dispersion models that are to be employed in the conformity process are well documented. These models have been validated comparatively in the field to ascertain how well they function for the purposes for which they were designed. However, emission rate models were designed to provide emission rates for use in highly aggregated regional analyses. Emission rate and dispersion model combinations were designed to predict potential significant violations of the ambient air quality standards for CO (and even then the models do not perform particularly well, they are simply the best that are available).

The Rule specifically requires the use of the existing models for purposes for which they were never designed nor validated for. Under some provisions, regional models are to be used to determine whether projects will result in emission increases. Under other provisions, the regional models will simply be used to determine whether a project pushes the regional emission estimates 'over the top' of the established 'motor vehicle emission budgets.' In the case of project emission quantification, the modeled results are unlikely to predict whether the projects will result in emission increases or decreases. In the case of emission budget assessment, the emissions estimates for the region are highly uncertain from the start, and changes associated with single projects are likely to be well within the model noise. On the other hand, if a single project threatens to put the entire transportation system in danger of exceeding the emission budget according to modeling estimates, the actual emissions from the system may already be well over the budget limitation.

The Rule changes the concept of 'emission budgets' from one of a planning tool to one of an enforcement tool. This change in focus must be questioned from a scientific perspective. The intent of the Rule was to ensure that rational comprehensive transportation and air quality planning would be undertaken.

The stated goals of the conformity requirements of the Clean Air Act are to: 1) ensure that transportation programs and projects have been appropriately accounted for in the development of the air quality management plan (i.e. that the plan will help to eliminate or reduce the severity and number of violations of the NAAQS); 2) ensure that transportation activities will not cause or contribute to new violations of standards in any area; and 3) ensure that transportation projects will not delay attainment of any standard or required interim emissions reduction or other milestone in any area (42 U.S.C.A. §7506(c)(1)(B)). The use of state-of-the-practice regional modeling and the linkage of assumptions between the transportation and air quality plans will insure that (1) above is met. The air quality impact models available for project analysis do a reasonable job of identifying projects that are likely to result in the creation of CO hot spots, satisfying (2) above. However, the available models for use in conformity determinations are incapable of insuring that specified emission reductions (i.e. 3 above) are met at the project, the corridor, and arguably even at the regional level. The project impact assessment models were never designed to predict emissions at the project level; not at the time the CAA was written, not at the time the Rule was written, and not even for the next 5 to 10 years. The model combinations were designed to predict maximum concentrations, and that is the only basis upon which they have been evaluated for regulatory use. Although the integration of project and regional modeling is a high priority at research institutions, not only are the cause-effect relationships still unclear, but there is a significant shortfall of data at this time to answer the causal questions that have been raised through research. "We're being forced to misapply models and confusing precision with accuracy. We're being overwhelmed with process rather than focusing on clean air" (Ruggieri, 1994).

Although the Rule does not require that conformity determinations be made concurrently with determinations under NEPA and CEQA, there are five basic arguments supporting the development of a concurrent process: 1) the legislative history of conformity indicates that the intent of project conformity is that findings be made during the NEPA/CEQA process; 2) the general requirements of NEPA and CEQA require coordination between environmental processes; 3) the level of technical detail and documentation required for NEPA/CEQA analyses and conformity analyses are so similar that they can be used for both determinations anyway; 4) unless conformity is taken into account during EIR/EIS analyses, the alternatives analysis and mitigation requirements of NEPA/CEQA may result in negative conformity determinations after EIS/EIR approval; and 5) unless coordinated, the public comment periods for NEPA/CEQA would run consecutively rather than concurrently, unreasonably delaying project implementation.

In the transportation sector, approval or disapproval of a project will always make someone unhappy. The extensive citizen suit provisions of the CAA and NEPA/CEQA open the door for litigation when a party is dissatisfied with a conformity determination. The threat of litigation is

a powerful incentive for agencies to employ state-of-the-practice air quality impact models and to thoroughly document conformity determinations.

Because the scientific validity of model outputs can be so easily questioned, a number of questions related to future court actions arise: 1) will the potential litigants realize that conflict over minor differences in regional modeling results is frivolous; 2) will potential litigants that are already apprised of modeling uncertainty choose to test the court system anyway, in an effort to force project implementation or to stop project implementation; 3) will the duly appointed representatives of the litigants and the court have the technical background to understand the modeling issues raised; 4) what role will expert witnesses play in the litigation; and 5) will the final legal decision and policy reflect science or political will?

The consultation process provides an opportunity for the agencies involved in conformity determinations to establish the definition of regionally significant project, delineating which projects conformity applies to, and developing a protocol for determining when a proposed project is determined to have substantially changed, requiring a new conformity analysis (40 CFR §51.402(c)(1)(ii)). Further, because the consultation procedures for conformity must be codified in the SIP, public input on these procedures will be incorporated into the final protocol and the integrity of the public process is maintained.

Uncertainty associated with emission modeling methodologies can and should be brought into play in developing the interagency guidelines for cooperation. In defining what projects are regionally significant and what modifications to projects are significant enough to warrant the additional resource expenses associated with a new conformity analysis, the consultation process should include an analysis of diminishing modeling returns. When the uncertainty associated with applying an emission model is so large that modeled emission changes are as likely to be model noise as they are to be reliable predictions of change, remodeling serves little useful purpose. Hence, small projects or modifications that do not yield large changes in vehicle activity or vehicle flows could be screened out of the modeling process simply because the results of the model do not provide useful information for policy purposes.

Transportation agencies need to be involved in SIP development. National surveys show state DOTs are not involved or are denied involvement in SIP development (Shrouds, 1994). For example, the New York Metropolitan Transportation Council did not participate in development of the emission budget (Ruggieri, 1994). In California, the transportation planning community has been more active than in other states. The Rule now affords an even greater opportunity for transportation and air quality planning agencies to work together. The conformity consultation procedures should help to insure this. However, the consultation procedures will only function when the parties that are sitting at the table understand the nature of the planning problems that the other agencies face. Similarly, the capabilities and limitations of the analytical tools that have been developed in each discipline must be better understood and communicated if rational policy decisions are to be made.

Models are tools that can provide information that is useful to a decisionmaker in weighing alternatives. Models do not necessarily have to provide highly accurate outputs to be useful. Nor

do models need to provide highly accurate outputs to be useful in comparing the likely effectiveness of alternative policies. However, the use of models does present a serious problem when they are relied upon without question. Models are designed for specific purposes, and they are validated under specific conditions. If the causal relationships represented in the models are incorrect, even validated models will not be reliable when important variables change over time or from location to location. Over-reliance on modeled outputs can only be avoided by continuing model development and validation efforts and educating modelers and policymakers alike.

RECOMMENDATIONS

- The structure of the Rule and the existing requirements of NEPA and CEQA are such that conformity decisions should be made within the NEPA/CEQA process whenever feasible. Because the EIR must contain an executive summary which outlines the potential significant effects, areas of controversy and issues yet to be resolved (PRC §21061, Cal. Code Regs., tit. 14, §15123), the finding that a project is in conformity should be presented in this section of the EIR.
- Because the NEPA/CEQA requirements are fairly extensive, it is important that individuals working with the Rule (40 CFR Parts 51 and 93) are familiar with the NEPA/CEQA process requirements. The preparation of a supplemental training course would be beneficial to assist in implementing the conformity requirements in compliance with the NEPA and CEQA regulations.
- Where a nonattainment area crosses MPO boundaries, MPOs should work collectively in making their conformity determinations.
- Given the great uncertainty associated with regional motor vehicle emission budgets, and the fact that the Rule does not provide a margin of safety in interpreting model outputs, the use of subarea budgets is not recommended.
- The uncertainty associated with regional modeling methods precludes their effective use for determining the magnitude of emissions associated with single projects. Project level emission magnitude assessment requirements (40 CFR §51.450(d) and (e)), applicable during phase II of the interim period and during the transitional period, are unrealistic. The consultation procedures should be used to develop an alternative to the use of regional models to meet these requirements.
- When emission budget tests are undertaken and the modeled emissions from a single project will cause an exceedance of the regional emission budget, the uncertainty in the analytical results is such that emissions from the transportation system may have already violated the budget (or could still be significantly below the budget). Regardless of whether the Rule's provisions stop a project due to a perceived budget violation, the fact that the modeled emissions from the transportation system are so close to the SIP emission budget already is a clear indicator that the iterative science and modeling aspects of the SIP revision process should begin again immediately. When the planned emission reductions from the transportation system are in jeopardy, a remodeling effort is necessary to determine: 1) if the

current emission inventory estimates are reliable; 2) if the modeled emission reduction estimates based upon air quality models calibrated with the current emission inventory data are reliable; and 3) whether new emissions control strategies in the transportation sector (technological or demand management) or stationary source sector are likely to be necessary to reach attainment. Regional emission estimates are much better suited as a tool for identifying when the efficacy of the air quality planning process is jeopardized than as a project level enforcement tool.

- The interagency process should be used to deal rationally with the uncertainty issues in the analytical methods. Conformity determinations do not require an assessment of uncertainty, nor do they allow for conformity determinations to be presented in terms of a range of expected emissions effects. Emission analysis must present a finite estimate. The public participation process associated with the SIP approval process may be sufficient to make certain modeling methodology changes specifically designed to address uncertainty. However, the Rule may need to undergo a new rulemaking process to incorporate necessary changes to the statutory requirements.
- Whenever a new emission model is released, the regional attainment modeling process should begin anew and a new SIP should be submitted. In this manner, emission budgets can be recalculated and reallocated. Failure to do so will likely result in erroneous conformity determinations from a planning perspective (i.e. the older plan could result in significantly more or fewer project approvals than the new plan). Similarly, when the transportation demand model undergoes significant revision, a new SIP should be developed.
- A recent court decision precluded the use of vehicle miles of travel and number of trips as CO emission surrogates for determining when reasonable further progress was made. This decision was based upon the court's opinion that SIPs require that emissions be reduced; not trips and VMT. However, the cooperative interagency working group should seriously consider the use of such surrogates in developing a screening protocol for project level conformity determinations as an alternative to the regional modeling approach. Given the uncertainty associated with the emission effects of average speed and hot starts, the use of such surrogates will simplify conformity determinations and will likely result in better decisions. For example, projects that reduce the number of cold starts and VMT, and that do not worsen traffic flow (as determined by acceleration/deceleration activity, not changes in average speed), and that maintains speeds below 60 mph could automatically be deemed conforming.
- A computerized databook (initially proposed by Davies, 1994) should be maintained for each project. The databook would contain in an electronic format: the public domain emission impact model, model input files that describe the project and are used to assess the impacts, detailed descriptions of modeling technique and assumptions, and datafiles describing the design elements of the project related to capacity and operation that will determine the traffic volumes and traffic conditions under those volumes. The databook would contain a detailed description of all vehicle activity and emission rate assumptions as well as the vehicle activity datafiles that are employed as analyses. The proposed project databook could be routinely updated for each to describe all data and analyses over the lifetime of the project.

- Conformity determinations should be made available to interested parties in a common electronic media (i.e. computer disk format). A copy of the computerized databook with staff report of model results would suffice for adequate public review of the conformity determination.
- Agencies implementing the interagency conformity agreement should consider allowing the use of analytical safety factors for project activity data (i.e. allowing the initial project assessment to use significantly higher estimates for VMT, trips, or environmental assumptions) for making an initial conformity determination. Then, if the project changes between the initial determination and the final project proposal, as long as the initial activity parameters and other assumptions are not exceeded, the design concept and scope will not have changed from the perspective of a conformity analysis. Any safety factors associated with vehicle activity estimates could be documented in the databook system, addressing any concerns regarding tracking of activity assumptions in conformity determinations.
- Every effort should be made to apprise all parties of the serious issues that may be forthcoming in the implementation of the Rule. Given the fact that legal action is likely to result on future conformity actions, agency staff should continue research into modeling issues. Involving potential litigants early on in the consultation and review process will likely reduce the potential for litigation.

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ENDNOTES

¹. Special provisions are made in the Rule for bus terminals and are described later.

². In preparing the draft document, ITS-Davis staff worked outside of the conformity guideline development process being undertaken by state and local agencies, and worked in isolation from the key players at the conformity table. The peer review of the draft document by Caltrans and other agencies was used by ITS-Davis staff to revise the draft document.

³. Section 51.396 requires states to submit a SIP revision that outlines the criteria and provisions to be used by USDOT, MPOs and other state and local agencies to assess conformity in such a manner as meets all specified provisions of the Rule (much of the conformity rule language must be adopted verbatim).

⁴. Maintenance areas were, at one time, nonattainment areas and have been reclassified as attainment areas by the USEPA subsequent to a compliance determination with attainment standards under the CAA requirements and subsequent to the submission and approval of a maintenance plan.

⁵. The application of the Rule to attainment areas is a hotly debated topic. The repeated direct references in Section 176(c)(1)(A) that conforming transportation projects may not cause or create attainment problems in "all areas" may or may not be applicable to attainment areas because the language of Section 176(c)(1) focuses on conformance with attainment plans which are only required in nonattainment and maintenance areas. Yet, statements of Congressional intent and legal arguments submitted to the docket by public interest groups during the public comment period appear salient. The USEPA has indicated that conformity may become applicable to attainment areas at a later date. If the agency finds that conformity demonstrations are required in attainment areas, a separate rulemaking will be undertaken (Sargent, 1994). Local agencies should be forewarned that conformity requirements may become applicable to attainment areas in the future and that steps can be taken now to improve the quality and availability of data that will be useful in such future demonstrations.

⁶. The Rule specifically defines "transit projects" to exclude those aspects that are entirely within the jurisdiction of the local transit agency, "such as changes in routes, schedules or fares" (40 CFR §51.392). It is entirely conceivable that route changes, discontinuation of service on specific routes, or changes in fare schedules could result in significant mode shifts, thereby exacerbating an existing violation or causing a new violation. Although this definition is inconsistent with the stated purpose of the Rule, the specific language of the Rule stands.

⁷. Although the public comments submitted by MPOs and other local agencies overwhelmingly urged the USEPA to apply conformity only to projects that directly received federal funding, none of these comments contained any legal justification for this position. Conversely, the comments submitted by the Environmental Defense Fund contained legal justification as to why conformity should apply to all projects funded or approved by recipients of federal funds, regardless of whether the federal funds are directly attributable to the project.

⁸. The lack of a specific definition in the Rule may increase the potential for lawsuits over significance. Agencies would be advised to involve potential litigants in the process of defining regional significance.

⁹. Design concept means the type of facility identified by the project (e.g. freeway, expressway, arterial highway, etc.) (40 CFR §51.392). Design scope means the design aspects which affect the proposed facility's impact on emissions, usually as they relate to carrying capacity and control (40 CFR §51.392). The definition of design scope provides as examples: number of lanes or tracks to be constructed or added, length of the project, signalization, access control including number and location of interchanges, preferential treatment of vehicle modes, etc. In addition, engineering design aspects that have the potential to affect design capacity (such as lane width, lateral clearance, weaving section design, etc.) should be included in the definition of design scope. The Highway Capacity Manual (Transportation Research Board, 1985) contains design elements that should be considered in determining whether the design scope of a project has changed. The determination of whether there has been a significant change will be based upon the protocol developed for the consultation process (40 CFR §51.402).

¹⁰. USEPA staff indicated that SIPs must be followed when submitted (Pallarino, 1994). Local agencies shouldn't wait for USEPA approval to start implementing the submitted SIP. Three Federal Implementation Plans (FIPs) will soon be proposed by EPA Region IX. These FIPs will 'go final' one year after they are proposed, and FIP emission budgets take effect once the FIP is final. The local district must meet both the SIP and the FIP budgets once the FIP has taken effect (Brucker, 1994).

¹¹. Public comment submitted for these rules can be found in FHWA docket numbers 93-4 and 93-5 in Washington, DC.

¹². The definition of a “reasonable relationship” is not defined in the Rule and must be developed in the consultation process. The potential for litigation exists in this language, and agencies are encouraged to invite public comment on this issue. The Metropolitan Transportation Committee (MTC) lawsuit findings may be appropriate to this issue.

¹³. Horizon years are years for which the transportation plan describes the envisioned transportation system (40 CFR §51.392 and §51.404). Horizon years may be no more than 10 years apart. The first horizon year may be no more than 10 years from the base year used to validate the transportation demand planning model. The attainment year is a horizon year. The last horizon year must be the last year of the transportation plan's forecast period (i.e. 25 years from transportation plan adoption).

While the preamble to the Rule states that the motor vehicle emission budget “establishes a cap on emissions which cannot be exceeded by motor vehicles” (58 FR 62194), such an assertion is unrealistic. The language of the CAA (§176(c)) provides a better indirect description of emissions budgets in terms of the SIP, where “emissions expected from implementation of...plans and programs are consistent with estimates of emissions from motor vehicles and necessary emissions reductions contained in the applicable implementation plan”; where the operable terms are estimated and consistent. The basic problem with conceptualizing motor vehicle emissions estimates in terms of a cap is that motor vehicle emissions estimates are continually changing over time. Regulatory agencies have been revising the emissions budget associated with motor vehicles on an ongoing basis for more than thirty years, as the mechanisms associated with production of emissions become better understood. One of the major reasons that the SIP planning process is iterative is so that the starting point for emissions reductions can be re-estimated each time on the basis of technical knowledge gathered since the preparation and implementation of the last plan. In determining when emissions are consistent with a SIP, it is easy to forget that the original regional emission inventory target developed in the SIP process is based upon the cause-effect relationships as understood at the time the airshed modeling was undertaken. Thus, if the emissions inventory in 1990 was significantly underestimated for motor vehicles, the final attainment budget for motor vehicles is also likely to be underestimated. When model changes result in significant increases in motor vehicle emissions estimates, it would be prudent to undertake the SIP development modeling process again to re-establish and allocate emissions budgets across source categories.

¹⁴. While the stated USEPA restrictions against using lower future year vehicle activity data may seem draconian, the position is understandable. Given the uncertainty associated with transportation demand models and the stringent criteria that must be met to demonstrate that “enforceable” conditions are in place (i.e. in accordance with the emission trading policy such that unplanned emission increases are precluded), this condition will be nearly impossible to meet. There are very few major arterials and freeways that have experienced significant decreases in vehicle activity over the past 15 years. Further, the attainment plan is revised every few years, providing the opportunity for the district to re-establish current year baseline inventories based upon the vehicle activity data at that time. If vehicle activity did decline, then the emission reductions that are necessary to attain the emission standards are lower than previously thought; hence, the District still received credit toward attainment should the reduction in activity occur in the interim. However, given the stringent requirements for implementing state of the art travel demand models, failure to rely upon those models to predict increases and decreases in vehicle activity (as reflected in ratios used to project Highway Performance Monitoring System (HPMS) VMT estimates to future years) is counterintuitive. If activity reductions (which may be associated with changes in land use or mode choice) cannot be incorporated into projections, the requirements of 40 CFR §51.452(b)(1) are moot.

¹⁵. The point at which the 14 day clock starts is not established in the Rule. The state and local agencies must develop this criteria and include it in the consultation protocol that must be adopted into the SIP (40 CFR §51.402(d)). Given that the air agency has the authority to escalate conflicts to the governor's office, the authors recommend that the consultation protocol require the 14 day clock to start when the conformity determination is received by both the state and local air quality agency.

¹⁶. The Governor may delegate his or her role in this process, but not to the head or staff of the State or local air agency, State department of transportation, State transportation commission or board, or an MPO.

¹⁷. However, in areas where highway construction emissions are specifically accounted for in the attainment plan, construction emissions cannot be ignored (Brucker, 1994). When emissions from highway construction are specifically targeted in the plan, a highway construction emission budget has been established. If so, the integrity of the plan (i.e. the estimates of construction emissions) can be significantly affected by errors in construction activity,

and conformity determinations must be made for these activities as well. Models inputs to project level emissions analyses are not sufficiently certain to ascertain if an emission budget is being violated. However, if the USEPA chooses to apply the Rule to construction activity, and if regions are stipulating highway construction emission budgets with any reasonable degree of accuracy, screening criteria should be developed for construction activities so that emissions analyses will only be prepared for those activities that have a reasonable chance of causing or contributing to a violation of a standard.

¹⁸. Alternative provisions for projects not required to be specifically identified in the plan and TIP are provided in 40 CFR §51.422(b)(2) and (c)(2).

¹⁹. The final Rule requires the quantitative modeling of PM₁₀ hot spots when the project is located at sites where previous violations have been noted (40 CFR §51.454(d)). However, at this time, there is no PM₁₀ model for mobile sources that has been approved, and quantitative analyses of hot spots need not be performed (58 FR 62213; 40 CFR §51.454(d)). There are a number of ongoing PM₁₀ studies that must be completed before the USEPA will be able to develop a credible model for PM₁₀ impact analysis. The FHWA and Washington State DOT currently have PM₁₀ studies in progress. In addition, a major PM₁₀ project funded by the National Cooperative Highway Research Program (NCHRP) has been approved and will be released in the request for proposals stage in 1994. However, when a new PM₁₀ model is published, quantitative PM₁₀ analyses will be required. The USEPA will publish the forthcoming PM₁₀ guidelines in the Federal Register. In evaluating these guidelines, a distinction should be drawn between the ability of a model to predict project-level emissions and the ability of a model to reasonably predict violations of air quality standards. If a new model fails to accurately predict PM₁₀ air quality violations, the emissions impact modeling (hot spot) provisions for PM₁₀ under conformity fail to serve a useful purpose. If a new model fails to accurately predict PM₁₀ emissions, the emission budget comparison provisions for PM₁₀ under conformity fail to serve a useful purpose. It is in the best interests of all agencies responsible for the implementation of conformity modeling to keep abreast of PM₁₀ modeling improvements, forthcoming USEPA guidance for PM₁₀ models, and USEPA statements regarding PM₁₀ model applicability (i.e. ability to predict emissions and not just exceedances).

²⁰. Appendix W of 40 CFR Part 51 is the USEPA publication entitled "Guidelines on Air Quality Models" (Revised). This publication (EPA-450/2-78-027R) is dated July 1986 (not 1988 as indicated in 40 CFR §51.454) and was supplemented in 1987 and 1993. This publication is available through regional offices of the USEPA.

²¹. Although the Rule does not specifically define the term "projects which are not from a conforming plan or TIP," the notice of proposed rulemaking did define such projects as: "...those projects not identified in a conforming TIP, projects whose design concept and scope are significantly different than those described in the TIP or were inadequate at the time of the TIP conformity determination, and in areas with specific plans, those regionally specific projects which are not specifically included in the plan" (58 FR 3778). Thus, these projects include those regionally significant projects that lie outside of the MPO planning boundaries and are not included in the plan.

²². The cited provision is contained in the provisions for transition from the interim period to the control strategy period (40 CFR §51.448). The term "currently conforming" presumably refers to a conformity determination that has been made under the provisions of Phase II of the Interim Period, prior to the submittal of a revised SIP to the USEPA. The submission of a SIP triggers the requirement for a plan conformity demonstration within 12 months of the SIP submittal deadline. Hence, projects may proceed after the plan is submitted and before the plan conformity analyses are completed, providing the requirements of 40 §CFR 51.448(e) are met.

²³. If the region does not have a transportation plan that meets the content requirements of the Rule, the emissions comparison is based upon the project and additional projects "expected" to be implemented (see 40 CFR §51.432(c)).

²⁴. The specific language is "contributes to emission reductions or does not increase emissions".

²⁵. The exemption for safety projects is poorly written in the Rule, indicating that safety projects must reduce the number of accidents. During the public workshops on conformity (USEPA, 1994), staff from the USEPA and USDOT both concurred that safety projects do not only have to reduce the number of accidents, but could be designed to reduce the severity of accidents, etc. Although the regulatory language is flawed, USEPA staff indicated that local districts will have a good deal of flexibility in interpreting the term "accidents."

²⁶. It is interesting to note that this exemption is the only significant construction-related exemption in the list (truck climbing lanes in non-urban areas and shoulder widening will probably not yield significant travel pattern changes). Yet, it is entirely conceivable that the construction of poorly planned bicycle and pedestrian facilities

could result in significant increases in motor vehicle congestion, thereby exacerbating an existing violation or causing a new violation. Although this exemption is inconsistent with the stated purpose of the Rule, the specific language of the Rule stands, and these facilities are exempt from conformity determinations.

^{27.} Signal timing involving more than one traffic signal is subject to regional conformity analysis and is also subject to project level conformity analysis. Signal timing projects that result in lower total delay should be amenable to an automatic conformity determination. The USEPA is concerned that signal timing may not be beneficial for air quality because: 1) NOx emissions are likely to increase, 2) the mobility of pedestrians and cyclists may be impaired, and 3) improved traffic flow may lead to increased demand for use of the facility (Brucker, 1994). Yet, the existing travel demand and vehicle emissions models are incapable of assessing these hypotheses.

^{28.} In addition, it should be noted that if NEPA provides a categorical exclusion for a particular transportation project, a conformity analysis may still be required, unless the project is specifically exempt under the Rule as well (USEPA, 1994).

^{29.} Unless the project is in the transportation plan and is simply adopted in an earlier TIP than originally planned, subject to a few conditions in 40 CFR §51.432(b)(1).

^{30.} See *State of California v. Watt*.

^{31.} Despite the need for well documented analyses, many courts have found EISs inadequate because of poor writing. NEPA documents must be clearly written and free of technical jargon (40 CFR §1502.8). The EIS must be written in language that is understandable to non-technical minds and yet contain enough scientific reasoning to alert specialists to the particular problems within the field of their expertise (42 U.S.C.A., Section 4332, Note 108). See *Environmental Defense Fund, Inc. v. Corps. of Engineers of the U.S. Army*, 1972 (470 F2d 289). Balancing the need for sufficient technical documentation and non-technical clarity will be difficult.

^{32.} *Town of Mathews v. Department of Transportation*.

^{33.} See also *Citizens for Reasonable Growth v. City of Mt. Shasta*.

^{34.} See *Zabel v. Tabb*.

^{35.} Unless the project is in the transportation plan and was simply adopted in an earlier TIP than originally planned, subject to certain conditions (40 CFR §51.432(b)(1)).

^{36.} *Citizens for a Better Environment v. Deukmejian* (731 F.Supp. 1448) -- March 5, 1990; *Citizens for a Better Environment v. Deukmejian* (746 F.Supp. 976) -- August 28, 1990; *Citizens for a Better Environment v. Wilson* (775 F.Supp. 1291) -- August 19, 1991.

^{37.} A limited number of mass balance tests have been conducted downwind from roadways to compare predicted versus calculated emissions (calculated from measured pollutant concentrations across the plume, measured air flow, and a number of analytical assumptions). However, these tests are highly uncertain as well.

^{38.} It is ironic that for non-federal projects, the Rule requires a project-specific emissions analysis (which the models were never designed to do and cannot do well) and does not require an air quality impact analysis for the creation of potential hot-spots from projects (which the models were designed to do and can do reasonably well). This is clearly a case of misapplication of modeling tools that should have been addressed in the development of the Rule rather than the implementation of the Rule. It is also interesting to note that USEPA staff expended significant resources in determining to what extent travel demand models should be employed and what characteristics of these models need to be in place for reasonable estimates of vehicle activity to result (58 FR 3784). However, the USEPA and CARB emission rate models were blanketly adopted without a similar assessment of their potential problems with analytical tractability.

^{39.} In *Thomas v. Peterson*, (753 F2d 754(CA9, 1985)), the court held that the U.S. Forest Service was required to prepare an impact statement covering both a proposed road and the timber sales that would occur after the road was built (Mandelker 1991). The court rejected the defendant's claim that "the sales are too uncertain and too far in the future to their impacts to be analyzed along with the road." The court held that the environmental assessment for this project must assess these two actions as connected even if the impact of the proposed first action is not significant. Deciding whether or not the proposed action has significant environmental impacts requires a separate analysis, which should be included in the decision whether to prepare an EIS or an environmental assessment (Cohen, 1993).

⁴⁰ . The plaintiffs claimed that the 1982 plan for hydrocarbons committed to transportation emissions levels to 143 tons per day (tpd) in 1991, that the 1991 estimated level was 199 tpd, and that the failure to achieve the emission budget showed that the transportation sector had not made reasonable further progress.

⁴¹ Due to changes in the modeling methods and updated data from 1987 inventories, the court found that “the updated data rests on a different set of assumptions and different methodology than that which was used to develop the RFP line in the 1982 plan.” Some of the differences in the inputs for the models mentioned were the source categories of emissions and the travel models. Thus, it was concluded that it is not possible to compare 1982 RFP requirements with the updated data. In addition, the court said that in measuring the RFP in the 1982 Plan, the analysis would have to remain true to the assumptions and methodology established in the 1982 plan to maintain “internal consistency”. Yet, the court also found that “[s]tates have an unwavering obligation to carry out federally mandated SIPs; thus where a SIP is violated, liability attaches, regardless of the reasons for the violation.”

Appendix A Transportation Conformity Rule

PART 51 - [Amended]

Subpart T

Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Developed, Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act

§51.390 PURPOSE.

The purpose of this subpart is to implement section 176(c) of the Clean Air Act (CAA), as amended (42 U.S.C. 7401 et seq.), and the related requirements of 23 U.S.C. 109(j), with respect to the conformity of transportation plans, programs, and projects which are developed, funded, or approved by the United States Department of Transportation (DOT), and by metropolitan planning organizations (MPOs) or other recipients of funds under title 23 U.S.C. or the Federal Transit Act (49 U.S.C. 1601 et seq.). This subpart sets forth policy, criteria, and procedures for demonstrating and assuring conformity of such activities to an applicable implementation plan developed pursuant to section 110 and Part D of the CAA.

§51.392 DEFINITIONS.

Terms used but not defined in this subpart shall have the meaning given them by the CAA, Titles 23 and 49 U.S.C., other Environmental Protection Agency (EPA) regulations, or other DOT regulations, in that order of priority.

Applicable implementation plan is defined in section 302(q) of the CAA and means the portion (or portions) of the implementation plan, or most recent revision thereof, which has been approved under section 110, or promulgated under section 110(c), or promulgated or approved pursuant to regulations promulgated under section 301(d) and which implements the relevant requirements of the CAA.

CAA means the Clean Air Act, as amended.

Cause or contribute to a new violation for a project means to: 1) cause or contribute to a new violation of a standard in the area substantially affected by the project or over a region that would otherwise not be in violation of the standard during the future period in question, if the project were not implemented, or 2) contribute to a new violation in a manner that would increase the frequency or severity of a new violation of a standard in such area.

Control strategy implementation plan revision is the applicable implementation plan that contains specific strategies for controlling the emissions of and reducing ambient levels of pollutants in order to satisfy CAA requirements for demonstrations of reasonable further progress and attainment (CAA sections 182(b)(1), 182(c)(2)(A), 182(c)(2)(B), 187(a)(7), 189(a)(1)(B), and 189(b)(1)(A); and sections 192(a) and 192(b), for nitrogen dioxide).

Control strategy period with respect to particulate matter less than 10 microns in diameter (PM10), carbon monoxide (CO), nitrogen dioxide (NO2), and/or ozone precursors (volatile organic compounds and oxides of nitrogen), means that period of time after EPA approves control strategy implementation plan revisions containing strategies for controlling PM10, NO2, CO, and/or ozone, as appropriate. This period ends when a State submits and EPA approves a request under section 107(d) of the CAA for redesignation to an attainment area.

Design concept means the type of facility identified by the project, e.g., freeway, expressway, arterial highway, grade-separated highway, reserved right-of-way rail transit, mixed-traffic rail transit, exclusive busway, etc.

Design scope means the design aspects that will affect the proposed facility's impact on regional emissions, usually as they relate to vehicle or person carrying capacity and control, e.g., number of lanes or tracks

to be constructed or added, length of project, signalization, access control including approximate number and location of interchanges, preferential treatment for high-occupancy vehicles, etc.

DOT means the United States Department of Transportation.

EPA means the Environmental Protection Agency.

FHWA means the Federal Highway Administration of DOT.

FHWA/FTA project, for the purpose of this subpart, is any highway or transit project that is proposed to receive funding assistance and approval through the Federal-Aid Highway program or the Federal mass transit program, or requires Federal Highway Administration (FHWA) or Federal Transit Administration (FTA) approval for some aspect of the project, such as connection to an interstate highway or deviation from applicable design standards on the interstate system.

FTA means the Federal Transit Administration of DOT.

Forecast period with respect to a transportation plan is the period covered by the transportation plan pursuant to 23 CFR Part 450.

Highway project is an undertaking to implement or modify a highway facility or highway-related program. Such an undertaking consists of all required phases necessary for implementation. For analytical purposes, it must be defined sufficiently to: 1) connect logical termini and be of sufficient length to address environmental matters on a broad scope; 2) have independent utility or significance, i.e., be usable and a reasonable expenditure even if no additional transportation improvements in the area are made; and 3) not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Horizon year is a year for which the transportation plan describes the envisioned transportation system according to §51.404.

Hot-spot analysis is an estimation of likely future localized CO and PM10 pollutant concentrations and a comparison of those concentrations to the national ambient air quality standards. Pollutant concentrations to be estimated should be based on the total emissions burden that may result from the implementation of a single, specific project, summed together with future background concentrations (which can be estimated using the ratio of future to current traffic multiplied by the ratio of future to current emission factors) expected in the area. The total concentration must be estimated and analyzed at appropriate receptor locations in the area substantially affected by the project. Hot-spot analysis assesses impacts on a scale smaller than the entire nonattainment or maintenance area, including, for example, congested roadway intersections and highways or transit terminals, and uses an air quality dispersion model to determine the effects of emissions on air quality.

Incomplete data area means any ozone nonattainment area that EPA has classified, in 40 CFR Part 81, as an incomplete data area.

Increase the frequency or severity means to cause a location or region to exceed a standard more often or to cause a violation at a greater concentration than previously existed and/or would otherwise exist during the future period in question, if the project were not implemented.

ISTEA means the Intermodal Surface Transportation Efficiency Act of 1991.

Maintenance area means any 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.

Maintenance period with respect to a pollutant or pollutant precursor means that period of time beginning when a State submits and EPA approves a request under section 107(d) of the CAA for redesignation to an attainment area, and lasting for 20 years, unless the applicable implementation plan specifies that the maintenance period shall last for more than 20 years.

Metropolitan planning organization (MPO) is that organization designated as being responsible, together with the State, for conducting the continuing, cooperative, and comprehensive planning process under 23 U.S.C. 134 and 49 U.S.C. 1607. It is the forum for cooperative transportation decision-making.

Milestone has the meaning given in sections 182(g)(1) and 189(c) of the CAA. A milestone consists of an emission level and the date upon which it is required to be achieved.

Motor vehicle emissions budget is that portion of the total allowable emissions defined in a revision to the applicable implementation plan (or in an implementation plan revision that was endorsed by the Governor or his or her designee, subject to a public hearing, and submitted to EPA, but not yet approved by EPA) for a certain date for the purpose of meeting reasonable further progress milestones or attainment or maintenance demonstrations, for any criteria pollutant or its precursors, allocated by

- the applicable implementation plan to highway and transit vehicles. The applicable implementation plan for an ozone nonattainment area may also designate a motor vehicle emission budget for oxides of nitrogen (NOx) for a reasonable further progress milestone year if the applicable implementation plan demonstrates that this NOx budget will be achieved with measures in the implementation plan (as an implementation plan must do for VOC milestone requirements). The applicable implementation plan for an ozone nonattainment area includes a NOx budget if NOx reductions are being substituted for reductions in volatile organic compounds in milestone years required for reasonable further progress.
- National ambient air quality standards (NAAQS) are those standards established pursuant to section 109 of the CAA.
- NEPA means the National Environmental Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.).
- NEPA process completion, for the purposes of this subpart, with respect to FHWA or FTA, means the point at which there is a specific action to make a determination that a project is categorically excluded, to make a Finding of No Significant Impact, or to issue a record of decision on a Final Environmental Impact Statement under NEPA.
- Nonattainment area means any geographic region of the United States that has been designated as nonattainment under section 107 of the CAA for any pollutant for which a national ambient air quality standard exists.
- Not classified area means any carbon monoxide nonattainment area that EPA has not classified as either moderate or serious.
- Phase II of the interim period with respect to a pollutant or pollutant precursor means that period of time after the effective date of this rule, lasting until the earlier of the following: submission to EPA of the relevant control strategy implementation plan revisions that have been endorsed by the Governor (or his or her designee) and have been subject to a public hearing, or the date that the Clean Air Act requires relevant control strategy implementation plans to be submitted to EPA, provided EPA has notified the State, MPO, and DOT of the State's failure to submit any such plans. The precise end of Phase II of the interim period is defined in §51.448.
- Project means a highway project or transit project.
- Recipient of funds designated under title 23 U.S.C. or the Federal Transit Act means any agency at any level of State, county, city, or regional government that routinely receives Title 23 U.S.C. or Federal Transit Act funds to construct FHWA/FTA projects, operate FHWA/FTA projects or equipment, purchase equipment, or undertake other services or operations via contracts or agreements. This definition does not include private landowners or developers, or contractors or entities that are only paid for services or products created by their own employees.
- Regionally significant project means a transportation project (other than an exempt project) that is on a facility that serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments, such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.
- Rural transport ozone nonattainment area means an ozone nonattainment area that does not include, and is not adjacent to, any part of a Metropolitan Statistical Area or, where one exists, a Consolidated Metropolitan Statistical Area (as defined by the United States Bureau of the Census) and is classified under Clean Air Act section 182(h) as a rural transport area.
- Standard means a national ambient air quality standard.
- Submarginal area means any ozone nonattainment area that EPA has classified as submarginal in 40 CFR Part 81.
- Transit is mass transportation by bus, rail, or other conveyance that provides general or special service to the public on a regular and continuing basis. It does not include school buses or charter or sightseeing services.
- Transit project is an undertaking to implement or modify a transit facility or transit-related program; purchase transit vehicles or equipment; or provide financial assistance for transit operations. It does not include actions that are solely within the jurisdiction of local transit agencies, such as changes in routes, schedules, or fares. It may consist of several phases. For analytical purposes, it must be defined inclusively enough to:

- (1) Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
- (2) Have independent utility or independent significance, i.e., be a reasonable expenditure even if no additional transportation improvements in the area are made; and
- (3) Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Transitional area means any ozone nonattainment area that EPA has classified as transitional in 40 CFR Part 81.

Transitional period with respect to a pollutant or pollutant precursor means that period of time that begins after submission to EPA of the relevant control strategy implementation plan that has been endorsed by the Governor (or his or her designee) and has been subject to a public hearing. The transitional period lasts until EPA takes final approval or disapproval action on the control strategy implementation plan submission or finds it to be incomplete. The precise beginning and end of the transitional period is defined in §51.448.

Transportation control measure (TCM) is any measure that is specifically identified and committed to in the applicable implementation plan that is either one of the types listed in §108 of the CAA, or any other measure for the purpose of reducing emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions. Notwithstanding the above, vehicle technology-based, fuel-based, and maintenance-based measures that control the emissions from vehicles under fixed traffic conditions are not TCMs for the purposes of this subpart.

Transportation improvement program (TIP) means a staged, multiyear, intermodal program of transportation projects covering a metropolitan planning area that is consistent with the metropolitan transportation plan, and developed pursuant to 23 CFR Part 450.

Transportation plan means the official intermodal metropolitan transportation plan that is developed through the metropolitan planning process for the metropolitan planning area, developed pursuant to 23 CFR Part 450.

Transportation project is a highway project or a transit project.

§51.394 APPLICABILITY.

(a) Action applicability.

- (1) Except as provided for in paragraph (c) of this section or §51.460, conformity determinations are required for:
 - (i) The adoption, acceptance, approval or support of transportation plans developed pursuant to 23 CFR Part 450 or 49 CFR Part 613 by an MPO or DOT;
 - (ii) The adoption, acceptance, approval or support of TIPs developed pursuant to 23 CFR Part 450 or 49 CFR Part 613 by an MPO or DOT; and
 - (iii) The approval, funding, or implementation of FHWA/FTA projects.
- (2) Conformity determinations are not required under this Rule for individual projects that are not FHWA/FTA projects. However, §51.450 applies to such projects if they are regionally significant.

(b) Geographic applicability.

- (1) The provisions of this subpart shall apply in all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan.
- (2) The provisions of this subpart apply with respect to emissions of the following criteria pollutants: ozone, carbon monoxide, nitrogen dioxide, and particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM₁₀).
- (3) The provisions of this subpart apply with respect to emissions of the following precursor pollutants:
 - (i) Volatile organic compounds and nitrogen oxides in ozone areas (unless the Administrator determines under section 182(f) of the CAA that additional reductions of NO_x would not contribute to attainment);
 - (ii) Nitrogen oxides in nitrogen dioxide areas; and
 - (iii) Volatile organic compounds, nitrogen oxides, and PM₁₀ in PM₁₀ areas if:

- (A) During the interim period, the EPA Regional Administrator or the Director of the State air agency has made a finding that transportation-related precursor emissions within the nonattainment area are a significant contributor to the PM10 nonattainment problem and has so notified the MPO and DOT; or
- (B) During the transitional, control strategy, and maintenance periods, the applicable implementation plan (or implementation plan submission) establishes a budget for such emissions as part of the reasonable further progress, attainment, or maintenance strategy.

(c) Limitations.

- (1) Projects subject to this regulation for which the NEPA process and a conformity determination have been completed by FHWA or FTA may proceed toward implementation without further conformity determinations if one of the following major steps has occurred within the past three years: NEPA process completion; start of final design; acquisition of a significant portion of the right-of-way; or approval of the plans, specifications, and estimates. All phases of such projects that were considered in the conformity determination are also included, if those phases were for the purpose of funding, final design, right-of-way acquisition, construction, or any combination of these phases.
- (2) A new conformity determination for the project will be required if there is a significant change in project design concept, and scope, if a supplemental environmental document for air quality purposes is initiated, or if no major steps to advance the project have occurred within the past three years.

§51.396 IMPLEMENTATION PLAN REVISION

(a) States with areas subject to this Rule must submit to the EPA and DOT a revision to their implementation plan that contains criteria and procedures for DOT, MPOs and other State or local agencies to assess the conformity of transportation plan, programs, and projects, consistent with these regulations. This revision was to be submitted by November 25, 1994 (or within 12 months of an area's redesignation from attainment to nonattainment, if the State has not previously submitted such a revision). EPA provided DOT with a 30-day comment period before taking action to approve or disapprove the submission. A State's conformity provisions may contain criteria and procedures more stringent than the requirements described in these regulations only if the State's conformity provisions apply equally to non-federal, as well as Federal entities.

(b) The Federal conformity rules under this subpart and 40 CFR Part 93, in addition to any existing applicable State requirements, establish the conformity criteria and procedures necessary to meet the requirements of Clean Air Act section 176(c) until such time as the required conformity implementation plan revision is approved by EPA. Following EPA approval of the State conformity provisions (or a portion thereof) in a revision to the applicable implementation plan, the approved (or approved portion of the) State criteria and procedures would govern conformity determinations and the Federal conformity regulations contained in 40 CFR Part 93 would apply only for the portion, if any, of the State's conformity provisions that is not approved by EPA. In addition, any previously applicable implementation plan requirements relating to conformity remain enforceable until the State revises its applicable implementation plan to specifically remove them and that revision is approved by the EPA.

(c) To be approved by EPA, the implementation plan revision submitted to EPA and DOT under this section shall address all requirements of this subpart in a manner that gives them full legal effect. In particular, the revision shall incorporate the provisions of the following sections of this subpart in verbatim form, except insofar as needed to give effect to a stated intent in the revision to establish criteria and procedures more stringent than the requirements stated in these sections: §§ §51.392, §51.394, §51.398, §51.400, §51.404, §51.410, §51.412, §51.414, §51.416, §51.418, §51.420, §51.422, §51.424, §51.426, §51.428, §51.430, §51.432, §51.434, §51.436, §51.438, §51.440, §51.442, §51.444, §51.446, §51.448, §51.450, §51.460, and §51.462

§51.398 PRIORITY.

When assisting or approving any action with air quality-related consequences, FHWA and FTA shall give priority to the implementation of those transportation portions of an applicable implementation plan prepared to attain and maintain the NAAQS. This priority shall be consistent with statutory requirements for allocation of funds among States or other jurisdictions.

§51.400 FREQUENCY OF CONFORMITY DETERMINATIONS.

(a) Conformity determinations and conformity redeterminations for transportation plans, TIPs, and FHWA/FTA projects must be made according to the requirements of this section and the applicable implementation plan.

(b) Transportation plans.

- (1) Each new transportation plan must be found to conform before the transportation plan is approved by the MPO or accepted by DOT.
- (2) All transportation plan revisions must be found to conform before the transportation plan revisions are approved by MPO or accepted by DOT, unless the revision merely adds or deletes exempt projects listed in §51.460. The conformity determination must be based on the transportation plan and the revision taken as a whole.
- (3) Conformity of existing transportation plans must be redetermined within 18 months of the following, or the existing conformity determination will lapse upon the following:
 - (i) November 24, 1993;
 - (ii) EPA approval of an implementation plan revision that: (a) Establishes or revises a transportation-related emissions budget (as required by CAA sections 175A(a), 182(b)(1), 182(c)(2)(A), 182(c)(2)(B), 187(a)(7), 189(a)(1)(B), and 189(b)(1)(A); and sections 192(a) and 192(b), for nitrogen dioxide); or (b) Adds, deletes, or changes TCMs; and
 - (iii) EPA promulgation of an implementation plan that establishes or revises a transportation-related emissions budget or adds, deletes, or changes TCMs.
- (4) In any case, conformity determinations must be made no less frequently than every three years, or the existing conformity determination will lapse.

(c) Transportation improvement programs.

- (1) A new TIP must be found to conform before the TIP is approved by the MPO or accepted by DOT.
- (2) A TIP amendment requires a new conformity determination for the entire TIP before the amendment is approved by the MPO or accepted by DOT, unless the amendment merely adds or deletes exempt projects listed in §51.460.
- (3) After an MPO adopts a new or revised transportation plan, conformity must be redetermined by the MPO and DOT within six months from the date of adoption of the plan, unless the new or revised plan merely adds or deletes exempt projects listed in §51.460. Otherwise, the existing conformity determination for the TIP will lapse.
- (4) In any case, conformity determinations must be made no less frequently than every three years or the existing conformity determination will lapse.

(d) Projects.

FHWA/FTA projects must be found to conform before they are adopted, accepted, approved, or funded. Conformity must be redetermined for any FHWA/FTA project if none of the following major steps has occurred within the past three years: NEPA process completion; start of final design; acquisition of a significant portion of the right-of-way; or approval of the plans, specifications, and estimates.

§51.402 CONSULTATION.

(a) General.

The implementation plan revision required under §51.396 of this chapter will include procedures for interagency consultation (Federal, State, and local), and resolution of conflicts.

- (1) The implementation plan revision will include procedures to be undertaken by MPOs, State Departments of Transportation, and DOT with State and local air quality agencies and EPA before making conformity determinations, and by State and local air agencies and EPA with MPOs, State Departments of Transportation, and DOT in developing applicable implementation plans.
- (2) Before the implementation plan revision is approved by EPA, MPOs and State Departments of Transportation before making conformity determinations must provide reasonable opportunity for consultation with State air agencies, local air quality and transportation agencies, DOT, and EPA, including consultation on the issues described in paragraph (c)(1) of this section.

(b) Interagency consultation procedures: General factors.

- (1) States will provide in the implementation plan well-defined consultation procedures whereby representatives of the MPOs, State and local air quality planning agencies, State and local transportation agencies, and other organizations with responsibilities for developing, submitting, or implementing provisions of an implementation plan required by the CAA must consult with each other and with local or regional offices of EPA, FHWA, and FTA on the development of the implementation plan, the transportation plan, the TIP, and associated conformity determinations.
- (2) Interagency consultation procedures will include at a minimum the general factors listed below and the specific processes in paragraph (c) of this section:
 - (i) The roles and responsibilities assigned to each agency at each stage in the implementation plan development process and the transportation planning process, including technical meetings;
 - (ii) The organizational level of regular consultation;
 - (iii) A process for circulating (or providing ready access to) draft documents and supporting materials for comment before formal adoption or publication;
 - (iv) The frequency of, or process for convening, consultation meetings and responsibilities for establishing meeting agendas;
 - (v) A process for responding to the significant comments of involved agencies; and
 - (vi) A process for the development of a list of the TCMs which are in the applicable implementation plan.

(c) Interagency consultation procedures: Specific processes.

Interagency consultation procedures will also include the following specific processes:

- (1) A process involving the MPO, State and local air quality planning agencies, State and local transportation agencies, EPA, and DOT for the following:
 - (i) Evaluating and choosing a model (or models) and associated methods and assumptions to be used in hot-spot analyses and regional emission analyses;
 - (ii) Determining which minor arterials and other transportation projects should be considered "regionally significant" for the purposes of regional emission analysis (in addition to those functionally classified as principal arterial or higher or fixed guideway systems or extensions that offer an alternative to regional highway travel), and which projects should be considered to have a significant change in design concept and scope from the transportation plan or TIP;
 - (iii) Evaluating whether projects otherwise exempted from meeting the requirements of this subpart (see §51.460 and §51.462) should be treated as non-exempt in cases where potential adverse emission impacts may exist for any reason;
 - (iv) Making a determination, as required by §51.418(c)(1), whether past obstacles to implementation of TCMs that are behind the schedule established in the applicable implementation plan have been identified and are being overcome, and whether State and local agencies with influence over approvals or funding for TCMs are giving maximum priority to approval or funding for TCMs. This process shall also consider whether delays in TCM implementation necessitate revisions to the applicable implementation plan to remove TCMs or substitute TCMs or other emission reduction measures;

- (v) Identifying, as required by §51.454(d), projects located at sites in PM10 nonattainment areas that have vehicle and roadway emission and dispersion characteristics that are essentially identical to those at sites that have violations verified by monitoring, and therefore require quantitative PM10 hot-spot analysis; and
 - (vi) Notification of transportation plan or TIP revisions or amendments that merely add or delete exempt projects listed in §51.460.
- (2) A process involving the MPO and State and local air quality planning agencies and transportation agencies for the following:
 - (i) Evaluating events that will trigger new conformity determinations in addition to those triggering events established in §51.400; and
 - (ii) Consulting on emission analysis for transportation activities that cross the borders of MPOs or nonattainment areas or air basins.
 - (3) Where the metropolitan planning area does not include the entire nonattainment or maintenance area, a process involving the MPO and the State Department of Transportation for cooperative planning and analysis for purposes of determining conformity of all projects outside the metropolitan area and within the nonattainment or maintenance area.
 - (4) A process to ensure that plans for construction of regionally significant projects that are not FHWA/FTA projects (including projects for which alternative locations, design concept and scope, or the no-build option are still being considered), including those by recipients of funds designated under title 23 U.S.C. or the Federal Transit Act, are disclosed to the MPO on a regular basis, and to ensure that any changes to those plans are immediately disclosed;
 - (5) A process involving the MPO and other recipients of funds designated under title 23 U.S.C. or the Federal Transit Act for assuming the location and design concept and scope of projects that are disclosed to the MPO as required by paragraph (c)(4) of this section, but whose sponsors have not yet decided these features, in sufficient detail to perform the regional emission analysis according to the requirements of §51.452.
 - (6) A process for consulting on the design, schedule, and funding of research and data collection efforts and regional transportation model development by the MPO (e.g., household/travel transportation surveys).
 - (7) A process (including Federal agencies) for providing final documents (including applicable implementation plans and implementation plan revisions) and supporting information to each agency after approval or adoption.

(d) Resolving conflicts.

Conflicts among State agencies or between State agencies and an MPO shall be escalated to the Governor if they cannot be resolved by the heads of the involved agencies. The State air agency has 14-calendar days to appeal to the Governor after the State DOT or MPO has notified the State air agency head of the resolution of his or her comments. The implementation plan revision required by §51.396 of this chapter shall define the procedures for starting of the 14-day clock. If the State air agency appeals to the Governor, the final conformity determination must have the concurrence of the Governor. If the State air agency does not appeal to the Governor within 14 days, the MPO or State Department of Transportation may proceed with the final conformity determination. The Governor may delegate his or her role in this process, but not to the head or staff of the State or local air agency, State Department of Transportation, State transportation commission or board, or an MPO.

(e) Public consultation procedures.

Affected agencies making conformity determinations on transportation plans, programs, and projects shall establish a proactive public involvement process that provides opportunity for public review and comment prior to taking formal action on a conformity determination for all transportation plans and TIPs, consistent with the requirements of 23 CFR Part 450. In addition, these agencies must specifically address in writing all public comments that known plans for a regionally significant project that is not receiving FHWA or FTA funding or approval have not been properly reflected in the emission analysis supporting a proposed conformity finding for a transportation plan or TIP. These agencies shall also provide opportunity for public involvement in conformity determinations for projects where otherwise required by law.

§51.404 CONTENT OF TRANSPORTATION PLANS.

(a) Transportation plans adopted after January 1, 1995, in serious, severe, or extreme ozone nonattainment areas and in serious carbon monoxide nonattainment areas.

The transportation plan must specifically describe the transportation system envisioned for certain future years that shall be called horizon years.

(1) The agency or organization developing the transportation plan may choose any years to be horizon years, subject to the following restrictions:

(i) Horizon years may be no more than 10 years apart.

(ii) The first horizon year may be no more than 10 years from the base year used to validate the transportation demand planning model.

(iii) If the attainment year is in the time span of the transportation plan, the attainment year must be a horizon year.

(iv) The last horizon year must be the last year of the transportation plan's forecast period.

(2) For these horizon years:

(i) The transportation plan shall quantify and document the demographic and employment factors influencing expected transportation demand, including land use forecasts, in accordance with implementation plan provisions and §51.402;

(ii) The highway and transit system shall be described in terms of the regionally significant additions or modifications to the existing transportation network that the transportation plan envisions to be operational in the horizon years. Additions and modifications to the highway network shall be sufficiently identified to indicate intersections with existing regionally significant facilities, and to determine their effect on route options between transportation analysis zones. Each added or modified highway segment shall also be sufficiently identified in terms of its design concept and design scope to allow modeling of travel times under various traffic volumes, consistent with the modeling methods for area-wide transportation analysis in use by the MPO. Transit facilities, equipment, and services envisioned for the future shall be identified in terms of design concept, design scope, and operating policies sufficiently to allow modeling of their transit ridership. The description of additions and modifications to the transportation network shall also be sufficiently specific to show that there is a reasonable relationship between expected land use and the envisioned transportation system; and

(iii) Other future transportation policies, requirements, services, and activities, including intermodal activities, shall be described.

(b) Moderate areas reclassified to serious.

Ozone or CO nonattainment areas that are reclassified from moderate to serious must meet the requirements of paragraph (a) of this section within two years from the date of reclassification.

(c) Transportation plans for other areas.

Transportation plans for other areas must meet the requirements of paragraph (a) of this section at least to the extent it has been the previous practice of the MPO to prepare plans that meet those requirements. Otherwise, transportation plans must describe the transportation system envisioned for the future specifically enough to allow determination of conformity according to the criteria and procedures of §51.410 through §51.446.

(d) Savings.

The requirements of this section supplement other requirements of applicable law or regulation governing the format or content of transportation plans.

§51.406 RELATIONSHIP OF TRANSPORTATION PLAN AND TIP CONFORMITY WITH THE NEPA PROCESS.

The degree of specificity required in the transportation plan and the specific travel network assumed for air quality modeling do not preclude the consideration of alternatives in the NEPA process or other project development studies. Should the NEPA process result in a project with design concept and scope significantly

different from that in the transportation plan or TIP, the project must meet the criteria in §51.410 through §51.446 for projects not from a TIP before NEPA process completion.

§51.408 FISCAL CONSTRAINTS FOR TRANSPORTATION PLANS AND TIPS.

Transportation plans and TIPs must be fiscally constrained consistent with DOT's metropolitan planning regulations at 23 CFR Part 450 in order to be found in conformity.

§51.410 CRITERIA AND PROCEDURES FOR DETERMINING CONFORMITY OF TRANSPORTATION PLANS, PROGRAMS, AND PROJECTS: GENERAL.

(a) In order to be found to conform, each transportation plan, program, and FHWA/FTA project must satisfy the applicable criteria and procedures in §51.412 through §51.446 as listed in Table 1 in paragraph (b) of this section, and must comply with all applicable conformity requirements of implementation plans and of court orders for the area that pertain specifically to conformity determination requirements. The criteria for making conformity determinations differ based on the action under review (transportation plans, TIPs, and FHWA/FTA projects), the time period in which the conformity determination is made, and the relevant pollutant.

(b) The following table indicates the criteria and procedures in §51.412 through §51.446 which apply for each action in each time period.

**Table 1
Conformity Criteria**

ALL PERIODS

Transportation Plan	§51.412, §51.414, §51.416, §51.418(b)
TIP	§51.412, §51.414, §51.416, §51.418(c)
Project (From a conforming plan and TIP	§51.412, §51.414, §51.416, §51.420, §51.422, §51.424, §51.426.
Project (Not from a conforming plan and TIP	§51.412, §51.414, §51.416, §51.418(d) §51.420, §51.424, §51.426.

PHASE II OF THE INTERIM PERIOD

Transportation Plan	§51.436, §51.442.
TIP	§51.438, §51.444.
Project (From a conforming plan and TIP	§51.434.
Project (Not from a conforming plan and TIP	§51.434, §51.440, §51.446.

TRANSITIONAL PERIOD

Transportation Plan	§51.428, §51.436, §51.442.
TIP	§51.430, §51.438, §51.444.
Project (From a conforming plan and TIP	§51.434.
Project (Not from a conforming plan and TIP	§51.432, §51.434, §51.440, §51.446

CONTROL STRATEGY AND MAINTENANCE PERIODS

Transportation Plan	§51.428.
TIP	§51.430.
Project (From a conforming plan and TIP	No additional criteria.
Project (Not from a conforming plan and TIP	§51.432.

- §51.412 The conformity determination must be based on the latest planning assumptions.
- §51.414 The conformity determination must be based on the latest emission estimation model available.
- §51.416 The MPO must make the conformity determination according to the consultation procedures of this Rule and the implementation plan revision required by §51.396 of this chapter.
- §51.418 The transportation plan, TIP, or FHWA/FTA project that is not from a conforming plan and TIP must provide for the timely implementation of TCMs from the applicable implementation plan.
- §51.420 There must be a currently conforming transportation plan and currently conforming TIP at the time of project approval.
- §51.422 The project must come from a conforming transportation plan and program.
- §51.424 The FHWA/FTA project must not cause or contribute to any new localized CO or PM10 violations or increase the frequency or severity of any existing CO or PM10 violations in CO and PM10 nonattainment and maintenance areas.
- §51.426 The FHWA/FTA project must comply with PM10 control measures in the applicable implementation plan.
- §51.428 The transportation plan must be consistent with the motor vehicle emission budget(s) in the applicable implementation plan or implementation plan submission.
- §51.430 The TIP must be consistent with the motor vehicle emission budget(s) in the applicable implementation plan or implementation plan submission.
- §51.432 The project which is not from a conforming transportation plan and conforming TIP must be consistent with the motor vehicle emission budget(s) in the applicable implementation plan or implementation plan submission.
- §51.434 The FHWA/FTA project must eliminate or reduce the severity and number of localized CO violations in the area substantially affected by the project (in CO nonattainment areas).
- §51.436 The transportation plan must contribute to emission reductions in ozone and CO nonattainment areas.
- §51.438 The TIP must contribute to emission reductions in ozone and CO nonattainment areas.
- §51.440 The project that is not from a conforming transportation plan and TIP must contribute to emission reductions in ozone and CO nonattainment areas.
- §51.442 The transportation plan must contribute to emission reductions or must not increase emissions in PM10 and NO2 nonattainment areas.
- §51.444 The TIP must contribute to emission reductions or must not increase emissions in PM10 and NO2 nonattainment areas.
- §51.446 The project that is not from a conforming transportation plan and TIP must contribute to emission reductions or must not increase emissions in PM10 and NO2 nonattainment areas.

§51.412 CRITERIA AND PROCEDURES: LATEST PLANNING ASSUMPTIONS.

- (a) The conformity determination, with respect to all other applicable criteria in §51.414 through §51.446, must be based upon the most recent planning assumptions in force at the time of the conformity determination. This criterion applies during all periods. The conformity determination must satisfy the requirements of paragraphs (b) through (f) of this section.
- (b) Assumptions must be derived from the estimates of current and future population, employment, travel, and congestion most recently developed by the MPO or other agency authorized to make such estimates and approved by the MPO. The conformity determination must also be based on the latest assumptions about current and future background concentrations.
- (c) The conformity determination for each transportation plan and TIP must discuss how transit operating policies (including fares and service levels) and assumed transit ridership have changed since the previous conformity determination.
- (d) The conformity determination must include reasonable assumptions about transit service and increases in transit fares and road and bridge tolls over time.

(e) The conformity determination must use the latest existing information regarding the effectiveness of the TCMs that have already been implemented.

(f) Key assumptions shall be specified and included in the draft documents and supporting materials used for the interagency and public consultation required by §51.402.

§51.414 CRITERIA AND PROCEDURES: LATEST EMISSION MODEL.

(a) The conformity determination must be based on the latest emission estimation model available. This criterion applies during all periods. It is satisfied if the most current version of the motor vehicle emission model specified by EPA for use in the preparation or revision of implementation plans in that State or region is used for the conformity analysis. Where EMFAC is the motor vehicle emissions model used in preparing or revising the applicable implementation plan, new versions must be approved by EPA before they are used in the conformity analysis.

(b) EPA will consult with DOT to establish a grace period following the specification of any new model.

(1) The grace period will be no less than three months and no more than 24 months after notice of availability is published in the Federal Register.

(2) The length of the grace period will depend on the degree of change in the model and the scope of re-planning likely to be necessary by MPOs in order to assure conformity. If the grace period will be longer than three months, EPA will announce the appropriate grace period in the Federal Register.

(c) Conformity analyses for which the emission analysis was begun during the grace period or before the Federal Register notice of availability of the latest emission model may continue to use the previous version of the model for transportation plans and TIPs. The previous model may also be used for projects if the analysis was begun during the grace period or before the Federal Register notice of availability, provided no more than three years have passed since the draft environmental document was issued.

§51.416 CRITERIA AND PROCEDURES: CONSULTATION.

The MPO must make the conformity determination according to the consultation procedures in this Rule and in the implementation plan revision required by §51.396 of this chapter, and according to the public involvement procedures established by the MPO in compliance with 23 CFR Part 450. This criterion applies during all periods. Until the implementation plan revision required by §51.396 of this chapter is approved by EPA, the conformity determination must be made according to the procedures in §51.402(a)(2) and §51.402(e). Once the implementation plan revision has been approved by EPA, this criterion is satisfied if the conformity determination is made consistent with the implementation plan's consultation requirements.

§51.418 CRITERIA AND PROCEDURES: TIMELY IMPLEMENTATION OF TCMs.

(a) The transportation plan, TIP, or FHWA/FTA project that is not from a conforming plan and TIP must provide for the timely implementation of TCMs from the applicable implementation plan. This criterion applies during all periods.

(b) For transportation plans, this criterion is satisfied if the following two conditions are met:

(1) The transportation plan, in describing the envisioned future transportation system, provides for the timely completion or implementation of all TCMs in the applicable implementation plan that are eligible for funding under title 23 U.S.C. or the Federal Transit Act, consistent with schedules included in the applicable implementation plan.

(2) Nothing in the transportation plan interferes with the implementation of any TCM in the applicable implementation plan.

- (c) For TIPs, this criterion is satisfied if the following conditions are met:
- (1) An examination of the specific steps and funding source(s) needed to fully implement each TCM indicates that TCMs which are eligible for funding under title 23 U.S.C. or the Federal Transit Act are on or ahead of the schedule established in the applicable implementation plan, or, if such TCMs are behind the schedule established in the applicable implementation plan, the MPO and DOT have determined that past obstacles to implementation of the TCMs have been identified and have been or are being overcome, and that all State and local agencies with influence over approvals or funding for TCMs give maximum priority to approval or funding of TCMs over other projects within their control, including projects in locations outside the nonattainment or maintenance area.
 - (2) If TCMs in the applicable implementation plan have previously been programmed for Federal funding but the funds have not been obligated and the TCMs are behind the schedule in the implementation plan, then the TIP cannot be found to conform if the funds intended for those TCMs are reallocated to projects in the TIP other than TCMs, or if there are no other TCMs in the TIP, if the funds are reallocated to projects in the TIP other than projects that are eligible for Federal funding under ISTEA's Congestion Mitigation and Air Quality Improvement Program.
 - (3) Nothing in the TIP may interfere with the implementation of any TCM in the applicable implementation plan.
- (d) For FHWA/FTA projects that are not from a conforming transportation plan and TIP, this criterion is satisfied if the project does not interfere with the implementation of any TCM in the applicable implementation plan.

§51.420 CRITERIA AND PROCEDURES: CURRENTLY CONFORMING TRANSPORTATION PLAN AND TIP.

There must be a currently conforming transportation plan and currently conforming TIP at the time of project approval. This criterion applies during all periods. It is satisfied if the current transportation plan and TIP have been found to conform to the applicable implementation plan by the MPO and DOT according to the procedures of this subpart. Only one conforming transportation plan or TIP may exist in an area at any time; conformity determinations of a previous transportation plan or TIP expire once the current plan or TIP is found to conform by DOT. The conformity determination on a transportation plan or TIP will also lapse if conformity is not determined according to the frequency requirements of §51.400.

§51.422 CRITERIA AND PROCEDURES: PROJECTS FROM A PLAN AND TIP.

- (a) The project must come from a conforming plan and program. This criterion applies during all periods. If this criterion is not satisfied, the project must satisfy all criteria in Table 1 for a project not from a conforming transportation plan and TIP. A project is considered to be from a conforming transportation plan if it meets the requirements of paragraph (b) of this section and from a conforming program if it meets the requirements of paragraph (c) of this section.
- (b) A project is considered to be from a conforming transportation plan if one of the following conditions applies:
- (1) For projects that are required to be identified in the transportation plan in order to satisfy §51.404, the project is specifically included in the conforming transportation plan and the project's design concept and scope have not changed significantly from those that were described in the transportation plan, or in a manner that would significantly impact use of the facility; or
 - (2) For projects that are not required to be specifically identified in the transportation plan, the project is identified in the conforming transportation plan, or is consistent with the policies and purpose of the transportation plan and will not interfere with other projects specifically included in the transportation plan.

- (c) A project is considered to be from a conforming program if the following conditions are met:
- (1) The project is included in the conforming TIP and the design concept and scope of the project were adequate at the time of the TIP conformity determination to determine its contribution to the TIP's regional emissions and have not changed significantly from those that were described in the TIP, or in a manner that would significantly impact use of the facility; and
 - (2) If the TIP describes a project design concept and scope that includes project-level emissions mitigation or control measures, written commitments to implement such measures must be obtained from the project sponsor and/or operator as required by §51.458(a) in order for the project to be considered from a conforming program. Any change in these mitigation or control measures that would significantly reduce their effectiveness constitutes a change in the design concept and scope of the project.

§51.424 CRITERIA AND PROCEDURES: LOCALIZED CO AND PM10 VIOLATIONS (HOT SPOTS).

- (a) The FHWA/FTA project must not cause or contribute to any new localized CO or PM10 violations or increase the frequency or severity of any existing CO or PM10 violations in CO and PM10 nonattainment and maintenance areas. This criterion applies during all periods. This criterion is satisfied if it is demonstrated that no new local violations will be created and the severity or number of existing violations will not be increased as a result of the project.
- (b) The demonstration must be performed according to the requirements of §51.402(c)(1)(i) and §51.454.
- (c) For projects that are not of the type identified by §51.454(a) or §51.454(d), this criterion may be satisfied if consideration of local factors clearly demonstrates that no local violations presently exist and no new local violations will be created as a result of the project. Otherwise, in CO nonattainment and maintenance areas, a quantitative demonstration must be performed according to the requirements of §51.454(b).

§51.426 CRITERIA AND PROCEDURES: COMPLIANCE WITH PM10 CONTROL MEASURES.

The FHWA/FTA project must comply with PM10 control measures in the applicable implementation plan. This criterion applies during all periods. It is satisfied if control measures (for the purpose of limiting PM10 emissions from the construction activities and/or normal use and operation associated with the project) contained in the applicable implementation plan are included in the final plans, specifications, and estimates for the project.

§51.428 CRITERIA AND PROCEDURES: MOTOR VEHICLE EMISSION BUDGET (TRANSPORTATION PLAN).

- (a) The transportation plan must be consistent with the motor vehicle emission budget(s) in the applicable implementation plan (or implementation plan submission). This criterion applies during the transitional period and the control strategy and maintenance periods, except as provided in §51.464. This criterion may be satisfied if the requirements in paragraphs (b) and (c) of this section are met:
- (b) A regional emission analysis shall be performed as follows:
- (1) The regional analysis shall estimate emissions of any of the following pollutants and pollutant precursors for which the area is in nonattainment or maintenance and for which the applicable implementation plan (or implementation plan submission) establishes an emission budget:
 - (i) VOC as an ozone precursor;
 - (ii) NOX as an ozone precursor, unless the Administrator determines that additional reductions of NOX would not contribute to attainment;
 - (iii) CO;

- (iv) PM10 (and its precursors VOC and/or NOX if the applicable implementation plan or implementation plan submission identifies transportation-related precursor emissions within the nonattainment area as a significant contributor to the PM10 nonattainment problem or establishes a budget for such emissions); or
 - (v) NOX (in NO2 nonattainment or maintenance areas);
- (2) The regional emission analysis shall estimate emissions from the entire transportation system, including all regionally significant projects contained in the transportation plan and all other regionally significant highway and transit projects expected in the nonattainment or maintenance area in the timeframe of the transportation plan;
 - (3) The emission analysis methodology shall meet the requirements of §51.452;
 - (4) For areas with a transportation plan that meets the content requirements of §51.404(a), the emissions analysis shall be performed for each horizon year. Emissions in milestone years that are between the horizon years may be determined by interpolation; and
 - (5) For areas with a transportation plan that does not meet the content requirements of §51.404(a), the emission analysis shall be performed for any years in the time span of the transportation plan provided they are not more than ten years apart and provided the analysis is performed for the last year of the plan's forecast period. If the attainment year is in the time span of the transportation plan, the emission analysis must also be performed for the attainment year. Emissions in milestone years that are between these analysis years may be determined by interpolation.
- (c) The regional emission analysis shall demonstrate that for each of the applicable pollutants or pollutant precursors in paragraph (b)(1) of this section the emissions are less than or equal to the motor vehicle emission budget as established in the applicable implementation plan or implementation plan submission as follows:
- (1) If the applicable implementation plan or implementation plan submission establishes emission budgets for milestone years, emissions in each milestone year are less than or equal to the motor vehicle emission budget established for that year;
 - (2) For nonattainment areas, emissions in the attainment year are less than or equal to the motor vehicle emission budget established in the applicable implementation plan or implementation plan submission for that year;
 - (3) For nonattainment areas, emissions in each analysis or horizon year after the attainment year are less than or equal to the motor vehicle emission budget established by the applicable implementation plan or implementation plan submission for the attainment year. If emission budgets are established for years after the attainment year, emissions in each analysis year or horizon year must be less than or equal to the motor vehicle emission budget for that year, if any, or the motor vehicle emission budget for the most recent budget year prior to the analysis year or horizon year; and
 - (4) For maintenance areas, emissions in each analysis or horizon year are less than or equal to the motor vehicle emission budget established by the maintenance plan for that year, if any, or the emission budget for the most recent budget year prior to the analysis or horizon year.

§51.430 CRITERIA AND PROCEDURES: MOTOR VEHICLE EMISSION BUDGET (TIP).

- (a) The TIP must be consistent with the motor vehicle emission budget(s) in the applicable implementation plan (or implementation plan submission). This criterion applies during the transitional period and the control strategy and maintenance periods, except as provided in §51.464. This criterion may be satisfied if the requirements in paragraphs (b) and (c) of this section are met.
- (b) For areas with a conforming transportation plan that fully meets the content requirements of §51.404(a), this criterion may be satisfied without additional regional analysis if:
 - (1) Each program year of the TIP is consistent with the Federal funding that may be reasonably expected for that year, and required State/local matching funds and funds for State/local funding-only projects are consistent with the revenue sources expected over the same period; and
 - (2) The TIP is consistent with the conforming transportation plan such that the regional emission analysis already performed for the plan also applies to the TIP. This requires a demonstration that:

- (i) The TIP contains all projects that must be started in the TIP's timeframe in order to achieve the highway and transit system envisioned by the transportation plan in each of its horizon years;
 - (ii) All TIP projects that are regionally significant are part of the specific highway or transit system envisioned in the transportation plan's horizon years; and
 - (iii) The design concept and scope of each regionally significant project in the TIP is not significantly different from that described in the transportation plan.
- (3) If the requirements in paragraphs (b)(1) and (b)(2) of this section are not met, then:
- (i) The TIP may be modified to meet those requirements; or
 - (ii) The transportation plan must be revised so that the requirements in paragraphs (b)(1) and (b)(2) of this section are met. Once the revised plan has been found to conform, this criterion is met for the TIP with no additional analysis except a demonstration that the TIP meets the requirements of paragraphs (b)(1) and (b)(2) of this section.
- (c) For areas with a transportation plan that does not meet the content requirements of §51.404(a), a regional emission analysis must meet all of the following requirements:
- (1) The regional emission analysis shall estimate emissions from the entire transportation system, including all projects contained in the proposed TIP, the transportation plan, and all other regionally significant highway and transit projects expected in the nonattainment or maintenance area in the timeframe of the transportation plan;
 - (2) The analysis methodology shall meet the requirements of §51.452(c); and
 - (3) The regional analysis shall satisfy the requirements of §51.428(b)(1), §51.428(b)(5), and §51.428(c).

§51.432 CRITERIA AND PROCEDURES: MOTOR VEHICLE EMISSION BUDGET (PROJECT NOT FROM A PLAN AND TIP).

- (a) The project that is not from a conforming transportation plan and a conforming TIP must be consistent with the motor vehicle emission budget(s) in the applicable implementation plan (or implementation plan submission). This criterion applies during the transitional period and the control strategy and maintenance periods, except as provided in §51.464. It is satisfied if emissions from the implementation of the project, when considered with the emissions from the projects in the conforming transportation plan and TIP and all other regionally significant projects expected in the area, do not exceed the motor vehicle emission budget(s) in the applicable implementation plan (or implementation plan submission).
- (b) For areas with a conforming transportation plan that meets the content requirements of §51.404(a):
- (1) This criterion may be satisfied without additional regional analysis if the project is included in the conforming transportation plan, even if it is not specifically included in the latest conforming TIP. This requires a demonstration that:
 - (i) Allocating funds to the project will not delay the implementation of projects in the transportation plan or TIP that are necessary to achieve the highway and transit system envisioned by the transportation plan in each of its horizon years;
 - (ii) The project is not regionally significant or is part of the specific highway or transit system envisioned in the transportation plan's horizon years; and
 - (iii) The design concept and scope of the project is not significantly different from that described in the transportation plan.
 - (2) If the requirements in paragraph (b)(1) of this section are not met, a regional emission analysis must be performed as follows:
 - (i) The analysis methodology shall meet the requirements of §51.452;
 - (ii) The analysis shall estimate emissions from the transportation system, including the proposed project and all other regionally significant projects expected in the nonattainment or maintenance area in the timeframe of the transportation plan. The analysis must include emissions from all previously approved projects that were not from a transportation plan and TIP; and
 - (iii) The emission analysis shall meet the requirements of §51.428(b)(1), §51.428(b)(4), and §51.428(c).

(c) For areas with a transportation plan that does not meet the content requirements of §51.404(a), a regional emission analysis must be performed for the project together with the conforming TIP and all other regionally significant projects expected in the nonattainment or maintenance area. This criterion may be satisfied if:

- (1) The analysis methodology meets the requirements of §51.452(c);
- (2) The analysis estimates emissions from the transportation system, including the proposed project, and all other regionally significant projects expected in the nonattainment or maintenance area in the timeframe of the transportation plan; and
- (3) The regional analysis satisfies the requirements of §51.428(b)(1), §51.428(b)(5), and §51.428(c).

§51.434 CRITERIA AND PROCEDURES: LOCALIZED CO VIOLATIONS (HOT SPOTS) IN THE INTERIM PERIOD.

(a) Each FHWA/FTA project must eliminate or reduce the severity and number of localized CO violations in the area substantially affected by the project (in CO nonattainment areas). This criterion applies during the interim and transitional periods only. This criterion is satisfied with respect to existing localized CO violations if it is demonstrated that existing localized CO violations will be eliminated or reduced in severity and number as a result of the project.

(b) The demonstration must be performed according to the requirements of §51.402(c)(1)(i) and §51.454.

(c) For projects that are not of the type identified by §51.454(a), this criterion may be satisfied if consideration of local factors clearly demonstrates that existing CO violations will be eliminated or reduced in severity and number. Otherwise, a quantitative demonstration must be performed according to the requirements of §51.454(b).

§51.436 CRITERIA AND PROCEDURES: INTERIM PERIOD REDUCTIONS IN OZONE AND CO AREAS (TRANSPORTATION PLAN).

(a) A transportation plan must contribute to emission reductions in ozone and CO nonattainment areas. This criterion applies during the interim and transitional periods only, except as otherwise provided in §51.464. It applies to the net effect on emissions of all projects contained in a new or revised transportation plan. This criterion may be satisfied if a regional emission analysis is performed as described in paragraphs (b) through (f) of this section.

(b) Determine the analysis years for which emissions are to be estimated. Analysis years shall be no more than ten years apart. The first analysis year shall be no later than the first milestone year (1995 in CO nonattainment areas and 1996 in ozone nonattainment areas). The second analysis year shall be either the attainment year for the area, or if the attainment year is the same as the first analysis year or earlier, the second analysis year shall be at least five years beyond the first analysis year. The last year of the transportation plan's forecast period shall also be an analysis year.

(c) Define the 'Baseline' scenario for each of the analysis years to be the future transportation system that would result from current programs, composed of the following (except that projects listed in §51.460 and §51.462 need not be explicitly considered):

- (1) All in-place regionally significant highway and transit facilities, services and activities;
- (2) All ongoing travel demand management or transportation system management activities; and
- (3) Completion of all regionally significant projects, regardless of funding source, which are currently under construction or are undergoing right-of-way acquisition (except for hardship acquisition and protective buying); come from the first three years of the previously conforming transportation plan and/or TIP; or have completed the NEPA process. (For the first conformity determination on the transportation plan after November 24, 1993, a project may not be included in the "Baseline" scenario if one of the following major steps has not occurred within the past three years: NEPA process completion; start of final design; acquisition of a significant portion of the right-of-way; or approval of the plans,

specifications, and estimates. Such a project must be included in the "Action" scenario, as described in paragraph (d) of this section.)

(d) Define the 'Action' scenario for each of the analysis years as the transportation system that will result in that year from the implementation of the proposed transportation plan, TIPs adopted under it, and other expected regionally significant projects in the nonattainment area. It will include the following (except that projects listed in §51.460 and §51.462 need not be explicitly considered):

- (1) All facilities, services, and activities in the 'Baseline' scenario;
- (2) Completion of all TCMs and regionally significant projects (including facilities, services, and activities) specifically identified in the proposed transportation plan that will be operational or in effect in the analysis year, except that regulatory TCMs may not be assumed to begin at a future time unless the regulation is already adopted by the enforcing jurisdiction or the TCM is identified in the applicable implementation plan;
- (3) All travel demand management programs and transportation system management activities known to the MPO, but not included in the applicable implementation plan or utilizing any Federal funding or approval, which have been fully adopted and/or funded by the enforcing jurisdiction or sponsoring agency since the last conformity determination on the transportation plan;
- (4) The incremental effects of any travel demand management programs and transportation system management activities known to the MPO, but not included in the applicable implementation plan or utilizing any Federal funding or approval, which were adopted and/or funded prior to the date of the last conformity determination on the transportation plan, but which have been modified since then to be more stringent or effective;
- (5) Completion of all expected regionally significant highway and transit projects that are not from a conforming transportation plan and TIP; and
- (6) Completion of all expected regionally significant non-FHWA/FTA highway and transit projects that have clear funding sources and commitments leading toward their implementation and completion by the analysis year.

(e) Estimate the emissions predicted to result in each analysis year from travel on the transportation systems defined by the 'Baseline' and 'Action' scenarios and determine the difference in regional VOC and NOX emissions (unless the Administrator determines that additional reductions in NOX would not contribute to attainment) between the two scenarios for ozone nonattainment areas and the difference in CO emissions between the two scenarios for CO nonattainment areas. The analysis must be performed for each of the analysis years according to the requirements of §51.452. Emissions in milestone years that are between the analysis years may be determined by interpolation.

(f) This criterion is met if the regional VOC and NOX emissions (for ozone nonattainment areas) and CO emissions (for CO nonattainment areas) predicted in the 'Action' scenario are less than the emissions predicted from the 'Baseline' scenario in each analysis year, and if this can reasonably be expected to be true in the periods between the first milestone year and the analysis years. The regional analysis must show that the 'Action' scenario contributes to a reduction in emissions from the 1990 emissions by any non-zero amount.

§51.438 CRITERIA AND PROCEDURES: INTERIM PERIOD REDUCTIONS IN OZONE AND CO AREAS (TIP).

(a) A TIP must contribute to emission reductions in ozone and CO nonattainment areas. This criterion applies during the interim and transitional periods only, except as otherwise provided in §51.464. It applies to the net effect on emissions of all projects contained in a new or revised TIP. This criterion may be satisfied if a regional emission analysis is performed as described in paragraphs (b) through (f) of this section.

(b) Determine the analysis years for which emissions are to be estimated. The first analysis year shall be no later than the first milestone year (1995 in CO nonattainment areas and 1996 in ozone nonattainment areas). The analysis years shall be no more than ten years apart. The second analysis year shall be either the attainment year for the area, or if the attainment year is the same as the first analysis year or earlier, the second analysis

year shall be at least five years beyond the first analysis year. The last year of the transportation plan's forecast period shall also be an analysis year.

(c) Define the 'Baseline' scenario as the future transportation system that would result from current programs, composed of the following (except that projects listed in §51.460 and §51.462 need not be explicitly considered):

- (1) All in-place regionally significant highway and transit facilities, services and activities;
- (2) All ongoing travel demand management or transportation system management activities; and
- (3) Completion of all regionally significant projects, regardless of funding source, which are currently under construction or are undergoing right-of-way acquisition (except for hardship acquisition and protective buying); come from the first three years of the previously conforming TIP; or have completed the NEPA process. (For the first conformity determination on the TIP after November 24, 1993, a project may not be included in the "Baseline" scenario if one of the following major steps has not occurred within the past three years: NEPA process completion; start of final design; acquisition of a significant portion of the right-of-way; or approval of the plans, specifications and estimates. Such a project must be included in the "Action" scenario, as described in paragraph (d) of this section.)

(d) Define the 'Action' scenario as the future transportation system that will result from the implementation of the proposed TIP and other expected regionally significant projects in the nonattainment area in the timeframe of the transportation plan. It will include the following (except that projects listed in §51.460 and §51.462 need not be explicitly considered):

- (1) All facilities, services, and activities in the 'Baseline' scenario;
- (2) Completion of all TCMs and regionally significant projects (including facilities, services, and activities) included in the proposed TIP, except that regulatory TCMs may not be assumed to begin at a future time unless the regulation is already adopted by the enforcing jurisdiction or the TCM is contained in the applicable implementation plan;
- (3) All travel demand management programs and transportation system management activities known to the MPO, but not included in the applicable implementation plan or utilizing any Federal funding or approval, which have been fully adopted and/or funded by the enforcing jurisdiction or sponsoring agency since the last conformity determination on the TIP;
- (4) The incremental effects of any travel demand management programs and transportation system management activities known to the MPO, but not included in the applicable implementation plan or utilizing any Federal funding or approval, which were adopted and/or funded prior to the date of the last conformity determination on the TIP, but which have been modified since then to be more stringent or effective;
- (5) Completion of all expected regionally significant highway and transit projects that are not from a conforming transportation plan and TIP; and
- (6) Completion of all expected regionally significant non-FHWA/FTA highway and transit projects that have clear funding sources and commitments leading toward their implementation and completion by the analysis year.

(e) Estimate the emissions predicted to result in each analysis year from travel on the transportation systems defined by the 'Baseline' and 'Action' scenarios, and determine the difference in regional VOC and NOX emissions (unless the Administrator determines that additional reductions of NOX would not contribute to attainment) between the two scenarios for ozone nonattainment areas and the difference in CO emissions between the two scenarios for CO nonattainment areas. The analysis must be performed for each of the analysis years according to the requirements of §51.452. Emissions in milestone years that are between analysis years may be determined by interpolation.

(f) This criterion is met if the regional VOC and NOX emissions in ozone nonattainment areas and CO emissions in CO nonattainment areas predicted in the 'Action' scenario are less than the emissions predicted from the 'Baseline' scenario in each analysis year, and if this can reasonably be expected to be true in the period between the analysis years. The regional analysis must show that the 'Action' scenario contributes to a reduction in emissions from the 1990 emissions by any non-zero amount.

§51.440 CRITERIA AND PROCEDURES: INTERIM PERIOD REDUCTIONS FOR OZONE AND CO AREAS (PROJECT NOT FROM A PLAN AND TIP).

A transportation project that is not from a conforming transportation plan and TIP must contribute to emission reductions in ozone and CO nonattainment areas. This criterion applies during the interim and transitional periods only, except as otherwise provided in §51.464. This criterion is satisfied if a regional emission analysis is performed that meets the requirements of §51.436 and that includes the transportation plan and project in the 'Action' scenario. If a project, which is not from a conforming transportation plan and TIP, is a modification of a project currently in the plan or TIP, the 'Baseline' scenario must include the project with its original design concept and scope, and the 'Action' scenario must include the project with its new design concept and scope.

§51.442 CRITERIA AND PROCEDURES: INTERIM PERIOD REDUCTIONS FOR PM10 AND NO2 AREAS (TRANSPORTATION PLAN).

(a) A transportation plan must contribute to emission reductions or must not increase emissions in PM10 and NO2 nonattainment areas. This criterion applies only during the interim and transitional periods. It applies to the net effect on emissions of all projects contained in a new or revised transportation plan. This criterion may be satisfied if the requirements of either paragraph (b) or (c) of this section are met.

(b) Demonstrate that implementation of the plan and all other regionally significant projects expected in the nonattainment area will contribute to reductions in emissions of PM10 in a PM10 nonattainment area (and of each transportation-related precursor of PM10 in PM10 nonattainment areas if the EPA Regional Administrator or the Director of the State air agency has made a finding that such precursor emissions from within the nonattainment area are a significant contributor to the PM10 nonattainment problem and has so notified the MPO and DOT) and of NOX in an NO2 nonattainment area, by performing a regional emissions analysis as follows:

- (1) Determine the analysis years for which emissions are to be estimated. Analysis years shall be no more than ten years apart. The first analysis year shall be no later than 1996 (for NO2 areas) or four years and six months following the date of designation (for PM10 areas). The second analysis year shall be either the attainment year for the area, or if the attainment year is the same as the first analysis year or earlier, the second analysis year shall be at least five years beyond the first analysis year. The last year of the transportation plan's forecast period shall also be an analysis year.
- (2) Define for each of the analysis years the "Baseline" scenario, as defined in §51.436(c), and the "Action" scenario, as defined in §51.436(d).
- (3) Estimate the emissions predicted to result in each analysis year from travel on the transportation systems defined by the "Baseline" and "Action" scenarios and determine the difference between the two scenarios in regional PM10 emissions in a PM10 nonattainment area (and transportation-related precursors of PM10 in PM10 nonattainment areas if the EPA Regional Administrator or the director of the State air agency has made a finding that such precursor emissions from within the nonattainment area are a significant contributor to the PM10 nonattainment problem and has so notified the MPO and DOT) and in NOX emissions in an NO2 nonattainment area. The analysis must be performed for each of the analysis years according to the requirements of §51.452. The analysis must address the periods between the analysis years and the periods between 1990, the first milestone year (if any), and the first of the analysis years. Emissions in milestone years that are between the analysis years may be determined by interpolation.
- (4) Demonstrate that the regional PM10 emissions and PM10 precursor emissions, where applicable, (for PM10 nonattainment areas) and NOX emissions (for NO2 nonattainment areas) predicted in the 'Action' scenario are less than the emissions predicted from the 'Baseline' scenario in each analysis year, and that this can reasonably be expected to be true in the periods between the first milestone year (if any) and the analysis years.

(c) Demonstrate that when the projects in the transportation plan and all other regionally significant projects expected in the nonattainment area are implemented, the transportation system's total highway and transit emissions of PM10 in a PM10 nonattainment area (and transportation-related precursors of PM10 in PM10

nonattainment areas if the EPA Regional Administrator or the Director of the State air agency has made a finding that such precursor emissions from within the nonattainment area are a significant contributor to the PM10 nonattainment problem and has so notified the MPO and DOT) and of NOX in an NO2 nonattainment area will not be greater than baseline levels, by performing a regional emission analysis as follows:

- (1) Determine the baseline regional emissions of PM10 and PM10 precursors, where applicable (for PM10 nonattainment areas) and NOX (for NO2 nonattainment areas) from highway and transit sources. Baseline emissions are those estimated to have occurred during calendar year 1990, unless the implementation plan revision required by §51.396 of this chapter defines the baseline emissions for a PM10 area to be those occurring in a different calendar year for which a baseline emission inventory was developed for the purpose of developing a control strategy implementation plan.
- (2) Estimate the emissions of the applicable pollutant(s) from the entire transportation system, including projects in the transportation plan and TIP and all other regionally significant projects in the nonattainment area, according to the requirements of §51.452. Emissions shall be estimated for analysis years that are no more than ten years apart. The first analysis year shall be no later than 1996 (for NO2 areas) or four years and six months following the date of designation (for PM10 areas). The second analysis year shall be either the attainment year for the area, or if the attainment year is the same as the first analysis year or earlier, the second analysis year shall be at least five years beyond the first analysis year. The last year of the transportation plan's forecast period shall also be an analysis year.
- (3) Demonstrate that for each analysis year the emissions estimated in paragraph (c)(2) of this section are no greater than baseline emissions of PM10 and PM10 precursors, where applicable (for PM10 nonattainment areas) or NOX (for NO2 nonattainment areas) from highway and transit sources.

§51.444 CRITERIA AND PROCEDURES: INTERIM PERIOD REDUCTIONS FOR PM10 AND NO2 AREAS (TIP).

(a) A TIP must contribute to emission reductions or must not increase emissions in PM10 and NO2 nonattainment areas. This criterion applies only during the interim and transitional periods. It applies to the net effect on emissions of all projects contained in a new or revised TIP. This criterion may be satisfied if the requirements of either paragraph (b) or paragraph (c) of this section are met.

(b) Demonstrate that implementation of the plan and TIP and all other regionally significant projects expected in the nonattainment area will contribute to reductions in emissions of PM10 in a PM10 nonattainment area (and transportation-related precursors of PM10 in PM10 nonattainment areas if the EPA Regional Administrator or the Director of the State air agency has made a finding that such precursor emissions from within the nonattainment area are a significant contributor to the PM10 nonattainment problem and has so notified the MPO and DOT) and of NOX in an NO2 nonattainment area, by performing a regional emission analysis as follows:

- (1) Determine the analysis years for which emissions are to be estimated, according to the requirements of §51.442(b)(1).
- (2) Define for each of the analysis years the "Baseline" scenario, as defined in §51.438(c), and the "Action" scenario, as defined in §51.438(d).
- (3) Estimate the emissions predicted to result in each analysis year from travel on the transportation systems defined by the "Baseline" and "Action" scenarios as required by §51.442(b)(3), and make the demonstration required by §51.442(b)(4).

(c) Demonstrate that when the projects in the transportation plan and TIP and all other regionally significant projects expected in the area are implemented, the transportation system's total highway and transit emissions of PM10 in a PM10 nonattainment area (and transportation-related precursors of PM10 in PM10 nonattainment areas if the EPA Regional Administrator or the Director of the State air agency has made a finding that such precursor emissions from within the nonattainment area are a significant contributor to the PM10 nonattainment problem and has so notified the MPO and DOT) and of NOX in an NO2 nonattainment area will not be greater than baseline levels, by performing a regional emission analysis as required by §51.442(c)(1) through (3).

§51.446 CRITERIA AND PROCEDURES: INTERIM PERIOD REDUCTIONS FOR PM10 AND NO2 AREAS (PROJECT NOT FROM A PLAN AND TIP).

A transportation project that is not from a conforming transportation plan and TIP must contribute to emission reductions or must not increase emissions in PM10 and NO2 nonattainment areas. This criterion applies during the interim and transitional periods only. This criterion is met if a regional emission analysis is performed that meets the requirements of §51.442 and that includes the transportation plan and project in the 'Action' scenario. If the project which is not from a conforming transportation plan and TIP is a modification of a project currently in the transportation plan or TIP, and §51.442(b) is used to demonstrate satisfaction of this criterion, the 'Baseline' scenario must include the project with its original design concept and scope, and the 'Action' scenario must include the project with its new design concept and scope.

§51.448 TRANSITION FROM THE INTERIM PERIOD TO THE CONTROL STRATEGY PERIOD.

- (a) Areas that submit a control strategy implementation plan revision after November 24, 1993.
- (1) The transportation plan and TIP must be demonstrated to conform according to transitional period criteria and procedures by one year from the date the Clean Air Act requires submission of such control strategy implementation plan revision. Otherwise, the conformity status of the transportation plan and TIP will lapse, and no new project-level conformity determinations may be made.
 - (i) The conformity of new transportation plans and TIPs may be demonstrated according to Phase II interim period criteria and procedures for 90 days following submission of the control strategy implementation plan revision, provided the conformity of such transportation plans and TIPs is redetermined according to transitional period criteria and procedures as required in paragraph (a)(1) of this section.
 - (ii) Beginning 90 days after submission of the control strategy implementation plan revision, new transportation plans and TIPs shall demonstrate conformity according to transitional period criteria and procedures.
 - (2) If EPA disapproves the submitted control strategy implementation plan revision and so notifies the State, MPO, and DOT, which initiates the sanction process under Clean Air Act sections 179 or 110(m), the conformity status of the transportation plan and TIP shall lapse 120 days after EPA's disapproval, and no new project-level conformity determinations may be made. No new transportation plan, TIP, or project may be found to conform until another control strategy implementation plan revision is submitted and conformity is demonstrated according to transitional period criteria and procedures.
 - (3) Notwithstanding paragraph (a)(2) of this section, if EPA disapproves the submitted control strategy implementation plan revision but determines that the control strategy contained in the revision would have been considered approvable with respect to requirements for emission reductions if all committed measures had been submitted in enforceable form as required by Clean Air Act section 110(a)(2)(A), the provisions of paragraph (a)(1) of this section shall apply for 12 months following the date of disapproval. The conformity status of the transportation plan and TIP shall lapse 12 months following the date of disapproval unless another control strategy implementation plan revision is submitted to EPA and found to be complete.
- (b) Areas that have not submitted a control strategy implementation plan revision.
- (1) For areas whose Clean Air Act deadline for submission of the control strategy implementation plan revision is after November 24, 1993 and EPA has notified the State, MPO, and DOT of the State's failure to submit a control strategy implementation plan revision, which initiates the sanction process under Clean Air Act sections 179 or 110(m):
 - (i) No new transportation plans or TIPs may be found to conform beginning 120 days after the Clean Air Act deadline; and
 - (ii) The conformity status of the transportation plan and TIP shall lapse one year after the Clean Air Act deadline, and no new project-level conformity determinations may be made.
 - (2) For areas whose Clean Air Act deadline for submission of the control strategy implementation plan was before November 24, 1993, and EPA has made a finding of failure to submit a control strategy implementation plan revision, which initiates the sanction process under Clean Air Act sections 179 or

110(m), the following apply unless the failure has been remedied and acknowledged by a letter from the EPA Regional Administrator:

- (i) No new transportation plans or TIPs may be found to conform beginning March 24, 1994; and
- (ii) The conformity status of the transportation plan and TIP shall lapse November 25, 1994, and no new project-level conformity determinations may be made.

(c) Areas that have not submitted a complete control strategy implementation plan revision.

(1) For areas where EPA notifies the State, MPO, and DOT after November 24, 1993, that the control strategy implementation plan revision submitted by the State is incomplete, which initiates the sanction process under Clean Air Act sections 179 or 110(m), the following apply unless the failure has been remedied and acknowledged by a letter from the EPA Regional Administrator:

- (i) No new transportation plans or TIPs may be found to conform beginning 120 days after EPA's incompleteness finding; and
- (ii) The conformity status of the transportation plan and TIP shall lapse one year after the Clean Air Act deadline, and no new project-level conformity determinations may be made.
- (iii) Notwithstanding paragraphs (c)(1)(i) and (ii) of this section, if EPA notes in its incompleteness finding that the submittal would have been considered complete with respect to requirements for emission reductions if all committed measures had been submitted in enforceable form as required by Clean Air Act section 110(a)(2)(A), the provisions of paragraph (a)(1) of this section shall apply for a period of 12 months following the date of the incompleteness determination. The conformity status of the transportation plan and TIP shall lapse 12 months following the date of the incompleteness determination unless another control strategy implementation plan revision is submitted to EPA and found to be complete.

(2) For areas where EPA has determined before November 24, 1993, that the control strategy implementation plan revision is incomplete, which initiates the sanction process under Clean Air Act sections 179 or 110(m), the following apply unless the failure has been remedied and acknowledged by a letter from the EPA Regional Administrator:

- (i) No new transportation plans or TIPs may be found to conform beginning March 24, 1994; and
- (ii) The conformity status of the transportation plan and TIP shall lapse November 25, 1994, and no new project-level conformity determinations may be made.
- (iii) Notwithstanding paragraphs (c)(2)(i) and (ii) of this section, if EPA notes in its incompleteness finding that the submittal would have been considered complete with respect to requirements for emission reductions if all committed measures had been submitted in enforceable form as required by Clean Air Act section 110(a)(2)(A), the provisions of paragraph (d)(1) of this section shall apply for a period of 12 months following the date of the incompleteness determination. The conformity status of the transportation plan and TIP shall lapse 12 months following the date of the incompleteness determination unless another control strategy implementation plan revision is submitted to EPA and found to be complete.

(d) Areas that submitted a control strategy implementation plan before November 24, 1993.

(1) The transportation plan and TIP must be demonstrated to conform according to transitional period criteria and procedures by November 25, 1994. Otherwise, their conformity status will lapse and no new project-level conformity determinations may be made.

(i) The conformity of new transportation plans and TIPs may be demonstrated according to Phase II interim period criteria and procedures until February 22, 1994, provided the conformity of such transportation plans and TIPs is redetermined according to transitional period criteria and procedures as required in paragraph (d)(1) of this section.

(ii) Beginning February 22, 1994, new transportation plans and TIPs shall demonstrate conformity according to transitional period criteria and procedures.

(2) If EPA has disapproved the most recent control strategy implementation plan submission, the conformity status of the transportation plan and TIP shall lapse March 24, 1994, and no new project-level conformity determinations will be made. No new transportation plans, TIPs, or projects may be found to conform until another control strategy implementation plan revision is submitted and conformity is demonstrated according to transitional period criteria and procedures.

- (3) Notwithstanding paragraph (d)(2) of this section, if EPA has disapproved the submitted control strategy implementation plan revision but determines that the control strategy contained in the revision would have been considered approvable with respect to requirements for emission reductions if all committed measures had been submitted in enforceable form as required by Clean Air Act section 110(a)(2)(A), the provisions of paragraph (d)(1) of this section shall apply for 12 months following November 24, 1993. The conformity status of the transportation plan and TIP shall lapse 12 months following November 24, 1993, unless another control strategy implementation plan revision is submitted to EPA and found to be complete.

- (e) Projects. If the currently conforming transportation plan and TIP have not been demonstrated to conform according to transitional period criteria and procedures, the requirements of paragraphs (e)(1) and (2) of this section must be met.
 - (1) Before a FHWA/FTA project, which is regionally significant and increases single-occupant vehicle capacity (a new general purpose highway on a new location or adding general purpose lanes), may be found to conform, the State air agency must be consulted on how the emissions that the existing transportation plan and TIP's conformity determination estimates for the "Action" scenario (as required by §§51.436 through 51.446) compare to the motor vehicle emission budget in the implementation plan submission or the projected motor vehicle emission budget in the implementation plan under development.
 - (2) In the event of unresolved disputes on such project-level conformity determinations, the State air agency may escalate the issue to the Governor consistent with the procedure in §51.402(d), which applies for any State air agency comments on a conformity determination.

- (f) Redetermination of conformity of the existing transportation plan and TIP according to the transitional period criteria and procedures.
 - (1) The redetermination of the conformity of the existing transportation plan and TIP according to transitional period criteria and procedures (as required by paragraphs (a)(1) and (d)(1) of this section) does not require new emission analysis and does not have to satisfy the requirements of §§51.412 and 51.414 if:
 - (i) The control strategy implementation plan revision submitted to EPA uses the MPO's modeling of the existing transportation plan and TIP for its projections of motor vehicle emissions; and
 - (ii) The control strategy implementation plan does not include any transportation projects that are not included in the transportation plan and TIP.
 - (2) A redetermination of conformity as described in paragraph (f)(1) of this section is not considered a conformity determination for the purposes of §51.400(b)(4) or §51.400(c)(4) regarding the maximum intervals between conformity determinations. Conformity must be determined according to all the applicable criteria and procedures of §51.410 within three years of the last determination which did not rely on paragraph (f)(1) of this section.

- (g) Ozone nonattainment areas.
 - (1) The requirements of paragraph (b)(1) of this section apply if a serious or above ozone nonattainment area has not submitted the implementation plan revisions that Clean Air Act sections 182(c)(2)(a) and 182(c)(2)(b) require to be submitted to EPA November 15, 1994, even if the area has submitted the implementation plan revision which Clean Air Act section 182(b)(1) requires to be submitted to EPA November 15, 1993.
 - (2) The requirements of paragraph (b)(1) of this section apply if a moderate ozone nonattainment area that is using photochemical dispersion modeling to demonstrate the "specific annual reductions as necessary to attain" required by Clean Air Act section 182(b)(1), and which has permission from EPA to delay submission of such demonstration until November 15, 1994, does not submit such demonstration by that date. The requirements of paragraph (b)(1) of this section apply in this case even if the area has submitted the 15 percent emission reduction demonstration required by Clean Air Act section 182(b)(1).
 - (3) The requirements of paragraph (a) of this section apply when the implementation plan revisions required by Clean Air Act sections 182(c)(2)(a) and 182(c)(2)(b) are submitted.

(h) Nonattainment areas that are not required to demonstrate reasonable further progress and attainment.

If an area listed in §51.464 submits a control strategy implementation plan revision, the requirements of paragraphs (a) and (e) of this section apply. Because the areas listed in §51.464 are not required to demonstrate reasonable further progress and attainment and therefore have no Clean Air Act deadline, the provisions of paragraph (b) of this section do not apply to these areas at any time.

(i) Maintenance plans.

If a control strategy implementation plan revision is not submitted to EPA but a maintenance plan required by Clean Air Act section 175A is submitted to EPA, the requirements of paragraph (a) or (d) of this section apply, with the maintenance plan submission treated as a "control strategy implementation plan revision" for the purposes of those requirements.

§51.450 REQUIREMENTS FOR ADOPTION OR APPROVAL OF PROJECTS BY OTHER RECIPIENTS OF FUNDS DESIGNATED UNDER TITLE 23 U.S.C. OR THE FEDERAL TRANSIT ACT.

No recipient of federal funds designated under title 23 U.S.C. or the Federal Transit Act shall adopt or approve a regionally significant highway or transit project, regardless of funding source, unless there is a currently conforming transportation plan and TIP consistent with the requirements of §51.420 and the requirements of one of the following paragraphs (a) through (e) of this section are met:

- (a) The project comes from a conforming plan and program consistent with the requirements of §51.422;
- (b) The project is included in the regional emission analysis supporting the currently conforming TIP's conformity determination, even if the project is not strictly "included" in the TIP for the purposes of MPO project selection or endorsement, and the project's design concept and scope have not changed significantly from those that were included in the regional emission analysis, or in a manner that would significantly impact use of the facility;
- (c) During the control strategy or maintenance period, the project is consistent with the motor vehicle emission budget(s) in the applicable implementation plan consistent with the requirements of §51.432;
- (d) During Phase II of the interim period, the project contributes to emission reductions or does not increase emissions consistent with the requirements of §51.440 (in ozone and CO nonattainment areas) or §51.446 (in PM10 and NO2 nonattainment areas); or
- (e) During the transitional period, the project satisfies the requirements of both paragraphs (c) and (d) of this section.

§51.452 PROCEDURES FOR DETERMINING REGIONAL TRANSPORTATION-RELATED EMISSIONS.

(a) General requirements.

- (1) The regional emission analysis for the transportation plan, TIP, or project not from a conforming plan and TIP shall include all regionally significant projects expected in the nonattainment or maintenance area, including FHWA/FTA projects proposed in the transportation plan and TIP and all other regionally significant projects that are disclosed to the MPO as required by §51.402. Projects that are not regionally significant are not required to be explicitly modeled, but VMT from such projects must be estimated in accordance with reasonable professional practice. The effects of TCMs and similar projects that are not regionally significant may also be estimated in accordance with reasonable professional practice.
- (2) The emission analysis may not include for emission reduction credit any TCMs that have been delayed beyond the scheduled date(s) until such time as implementation has been assured. If the TCM has been

partially implemented and it can be demonstrated that it is providing quantifiable emission reduction benefits, the emission analysis may include that emission reduction credit.

- (3) Emission reduction credit from projects, programs, or activities that require a regulation in order to be implemented may not be included in the emission analysis unless the regulation is already adopted by the enforcing jurisdiction. Adopted regulations are required for demand management strategies for reducing emissions that are not specifically identified in the applicable implementation plan, and for control programs that are external to the transportation system itself, such as tailpipe or evaporative emission standards, limits on gasoline volatility, inspection and maintenance programs, and oxygenated or reformulated gasoline or diesel fuel. A regulatory program may also be considered to be adopted if an opt-in to a Federally enforced program has been approved by EPA, if EPA has promulgated the program (if the control program is a Federal responsibility, such as tailpipe standards), or if the Clean Air Act requires the program without need for individual State action and without any discretionary authority for EPA to set its stringency, delay its effective date, or not implement the program.
 - (4) Notwithstanding paragraph (a)(3) of this section, during the transitional period, control measures or programs that are committed to in an implementation plan submission as described in §51.428 through §51.432, but which has not received final EPA action in the form of a finding of incompleteness, approval, or disapproval may be assumed for emission reduction credit for the purpose of demonstrating that the requirements of §51.428 through §51.432 are satisfied.
 - (5) A regional emission analysis for the purpose of satisfying the requirements of §51.436 through §51.440 may account for the programs in paragraph (a)(4) of this section, but the same assumptions about these programs shall be used for both the "Baseline" and "Action" scenarios.
- (b) Serious, severe, and extreme ozone nonattainment areas and serious carbon monoxide areas after January 1, 1995. Estimates of regional transportation-related emissions used to support conformity determinations must be made according to procedures that meet the requirements in paragraphs (b)(1) through (5) of this section.
- (1) A network-based transportation demand model or models relating travel demand and transportation system performance to land-use patterns, population demographics, employment, transportation infrastructure, and transportation policies must be used to estimate travel within the metropolitan planning area of the nonattainment area. Such a model shall possess the following attributes:
 - (i) The modeling methods and the functional relationships used in the model(s) shall in all respects be in accordance with acceptable professional practice and reasonable for purposes of emission estimation;
 - (ii) The network-based model(s) must be validated against ground counts for a base year that is not more than 10 years prior to the date of the conformity determination. Land use, population, and other inputs must be based on the best available information and appropriate to the validation base year;
 - (iii) For peak-hour or peak-period traffic assignments, a capacity sensitive assignment methodology must be used;
 - (iv) Zone-to-zone travel times used to distribute trips between origin and destination pairs must be in reasonable agreement with the travel times that result from the process of assignment of trips to network links. Where use of transit currently is anticipated to be a significant factor in satisfying transportation demand, these times should also be used for modeling mode splits;
 - (v) Free-flow speeds on network links shall be based on empirical observations;
 - (vi) Peak and off-peak travel demand and travel times must be provided;
 - (vii) Trip distribution and mode choice must be sensitive to pricing, where pricing is a significant factor, if the network model is capable of such determinations and the necessary information is available;
 - (viii) The model(s) must utilize and document a logical correspondence between the assumed scenario of land development and use and the future transportation system for which emissions are being estimated. Reliance on a formal land-use model is not specifically required but is encouraged;
 - (ix) A dependence of trip generation on the accessibility of destinations via the transportation system (including pricing) is strongly encouraged but not specifically required, unless the network model is capable of such determinations and the necessary information is available;
 - (x) A dependence of regional economic and population growth on the accessibility of destinations via the transportation system is strongly encouraged but not specifically required, unless the network model is capable of such determinations and the necessary information is available; and

- (xi) Consideration of emission increases from construction-related congestion is not specifically required.
 - (2) Highway Performance Monitoring System (HPMS) estimates of vehicle miles traveled shall be considered the primary measure of vehicle miles traveled within the portion of the nonattainment or maintenance area and for the functional classes of roadways included in HPMS, for urban areas that are sampled on a separate urban area basis. A factor (or factors) shall be developed to reconcile and calibrate the network-based model estimates of vehicle miles traveled in the base year of its validation to the HPMS estimates for the same period, and these factors shall be applied to model estimates of future vehicle miles traveled. In this factoring process, consideration will be given to differences in the facility coverage of the HPMS and the modeled network description. Departure from these procedures is permitted with the concurrence of DOT and EPA.
 - (3) Reasonable methods shall be used to estimate nonattainment area vehicle travel on off-network roadways within the urban transportation planning area, and on roadways outside the urban transportation planning area.
 - (4) Reasonable methods in accordance with good practice must be used to estimate traffic speeds and delays in a manner that is sensitive to the estimated volume of travel on each roadway segment represented in the network model.
 - (5) Ambient temperatures shall be consistent with those used to establish the emission budget in the applicable implementation plan. Factors other than temperatures, for example, the fraction of travel in a hot stabilized engine mode, may be modified after interagency consultation according to §51.402 if the newer estimates incorporate additional or more geographically specific information or represent a logically estimated trend in such factors beyond the period considered in the applicable implementation plan.
- (c) Areas that are not serious, severe, or extreme ozone nonattainment areas or serious carbon monoxide areas, or before January 1, 1995.
- (1) Procedures that satisfy some or all of the requirements of paragraph (a) of this section shall be used in all areas not subject to paragraph (a) of this section in which those procedures have been the previous practice of the MPO.
 - (2) Regional emissions may be estimated by methods that do not explicitly or comprehensively account for the influence of land use and transportation infrastructure on vehicle miles traveled and traffic speeds and congestion. Such methods must account for VMT growth by extrapolating historical VMT or projecting future VMT by considering growth in population and historical growth trends for vehicle miles traveled per person. These methods must also consider future economic activity, transit alternatives, and transportation system policies.
- (d) Projects not from a conforming plan and TIP in isolated rural nonattainment and maintenance areas. This paragraph applies to any nonattainment or maintenance area or any portion thereof that does not have a metropolitan transportation plan or TIP and whose projects are not part of the emission analysis of any MPO's metropolitan transportation plan or TIP (because the nonattainment or maintenance area or portion thereof does not contain a metropolitan planning area or portion of a metropolitan planning area and is not part of a Metropolitan Statistical Area or Consolidated Metropolitan Statistical Area which is or contains a nonattainment or maintenance area).
- (1) Conformity demonstrations for projects in these areas may satisfy the requirements of §51.432, §51.440, and §51.446 with one regional emission analysis that includes all the regionally significant projects in the nonattainment or maintenance area (or portion thereof).
 - (2) The requirements of §51.432 shall be satisfied according to the procedures in §51.432(c), with references to the "transportation plan" taken to mean the statewide transportation plan.
 - (3) The requirements of §51.440 and §51.446 that reference "transportation plan" or "TIP" shall be taken to mean those projects in the statewide transportation plan or statewide TIP that are in the nonattainment or maintenance area (or portion thereof).
 - (4) The requirement of §51.450(b) shall be satisfied if:
 - (i) The project is included in the regional emission analysis that includes all regionally significant highway and transportation projects in the nonattainment or maintenance area (or portion thereof) and supports the most recent conformity determination made according to the requirements of §51.432,

§51.440, or §51.446 (as modified by paragraphs (d)(2) and (d)(3) of this section), as appropriate for the time period and pollutant; and

(ii) The project's design concept and scope have not changed significantly from those that were included in the regional emission analysis, or in a manner which would significantly impact use of the facility.

(e) PM10 from construction-related fugitive dust.

(1) For areas in which the implementation plan does not identify construction-related fugitive PM10 as a contributor to the nonattainment problem, the fugitive PM10 emissions associated with highway and transit project construction are not required to be considered in the regional emission analysis.

(2) In PM10 nonattainment and maintenance areas with implementation plans that identify construction-related fugitive PM10 as a contributor to the nonattainment problem, the regional PM10 emissions analysis shall consider construction-related fugitive PM10 and shall account for the level of construction activity, the fugitive PM10 control measures in the applicable implementation plan, and the dust-producing capacity of the proposed activities.

§51.454 PROCEDURES FOR DETERMINING LOCALIZED CO AND PM10 CONCENTRATIONS (HOT-SPOT ANALYSIS).

(a) In the following cases, CO hot-spot analyses must be based on the applicable air quality models, data bases, and other requirements specified in 40 CFR Part 51, Appendix W ("Guideline on Air Quality Models (Revised)" (1988), supplement A (1987) and supplement B (1993), EPA publication no. 450/2-78-027R), unless, after the interagency consultation process described in §51.402 and with the approval of the EPA Regional Administrator, these models, data bases, and other requirements are determined to be inappropriate:

(1) For projects in or affecting locations, areas, or categories of sites that are identified in the applicable implementation plan as sites of current violation or possible current violation;

(2) For those intersections at Level-of-Service D, E, or F, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes related to a new project in the vicinity;

(3) For any project involving or affecting any of the intersections that the applicable implementation plan identifies as the top three intersections in the nonattainment or maintenance area based on the highest traffic volumes;

(4) For any project involving or affecting any of the intersections which the applicable implementation plan identifies as the top three intersections in the nonattainment or maintenance area based on the worst Level-of-Service; and

(5) Where use of the "Guideline" models is practicable and reasonable given the potential for violations.

(b) In cases other than those described in paragraph (a) of this section, other quantitative methods may be used if they represent reasonable and common professional practice.

(c) CO hot-spot analyses must include the entire project, and may be performed only after the major design features that will significantly impact CO concentrations have been identified. The background concentration can be estimated using the ratio of future to current traffic multiplied by the ratio of future to current emission factors.

(d) PM10 hot-spot analysis must be performed for projects that are located at sites at which violations have been verified by monitoring, and at sites that have essentially identical vehicle and roadway emission and dispersion characteristics (including sites near one at which a violation has been monitored). The projects that require PM-10 hot-spot analysis shall be determined through the interagency consultation process required in §51.402. In PM-10 nonattainment and maintenance areas, new or expanded bus and rail terminals and transfer points that increase the number of diesel vehicles congregating at a single location require hot-spot analysis. DOT may choose to make a categorical conformity determination on bus and rail terminals or transfer points based on appropriate modeling of various terminal sizes, configurations, and activity levels. The requirements of this paragraph for quantitative hot-spot analysis will not take effect until EPA releases modeling guidance on this subject and announces in the Federal Register that these requirements are in effect.

(e) Hot-spot analysis assumptions must be consistent with those in the regional emission analysis for those inputs which are required for both analyses.

(f) PM10 or CO mitigation or control measures shall be assumed in the hot-spot analysis only where there are written commitments from the project sponsor and/or operator to the implementation of such measures, as required by §51.458(a).

(g) CO and PM10 hot-spot analyses are not required to consider construction-related activities that cause temporary increases in emissions. Each site that is affected by construction-related activities shall be considered separately, using established "Guideline" methods. Temporary increases are defined as those that occur only during the construction phase and last five years or less at any individual site.

§51.456 USING THE MOTOR VEHICLE EMISSION BUDGET IN THE APPLICABLE IMPLEMENTATION PLAN (OR IMPLEMENTATION PLAN SUBMISSION).

(a) In interpreting an applicable implementation plan (or implementation plan submission) with respect to its motor vehicle emission budget(s), the MPO and DOT may not infer additions to the budget(s) that are not explicitly intended by the implementation plan (or submission). Unless the implementation plan explicitly quantifies the amount by which motor vehicle emissions could be higher while still allowing a demonstration of compliance with the milestone, attainment, or maintenance requirement and explicitly states an intent that some or all of this additional amount should be available to the MPO and DOT in the emission budget for conformity purposes, the MPO may not interpret the budget to be higher than the implementation plan's estimate of future emissions. This applies in particular to applicable implementation plans (or submissions) which demonstrate that after implementation of control measures in the implementation plan:

- (1) Emissions from all sources will be less than the total emissions that would be consistent with a required demonstration of an emission reduction milestone;
- (2) Emissions from all sources will result in achieving attainment prior to the attainment deadline and/or ambient concentrations in the attainment deadline year will be lower than needed to demonstrate attainment; or
- (3) Emissions will be lower than needed to provide for continued maintenance.

(b) If an applicable implementation plan submitted before November 24, 1993, demonstrates that emissions from all sources will be less than the total emissions that would be consistent with attainment and quantifies that "safety margin," the State may submit a SIP revision that assigns some or all of this safety margin to highway and transit mobile sources for the purposes of conformity. Such a SIP revision, once it is endorsed by the Governor and has been subject to a public hearing, may be used for the purposes of transportation conformity before it is approved by EPA.

(c) A conformity demonstration shall not trade emissions among budgets that the applicable implementation plan (or implementation plan submission) allocates for different pollutants or precursors, or among budgets allocated to motor vehicles and other sources, without a SIP revision or a SIP that establishes mechanisms for such trades.

(d) If the applicable implementation plan (or implementation plan submission) estimates future emissions by geographic subarea of the nonattainment area, the MPO and DOT are not required to consider this to establish subarea budgets, unless the applicable implementation plan (or implementation plan submission) explicitly indicates an intent to create such subarea budgets for the purposes of conformity.

(e) If a nonattainment area includes more than one MPO, the SIP may establish motor vehicle emission budgets for each MPO, or else the MPOs must collectively make a conformity determination for the entire nonattainment area.

§51.458 ENFORCEABILITY OF DESIGN CONCEPT AND SCOPE AND PROJECT-LEVEL MITIGATION AND CONTROL MEASURES.

(a) Prior to determining that a transportation project is in conformity, the MPO, other recipient of funds designated under title 23 U.S.C. or the Federal Transit Act, FHWA, or FTA must obtain from the project sponsor and/or operator written commitments to implement in the construction of the project and operation of the resulting facility or service any project-level mitigation or control measures that are identified as conditions for NEPA process completion with respect to local PM10 or CO impacts. Before making conformity determinations written commitments must also be obtained for project-level mitigation or control measures that are conditions for making conformity determinations for a transportation plan or TIP and included in the project design concept and scope that is used in the regional emission analysis required by §51.428 through §51.432 and §51.436-§51.440 or used in the project-level hot-spot analysis required by §51.424 and §51.434.

(b) Project sponsors voluntarily committing to mitigation measures to facilitate positive conformity determinations must comply with the obligations of such commitments.

(c) The implementation plan revision required in §51.396 of this chapter shall provide that written commitments to mitigation measures must be obtained prior to a positive conformity determination and that project sponsors must comply with such commitments.

(d) During the control strategy and maintenance periods, if the MPO or project sponsor believes the mitigation or control measure is no longer necessary for conformity, the project sponsor or operator may be relieved of its obligation to implement the mitigation or control measure if it can demonstrate that the requirements of §51.424, §51.428, and §51.430 are satisfied without the mitigation or control measure, and so notifies the agencies involved in the interagency consultation process required under §51.402. The MPO and DOT must confirm that the transportation plan and TIP still satisfy the requirements of §51.428 and §51.430 and that the project still satisfies the requirements of §51.424, and therefore that the conformity determinations for the transportation plan, TIP, and project are still valid.

§51.460 EXEMPT PROJECTS.

Notwithstanding the other requirements of this subpart, highway and transit projects of the types listed in Table 2 are exempt from the requirement that a conformity determination be made. Such projects may proceed toward implementation even in the absence of a conforming transportation plan and TIP. A particular action of the type listed in Table 2 is not exempt if the MPO in consultation with other agencies (see §51.402(c)(1)(iii)), the EPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur that it has potentially adverse emissions impacts for any reason. States and MPOs must ensure that exempt projects do not interfere with TCM implementation.

**Table 2
Exempt Projects**

SAFETY

- Railroad/highway crossing.
- Hazard elimination program.
- Safer non-Federal-aid system roads.
- Shoulder improvements.
- Increasing sight distance.
- Safety improvement program.
- Traffic control devices and operating assistance other than signalization projects.
- Railroad/highway crossing warning devices.
- Guardrails, median barriers, crash cushions.
- Pavement resurfacing and/or rehabilitation.

Pavement marking demonstration.
Emergency relief (23 U.S.C. 125).
Fencing.
Skid treatments.
Safety roadside rest areas.
Adding medians.
Truck climbing lanes outside the urbanized area.
Lighting improvements.
Widening narrow pavements or reconstructing bridges (no additional travel lanes).
Emergency truck pullovers.

MASS TRANSIT

Operating assistance to transit agencies.
Purchase of support vehicles.
Rehabilitation of transit vehicles¹
Purchase of office, shop, and operating equipment for existing facilities.
Purchase of operating equipment for vehicles (e.g., radios, fareboxes, lifts, etc.).
Construction or renovation of power, signal, and communications systems.
Construction of small passenger shelters and information kiosks.
Reconstruction or renovation of transit buildings and structures (e.g., rail or bus buildings, storage and maintenance facilities, stations, terminals, and ancillary structures).
Rehabilitation or reconstruction of track structures, track, and trackbed in existing rights-of-way.
Purchase of new buses and rail cars to replace existing vehicles or for minor expansions of the fleet.²
Construction of new bus or rail storage/maintenance facilities categorically excluded in 23 CFR part 771.

AIR QUALITY

Continuation of ride-sharing and van-pooling promotion activities at current levels.
Bicycle and pedestrian facilities.

OTHER

Specific activities that do not involve or lead directly to construction, such as:
 Planning and technical studies.
 Grants for training and research programs.
 Planning activities conducted pursuant to titles 23 and 49 U.S.C.
 Federal-aid systems revisions.
Engineering to assess social, economic, and environmental effects of the proposed action or alternatives to that action.
Noise attenuation.
Advance land acquisitions (23 CFR part 712 or 23 CFR part 771).
Acquisition of scenic easements.
Plantings, landscaping, etc.
Sign removal.
Directional and informational signs.

¹ In PM10 nonattainment or maintenance areas, such projects are exempt only if they are in compliance with control measures in the applicable implementation plan.

² In PM10 nonattainment or maintenance areas, such projects are exempt only if they are in compliance with control measures in the applicable implementation plan.

Transportation enhancement activities (except rehabilitation and operation of historic transportation buildings, structures, or facilities).

Repair of damage caused by natural disasters, civil unrest, or terrorist acts, except projects involving substantial functional, locational or capacity changes.

§51.462 PROJECTS EXEMPT FROM REGIONAL EMISSION ANALYSES.

Notwithstanding the other requirements of this subpart, highway and transit projects of the types listed in Table 3 are exempt from regional emission analysis requirements. The local effects of these projects with respect to CO or PM10 concentrations must be considered to determine if a hot-spot analysis is required prior to making a project-level conformity determination. These projects may then proceed to the project development process even in the absence of a conforming transportation plan and TIP. A particular action of the type listed in Table 3 is not exempt from regional emission analysis if the MPO in consultation with other agencies (see §51.402(c)(1)(iii)), the EPA, and the FHWA (in the case of a highway project) or the FTA (in the case of a transit project) concur that it has potential regional impacts for any reason.

Table 3
Projects Exempt From Regional Emissions Analyses

Intersection channelization projects
Intersection signalization projects at individual intersections
Interchange reconfiguration projects
Changes in vertical and horizontal alignment
Truck size and weight inspection stations
Bus terminals and transfer points

§51.464 SPECIAL PROVISIONS FOR NONATTAINMENT AREAS THAT ARE NOT REQUIRED TO DEMONSTRATE REASONABLE FURTHER PROGRESS AND ATTAINMENT.

(a) Application.

This section applies in the following areas:

- (1) Rural transport ozone nonattainment areas;
- (2) Marginal ozone areas;
- (3) Submarginal ozone areas;
- (4) Transitional ozone areas;
- (5) Incomplete data ozone areas;
- (6) Moderate CO areas with a design value of 12.7 ppm or less; and
- (7) Not classified CO areas.

(b) Default conformity procedures.

The criteria and procedures in §51.436 through §51.440 will remain in effect throughout the control strategy period for transportation plans, TIPs, and projects (not from a conforming plan and TIP) in lieu of the procedures in §51.428 through §51.432, except as otherwise provided in paragraph (c) of this section.

(c) Optional conformity procedures.

The State or MPO may voluntarily develop an attainment demonstration and corresponding motor vehicle emission budget like those required in areas with higher nonattainment classifications. In this case, the State must submit an implementation plan revision that contains that budget and attainment demonstration. Once EPA has approved this implementation plan revision, the procedures in §51.428 through §51.432 apply in lieu of the procedures in §51.436 through §51.440.

Appendix B

EPA's Request for Comments on the Conformity NPRM

Issues on which United States Environmental Protection Agency (USEPA) is Requesting Comments (revised from 11/18/92 version):

1. Would it be appropriate to apply conformity, in however a limited application, to changes in transit routes, fares, tolls and other highway and transit system operational policies?
2. What is the acceptable form of state conformity criteria and procedures, since the criteria must be legally enforceable? For example, should it be a state statute or a State agency rule that is binding on Metropolitan Planning Organizations (MPOs)?
3. Should USEPA require: 1) consultation on the choice of the models and associated methodologies to be used in hot-spot analyses and regional air quality modeling; or 2) concurrence with these decisions?
4. What consequences, if any, should the state implementation plan (SIP) impose if the implementation plan's consultation process is not observed by the MPO, or state and local air quality agencies?
5. Should the NPRM specifically require the U.S. Department of Transportation (USDOT) to consider USEPA's (or the state air quality agencies') comments on proposed conformity determinations and notify USEPA (or the state air agencies) of the disposition of its comments before taking final action on the conformity determination? [The preamble notes that doing this would make the NPRM consistent with USDOT's January 26, 1981, interim final rule on conformity (46 FR 8426)].
6. Regarding the need to make a new conformity determination when a SIP is revised, should the triggering event be USEPA approval of the SIP revision or the Governor's submission of the SIP revision to USEPA? The NPRM proposal makes it USEPA approval, since that gives the revision the force of Federal law.
7. If a transportation control measure (TCM) falls behind schedule, should the state submit a SIP revision with a new schedule for the implementation of the TCM and the required demonstration that adequate legal authority and resources to carry it out exist?
8. Would other approaches or definitions, other than those discussed on pages 64 and 65 of the preamble, provide a reasonable interpretation of "new" violations, which would differentiate them from those considered to be a relocation and reduction of an existing violation?
9. What evidence must be developed and considered when determining that no new violation will be caused or existing ones worsened in areas with fugitive dust problems?
10. Should USDOT be allowed to make a categorical conformity determination, based on appropriate modeling of various bus terminal sizes and configurations?
11. Should USEPA require quantitative analyses for potential PM₁₀ hot spot areas for violations that have been verified, and at other locations that have identical dispersion conditions and diesel vehicle traffic?
12. Should there be a distinction in the regional emission analysis requirements between specific transportation plans and non-specific transportation plans, since metropolitan planning under the Intermodal Surface Transportation Efficiency Act (ISTEA) will require further transportation plans to define project design concept and scope sufficient to determine conformity?
13. Until emission budgets are in effect, what should USEPA do to assure that emissions do not increase dramatically? An example given in the preamble suggests placing a cap on CO and ozone precursors during the

interim period at the 1990 base-year inventory levels, with no credit given for tailpipe standards. USEPA notes that some of these approaches could have drastic implications.

14. Given the lack of good models for NO_x and PM₁₀ and the fact that while these pollutants may increase with increasing speeds these increases may be offset with fleet turnover and paving or cleaning roads, is EPA's interim approach of limiting PM₁₀ and NO_x levels to 1990 levels appropriate?
15. Regarding the previous issue, should years other than 1990 be used as a baseline, e.g., the year(s) of the ambient data upon which the designation (or classification) for PM₁₀ and NO_x levels to 1990 appropriate?
16. Are the proposed procedures for transportation modeling (i.e., network modeling in serious CO and serious, severe, and extreme ozone areas), sufficient for use in estimating emissions and ambient concentrations?
17. Should serious PM₁₀ nonattainment areas be required to use network models and develop specific transportation plans?
18. Do the air quality benefits from using network models to perform conformity analyses for PM₁₀ justify the financial investment that would be required?
19. Should USEPA more clearly define when and how quantitative hot-spot modeling should be performed, e.g., should cutoffs be proposed in terms of geography, size, or other characteristics above which modeling should be required?
20. Should any specific procedures or evidence be considered for qualitative hot-spot analysis?

Appendix C

A Summary of Relevant Comments Submitted to the Docket

The U.S. Environmental Protection Agency (USEPA) docket for the transportation conformity rule (Rule) contained a stack approximately three-feet high of comments submitted by interested state and local agencies, businesses, public interest groups, and members of the general public. During a one-day period, Institute of Transportation Studies-Davis (ITS-Davis) staff visited Washington, DC, and screened all of the public comments submitted. The docket contained form letters as well as copies of previously-published research papers that were not reviewed. Approximately 300 pages of comments were copied and reviewed in detail by ITS-Davis staff. The major issues associated with the applicability of the Rule and modeling requirements are summarized below:

Applicability

Many comments assert that the definition of regionally significant is not specific enough. This definition is vital because it could include or not include many types of projects, including some non-transportation projects. The Chicago Area Transportation Study (IV-D-173) stated that this determination was dependent on "a region's geographic and economic scales, as well as a project's functional context in the urban region." Many agreed that the region that a project is located in greatly influences its level of significance. Thus, in defining an entire transportation system, system components includes could be crucial to the modeling process.

Many of the docket comments on the proposed rules in the January 11, 1993, Federal Register address how to define the transportation planning system. The Orange County Environmental Management Agency (II-D-9) stated that the Rule did not stress comprehensive planning and institutional complexities; comprehensive planning means considering the entire system and not simply isolating individual projects. Thus, the overall regional benefits of some projects outweigh the negatives (e.g., possible worsening of some areas, such as hotspots). Since in larger areas, more than one air basin is in a metropolitan planning organization's (MPO) jurisdiction, many thought that comprehensive planning and the transportation system was very important to define and in deciding regional significance.

Some thought that it was vital to include the transportation effects of rail, ports, and air modes in the system since the Intermodal Surface Transportation Efficiency Act (ISTEA) requires transportation plans to include all modes of transportation within metropolitan areas. The Environmental Defense Fund (EDF) presentation on January 29, 1993, (IV-D-04) stated that an integrated regional transportation system would include sources of pollution such as planes, trains, and ships and the expansion of such sources (i.e., airports, port facilities, etc.).

Many responses to the guidelines indicated that the relationship of ISTEA to the Clean Air Act (CAA) and the conformity guidelines is important. Since ISTEA provides a large portion of funding for MPOs, long-range plans and transportation improvement programs (TIPs) must have "adequate funding available to carry out the projects contained therein." ISTEA is the source of funding for most of the projects in a transportation plan and TIP. The connection between funding, plans, and long-range plans should be consistent.

As written, the final Rule applies to nonattainment areas and maintenance areas. Many commenters responded that they did not think that it was feasible to consider applying conformity to attainment areas for budget reasons. Many smaller MPOs probably do not have the data nor resources to meet the conformity requirements. Many feel that rural areas similarly do not have the resources. Others say that the conformity guidelines should apply to all areas since that is what the CAA was intended to do. Some suggest that those attainment areas that are surrounded or surround nonattainment areas should be subjected to conformity. Others suggest that those modeled far into the future as attainment need not be subjected to conformity.

NO_x

The USEPA asked about the appropriateness of keeping NO_x levels at 1990 levels instead of meeting any reductions. Many comments expressed concern over this since NO_x is a precursor to ozone, and this is not consistent with meeting the CAA goals in reference to ozone. The Environmental Law Clinic expressed concern that the draft conformity regulations did not reflect the importance of NO_x, citing *Rethinking the Ozone Problem* by the National Resource Council. They specifically cited the finding that NO_x is more important in reducing ozone than a reduction in Volatile Organic Compounds (VOCs), thus it is important that there is “explicit inclusion of NO_x in the regulations governing conformity determination emission impact analyses.” Others cited that NO_x increases with higher speeds and that controlling for NO_x would restrict meeting air quality standards for other pollutants.

VMT Tracking

The use of the Highway Performance Monitoring System (HPMS) data to derive the vehicle miles traveled (VMT) for a system was questioned. For many areas, the HPMS data are not fully accurate. The Chicago Area Transportation Study stated that one specific modeling approach should not be required for all MPOs. “Factoring modeled VMT figures to HPMS volumes ... would assume far more accuracy in the HPMS files than is warranted.” The Metropolitan Transportation Commission (MTC) comment was similar, as they supported alternative methods to calculate VMT because they question the statistical accuracy of the database. “In the MTC region, the network model will provide the most reliable approach to forecasting VMT growth.” The California Department of Transportation (Caltrans) made a similar comment, stating that “in California many regions have sufficiently accurate systems in place other than the HPMS.”

PM₁₀ Modeling

The USEPA specifically asked that comments be submitted regarding which PM₁₀ models should be used in conformity determinations. The overwhelming response was that accurate PM₁₀ models are not currently available, and that before any requirements for PM₁₀ modeling are made, a good model must be developed. Some comments suggested that PM₁₀ need not be modeled since the transportation sector contributes very little to PM₁₀ emissions.

CO Modeling

In modeling hotspots, most comments were directed at the USEPA giving better modeling guidance. Others questioned the accuracy of such microscale models. Microscale model accuracy has significant limitations that need to be recognized. Orange County (II-D-09) thought that CO emissions for hot spot analysis based on fleet average characteristics were not appropriate and cited other problems such as inclusion of cold starts and “artificial meteorological data.”

Emission factors and their derivation were questioned by several different organizations, especially in California. General concerns were over the vehicle speed and emission relationship, if the vehicles tested for emission modeling represented the vehicles on the road, what happens to vehicles and their emissions after several years (maintenance), and if a group of high emitting vehicles are contributing a large amount of the emissions?

Brian Smith (Caltrans) (IV-D-15) in his testimony stated:

“One of the underlying issues though out the conformity determination process is the assumption that our technical and analytic methodologies and capabilities are adequate to perform a reliable conformity determination. Similarly, there are differences among regions in terms of technical and analytic capabilities that may result in different conformity findings. We need to recognize that as our technical

and analytic capabilities improve, revisions to earlier findings may be necessary. The consequences of this evolutionary process on conformity determination and emission schedules is not clear, particularly in terms of emission reduction schedules and sanctions.”

The North Carolina Department of Transportation (DOT) (IV-D-41) suggested that many of the incorrect assumptions of the effect of highway improvements on air quality are due to structure of the MOBILE model. Some of the potential factors being worked on by USEPA address driving cycles and relations of emissions to road type, average speeds, and cruise speed. By addressing these issues they feel that the “true impacts of transportation system improvements” can be modeled, and this may “dispel some of the current widespread misconceptions among many groups.”

The Minnesota Pollution Control Agency (IV-D-67) recognized that:

Air quality models still do not predict well and are not accurate past ten years. (The Transportation and Air Quality Committee of the Transportation Research Board of the National Research Council recently noted that better models remain a major research challenge.)

The Wasatch Front Regional Council (IV-D-68) noted:

“Our main concerns with regard to conformity are related to accuracy restrictions of the (travel demand and emission) models. The transportation planning process, clearly, must be better linked to the air quality planning process. Unfortunately, we believe that there has not been a distinction made between procedural improvements and technical improvements. Our comments, in general, are related to the difficulty in interpreting procedurally-based rules in the technical framework of transportation planning, which includes disruptions that may be caused by interpreting and documenting unclear procedures as opposed to methodologically improving the transportation models and transportation planning process to better integrate air quality concerns.

The reliance on models has clear advantages over trial and error across the population. On the other hand, transportation models have inherent inaccuracies. The combined inaccuracies of the travel demand models and the emission models is a cause of concern for certain types of analysis. There appears to be a strong reliance on travel demand and emission models in a relative short-time period. It will take our area more than two years to complete a home interview survey to improve our models to be better responsive to demand management and related air quality issues. Improvements to speed estimates, particularly at the high and low-speed ranges, as well as concerns about the emission estimates for steady flow speed conditions, are only beginning to receive national research attention.”

Californians for Better Transportation (IV-D-72) recognized the limitations of the models:

“Transportation and air quality models are simply incapable of yielding reliable data of the type required by this rule, especially for individual projects. Further, the conformity analyses in the recent past have consistently indicated that the impact of transportation plans and programs on air quality are extremely marginal. Measured differences between the build and no-build transportation alternatives mandated by the rules consistently fall well below the threshold of the reliability for regional transportation and air quality models.”

The Minnesota DOT (IV-D-76) noted that “a continuing constraint in air quality analysis is the assumption that transportation models are specific and precise enough to provide precise emission data. Transportation models are most useful for long-range guidances, and were not intended to provide for specificity.” The Louisiana DOTD (IV-D-84) state similarly that “care should be taken to understand the limitations of the transportation models to estimate mobile emissions to the degree of accuracy that may be implied in the rules.”

Appendix D

A Summary of Applicable CEQA Provisions

Under the California Environmental Quality Act (CEQA), the lead agency has 30 days from the submission of a project application to determine if the project is ministerial or discretionary, exempt from CEQA, or will have a potentially significant environmental effect. As soon as the lead agency has determined that an initial study is required, they must consult informally with all responsible agencies that will be affected to obtain recommendations as to whether an environmental impact report (EIR) or a negative declaration (i.e., no significant impact) must be prepared.

It is the lead agency's obligation to provide public notice that it intends to adopt a negative declaration (ND) to all organizations and individuals who requested notice. The lead agency must also give notice of its intent by publicizing the decision either: 1) in a newspaper of general circulation in the area affected by the proposed project, 2) by a posting on and off-site of the area where the project will be located, or 3) by direct mailing to owners of property contiguous to the project (Cal. Code Regs., tit. 14, §15072). When a ND is prepared and submitted to the State Clearinghouse, the public must be provided a 30-day period to submit comments to which the lead agency must respond (PRC §21091, §21092) unless a shorter period is approved by the State Clearinghouse (Cal. Code Regs., tit. 14, §15073). The decision to certify the ND can only be made if there is no substantial evidence in the record that the project will have a significant effect on the environment (Cal. Code Regs., tit. 14, §15074(b)). If there is disagreement between experts over the "significance" of an environmental effect, the lead agency is required to treat it as significant (Cal. Code Regs., tit. 14, §15064(h)(2)), requiring that an EIR be prepared.

If an EIR is to be prepared, the lead agency shall not exceed one year for completing and certifying the EIR (PRC §21100.2) and must meet a shorter deadline if it is required by the CEQA guidelines or the lead agency. If a project may affect highways or other facilities under the jurisdiction of the California Department of Transportation (Caltrans), the lead agency shall call at least one scoping meeting within 30 days of receiving a request from Caltrans to hold such a scoping meeting. At this juncture, Caltrans would be requested to specify the scope and content of the environmental information necessary and germane to its statutory responsibilities under conformity that shall be included in the EIR (PRC §21080.4(a)).

Under CEQA, primary and secondary impacts must be considered in the preparation of the EIR, where secondary impacts may be several steps removed from the project along the cause-effect chain (Cal. Code Regs., tit. 14, §15064(d)). Under both the National Environmental Policy Act (NEPA) and CEQA, growth inducing impacts must be considered in the Environmental Impact Statement (EIS)/EIR (PRC §21100; Cal. Code Regs., tit. 14, §1500.8(a)(3)(ii)). Cumulative impacts must be addressed in the EIR, which prevents piece-meal development from circumventing the CEQA process (Cal. Code Regs., tit. 14, §15130, PRC §21083(b)).

The EIR must discuss any inconsistencies between the project and applicable general and regional plans (Cal. Code Regs., tit. 14, §15125(b)). Similarly, this CEQA requirement could be extended to the reconciliation of the project with long-range transportation and air quality plans, given the specific mandates of the Rule.

A complete and comprehensive description of the project and its environment must be provided in the EIR (Cal. Code Regs., tit. 14, §15124). Furthermore, the EIR must also contain all relevant technical data, plots, plans, maps, diagrams, and similar relevant information sufficient to permit the full assessment of significant environmental impacts by reviewing agencies and the public (Cal. Code Regs., tit. 14, §15147).

The EIR must acknowledge any uncertainties that are inherent in the document. Because drafting an EIR involves some degree of forecasting and inherent uncertainty, the agency must use its best efforts to qualify, quantify, and disclose all of the uncertainties that it reasonably can (Cal. Code Regs., tit. 14, §15142, 15144).

When the draft EIR has been completed, a notice of completion is filed with the California Governor's Office of Planning and Research (OPR), and the lead agency provides public notice of the availability of the draft (Cal.

Code Regs., tit. 14, §15087(a)). A minimum public comment period of 30 days must then be undertaken (PRC §21091), or a minimum 45-day comment period, if the draft EIR is prepared by a state agency that is the lead agency or the responsible trustee for the agency preparing the EIR, or if the document also serves as the NEPA document (Cal. Code Regs., tit. 14, §15205).

CEQA requires that the lead agency solicit and respond to comments from the public and other affected agencies regarding the draft EIR (PRC §§21104, 21153, 21092; Cal. Code Regs., tit. 14, §§ 15086, 15087). A candid response to all comments from agencies and responsible parties must be included in the final EIR (Cal. Code Regs., tit. 14, §15088). Good faith and reasoned analysis must be evident in the lead agency's response to comments, and responses that are unsupported by fact are not considered adequate (Cal. Code Regs., tit. 14, §15088).

The EIR must contain an executive summary that outlines the significant effects, areas of controversy and issues yet to be resolved (PRC §21061, Cal. Code Regs., tit. 14, §15123). Hence, the finding that a project is in conformity should be presented in this section.

The Role of Mitigation Under CEQA

EIRs should focus on feasible mitigation measures and alternatives to the project (PRC §21003). All feasible alternatives must be considered (Cal. Code Regs., tit. 14, §15126), where 'feasible' may include consideration of specific economic, environmental, legal, social and technological factors (Cal. Code Regs., tit. 14, §14021(b)). The no-action alternative must be one of the alternatives analyzed (Cal. Code Regs., tit. 14, §15126(d)(2)). If the alternatives are rejected, the EIR must state why the alternatives were rejected in favor of the proposal or litigation may result (Cal. Code Regs., tit. 14, §15126(d)(1)). For example, a district court invalidated an EIS that failed to consider the alternative of routing traffic around the town (*Town of Mathews v. Department of Transportation* (527 F. Supp. 1055)).

The report must describe measures that could significantly reduce environmental impact (Cal. Code Regs., tit. 14, §15126(c)). The EIR should prevent significant avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when determined 'feasible' (Cal. Code Regs., tit. 14, §§15002, 15021, 15091). The project shall not be approved unless the agency has eliminated or substantially lessened all significant effects on the environment 'where feasible' (Cal. Code Regs., tit. 14, §15092, PRC §21002). The agency has the authority to require mitigation measures (or even to deny the project) in order to avoid one or more significant impacts on the environment (Cal. Code Regs., tit. 14, §15041 and 15042). The EIR must state what mitigation measures are required as a condition of approval (Cal. Code Regs., tit. 14, §15094). All impacts that cannot be fully mitigated must be disclosed (Cal. Code Regs., tit. 14, §15127(f)). The lead agency must state specific reasons to justify a project that is not required to fully mitigate all environmental impacts (Cal. Code Regs., tit. 14, §15093). It is important to note that mitigation measures can easily cross environmental media boundaries. That is, project mitigation to reduce the potential impacts of a project on water quality may result in a project whose design concept or scope has changed in terms of conformity analysis.

Appendix E NEPA/CEQA Process Table

The following table compares the State and federal procedures for evaluating transportation related projects under the regulations promulgated by the Council on Environmental Quality (CEQ) and the U.S. Department of Transportation (USDOT) for implementing the National Environmental Policy Act (NEPA). The comparison includes time frames specified by these regulations. The table also lists similar California Environmental Quality Act (CEQA) implementation processes and time frames that have been specified by the California Governor's Office of Planning and Research (OPR).

NEPA	CEQ	DOT	Time Frame	CEQA	Time Frame
Each agency shall identify environmental effects and values in adequate detail so that they can be compared to economic and technical analysis (40 CFR §1501.2(b)).	Agencies shall integrate the NEPA process with other planning at the earliest possible time (40 CFR §1501.2).	Applicants intending to apply for funds should notify the Administration (the Federal Highway Administration or the Federal Transit Administration) (23 CFR §771.111(a)).	At the time a project concept is identified by the Administration (23 CFR §771.111(a)).	Preliminary Review The public agency will review for completeness applications for permits or other entitlements for use (Cal. Code Regs., tit. 14, §15060).	30 days for review of permits (Cal. Code Regs., tit. 14, §15060).
Agencies may prepare an environmental assessment (EA) on any action at any time to assist agency planning and decisionmaking (40 CFR §1503.3(b)).		The Administration will identify the probable class of action (23 CFR §771.111(b)).	As soon as sufficient information is available to identify probable impacts of the action (23 CFR §771.111(b)).	Begin formal environmental evaluation to determine if the project: 1) is ministerial or discretionary, 2) is exempt from CEQA, or 3) will have a significant effect.	A determination shall be made within 30 days from the date the application for a project has been received and accepted as complete (PRC §21080.2).
An assessment is not necessary if the agency has decided to prepare an environmental impact statement (EIS) (40 CFR §1501.3(a)).	Other states and federal land management entities that may be significantly affected shall be notified and their views solicited by the applicant in cooperation with the Administration (23 CFR §771.111(e)).		They shall be notified early (23 CFR §771.111(e)).	If exempt, the agency may prepare a notice of exemption (Cal. Code Regs., tit. 14, §15061(d)).	This notice shall not be filed with OPR or the county clerk until the project has been approved (Cal. Code Regs., tit. 14, §15061(d)).

NEPA	Time Frame	DOT	Time Frame	CEQA	Time Frame
CEQ	Time Frame	DOT	Time Frame	OPR	Time Frame
Environmental Assessment		Environmental Assessment		Initial Study	
The agency will involve environmental agencies, applicants, and the public, to the extent practicable, in preparing assessments (40 CFR §1501.4(b)).		The lead agency shall consult with interested agencies and others to advise them of the scope of the project (23 CFR §771.119(b)).	The lead agency shall consult with interested agencies at the earliest appropriate time (23 CFR §771.119(b)).	All phases of project planning, implementation, and operation must be considered. The lead agency may use an initial study or similar analysis pursuant to NEPA (Cal. Code Regs., tit. 14, §15063(a)(2)).	
The agency shall determine whether to prepare an EIS (40 CFR §1501.4(c)).		After consultation: (i.e., scoping or early coordination) • determine which aspects have potential for social, economic or environmental impact; • identify alternatives and measures that might mitigate adverse environmental impacts; and • identify other environmental review and consultation requirements that should be performed concurrently with the EA (23 CFR §771.119(b)).		The lead agency shall consult informally with all responsible agencies and trustee agencies responsible for resources that will be affected to obtain recommendations as to whether an environmental impact report (EIR) or a negative declaration should be prepared (Cal. Code Regs., tit. 14, §15063(g)).	The lead agency shall begin consulting with all responsible agencies, as soon as the lead agency has determined that an initial study will be required for the project (Cal. Code Regs., tit. 14, §15063(g)).
If the agency determines not to prepare a statement, then the agency will prepare a finding of no significant impact (FONSI) (40 CFR §1501.4 (e)).		The lead agency shall summarize public involvement and include the results of agency coordination in the EA (23 CFR §771.119(b)).		If the initial study shows there is no substantial evidence that the project may have a significant effect on the environment or revisions can be made to the project to avoid or mitigate detrimental effects, then a proposed negative declaration shall be prepared (Cal. Code Regs., tit. 14, §15070).	

NEPA	CEQA	DOT	Time Frame	Time Frame	CEQA	Time Frame
<p>The federal agency will make the FONSI available to the affected public (40 CFR §1501.4(e)(1)).</p>	<p>The lead agency shall make an EA available for public inspection at the applicant's office and the appropriate Administration field offices (23 CFR §771.119(d)).</p>	<p>The lead agency shall send notice of availability of the EA to the affected units of federal, state, and local government (23 CFR §771.119(d)).</p>	<p>If a public hearing is held, then the EA shall be available at the public hearing and for a minimum of 15 days in advance of the hearing (23 CFR §771.119(e)).</p>	<p>Notice that the lead agency proposes to adopt a negative declaration shall be provided to the public (Cal. Code Regs., tit. 14, §15072(a)).</p>	<p>Notice shall be provided within a reasonable period of time prior to the adoption by the lead agency of the negative declaration (Cal. Code Regs., tit. 14, §15072(a)).</p>	
<p>If the proposed action is, or is similar to, an action that normally requires an EIS or if the nature of the proposed action is one without precedent (40 CFR §1501.4(e)(2)(i)(ii)), then the agency will make the finding of no significant impact available for public review (40 CFR §1501.4(e)(2)).</p>	<p>The lead agency shall send notice of availability of the EA to the affected units of federal, state, and local government (23 CFR §771.119(d)).</p>	<p>The lead agency shall send notice of availability of the EA to the affected units of federal, state, and local government (23 CFR §771.119(d)).</p>	<p>If a public hearing is not held, then the applicant shall place a notice in the newspaper similar to a public hearing notice (34 CFR §771.119(f)).</p>	<p>The lead agency shall provide a public review period for a proposed negative declaration.</p>	<p>The public comment period shall not be less than 21 days (Cal. Code Regs., tit. 14, §15105(b)).</p> <p>If the negative declaration is submitted to the State Clearinghouse, the review period shall be at least 30 days (PRC §21091).</p>	
	<p>Comments may be submitted in writing to the applicant or the Administration (23 CFR §771.119(f)).</p>	<p>Comments may be submitted to the Administration within 30 days of either: 1) the availability of the EA, or 2) the publication of the notice, unless the Administration determines, for good cause, that a different period is warranted (23 CFR §771.119(e)(f)).</p>	<p>Comments may be submitted to the Administration within 30 days of either: 1) the availability of the EA, or 2) the publication of the notice, unless the Administration determines, for good cause, that a different period is warranted (23 CFR §771.119(e)(f)).</p>	<p>The decisionmaking body of the lead agency shall approve the negative declaration if it finds, on the basis of the initial study and any comments received, that there is no substantial evidence that the project will have a significant effect on the environment (Cal. Code Regs., tit. 14, §15074(b)).</p>		
	<p>If no significant impacts are identified, the applicant will furnish the Administration with a copy of the revised EA, as appropriate, the public hearing transcript, copies of any comments received and responses, and recommend a FONSI (23 CFR §771.119(e)).</p>	<p>When expecting to issue a FONSI, copies of the EA shall be made available for public review for a minimum of 30 days before the Administration makes its final decision (23 CFR §771.119(h)).</p>	<p>If the lead agency finds there is substantial evidence in the record that the project may have a significant effect on the environment, the lead agency shall prepare an EIR (Cal. Code Regs., tit. 14, §15064(g)(1)).</p>	<p>If the state agency is the lead agency, it shall adhere to the time limits established by the agency, not to exceed one year for completing and certifying EIRs (PRC § 21100.2).</p>		

NEPA	CEQ	DOT	DOT	Time Frame	Time Frame	CEQA	Time Frame
Environmental Impact Statement	Environmental Impact Statement	Environmental Impact Statement	Environmental Impact Report	OPR	OPR	Environmental Impact Report	OPR
The lead agency shall publish a notice of intent in the Federal Register (40 CFR §1501.7).	The lead agency shall publish the notice of intent as soon as practicable after the decision to prepare an EIS (40 CFR §1501.7).	The Administration will issue a notice of intent for publication in the Federal Register (23 CFR §771.123(a)).	The Administration will issue a notice of intent when the decision has been made to prepare an EIS (23 CFR §771.123(a)).	The Administration will begin the scoping process after publication of the notice of intent (23 CFR §771.123(b)).	The Administration will begin the scoping process after publication of the notice of intent (23 CFR §771.123(b)).	If the lead agency determines to write an EIR, then the agency shall send a notice of the determination to each responsible agency and to applicable public agencies (PRC §21080.4(a)).	The lead agency shall send notice by certified mail or an equivalent procedure immediately after the determination is made (PRC §21080.4(a)).
The federal agency will commence the scoping process after a decision is made to complete an EIS (40 CFR §1501.4(d)).		The Administration, in cooperation with the applicant, will begin the scoping process (23 CFR §771.123(b)).	The Administration will begin the scoping process after publication of the notice of intent (23 CFR §771.123(b)).			For a proposed project that may affect highways or other facilities under the jurisdiction of the USDOT, a lead agency shall call at least one scoping meeting if the meeting is requested by the department (PRC §21083.9).	The lead agency shall call a scoping meeting as soon as possible, but not later than 30 days after receiving the request from the USDOT (PRC §21083.9).
The agency will commence preparation of the EIS (40 CFR §1502.5).	The agency shall begin preparing the EIS as close as possible to the time the agency is developing or is presented with the proposal. The statement shall be prepared early enough so that it can serve as a practical contribution to the decisionmaking process and will not be used to rationalize or justify decisions already made (40 CFR §1502.5).	The draft EIS shall be prepared by the Administration in cooperation with the applicant or, where permitted by law, by the applicant with appropriate guidance and participation by the Administration (23 CFR §771.123(c)).	The draft EIS shall be prepared by the Administration in cooperation with the applicant or, where permitted by law, by the applicant with appropriate guidance and participation by the Administration (23 CFR §771.123(c)).			Upon receipt of the notice, each responsible agency shall specify to the lead agency whether or not the scope and content of the environmental information is germane to its statutory responsibilities in connection with the proposed project to be included in the EIR (PRC §21080.4(a)).	Each responsible agency shall communicate to the lead agency by certified mail or equivalent procedure not later than 30 days after receipt of the notice of the lead agency's determination (PRC §21080.4(a)).
The draft EIS shall be prepared in accordance with the scope decided upon in the scoping process (40 CFR §1502.9(a)).		The Administration will approve the draft EIS for circulation by signing and dating the cover sheet (23 CFR §771.123(e)).	The Administration will approve the draft EIS for circulation by signing and dating the cover sheet (23 CFR §771.123(e)).			The lead agency may begin work on the draft EIR (Cal. Code Regs., tit. 14, §15082(a)(4)).	The lead agency may commence work immediately without awaiting responses to the notice of preparation (Cal. Code Regs., tit. 14, §15082(a)(4)).

NEPA	Time Frame	DOT	Time Frame	CEQA	Time Frame
CEQ The lead agency shall work with the cooperating agencies and shall obtain comments (40 CFR §1502.9(a)).	The lead agency shall contact cooperating agencies for comments after preparing a draft EIS and before preparing a final EIS (40 CFR §1501.1(e)).	The draft EIS shall be circulated for comment by the applicant. It shall be made available to the public and transmitted to agencies for comment (23 CFR §771.123(g)).	The draft EIS shall be made available no later than the time the document is filed with the U.S. Environmental Protection Agency (USEPA) (23 CFR §771.123(g)). The public comment period shall last no less than 45 days (23 CFR §771.123(f)).	OPR A notice of completion must be filed with OPR (Cal. Code Regs., tit. 14, §15085(a)), and the lead agency shall provide public notice of the availability of a draft EIR (Cal. Code Regs., tit. 14, §15087(a)).	A notice of completion must be filed as soon as the draft EIR is completed (Cal. Code Regs., tit. 14, §15085(a)). A public comment period, not less than 30 days, is required (PRC §21091). Once the draft EIR is submitted to the State Clearinghouse, the review period shall be at least 45 days. (PRC §21091(a)).
The final EIS shall respond to comments. The agency shall discuss at appropriate points in the final statements any opposing views that were not adequately discussed in the draft statement and shall indicate the agency's response to the issues raised (40 CFR §1502.9(b)).		A final EIS shall be prepared by the Administration in cooperation with the applicant or, where permitted by law, by the applicant with appropriate guidance and participation by the Administration (23 CFR §771.125(a)(1)).	A final EIS shall be prepared after the circulation of a draft EIS and the comments received have been considered (23 CFR §771.125(a)(1)).	The lead agency shall evaluate comments on environmental issues that are received from persons who reviewed the draft EIR, and the lead agency shall prepare a written response (Cal. Code Regs., tit. 14, §15088(a)).	The lead agency shall respond to the comments received during the recognized comment period and may respond to late comments (Cal. Code Regs., tit. 14, §15088(a)).
Agencies may prepare supplements to either the draft or final environmental impact statements (40 CFR §1502.9(c)).		The final EIS should also document compliance, to the extent possible, with all applicable environmental laws and Executive Orders, or provide reasonable assurance that their requirements can be met (23 CFR §771.125(a)(1)).		The lead agency shall prepare a final EIR (Cal. Code Regs., tit. 14, §15089(a)).	Before approving a project, the lead agency shall prepare the final EIR (Cal. Code Regs., tit. 14, §15089(a)).

1 A draft EIR shall be submitted to the State Clearinghouse for review by state agencies if: 1) the draft EIR is prepared by a state agency which is also the lead agency; 2) the draft EIR is prepared by a public agency where a state agency is a responsible or trustee agency or otherwise has jurisdiction by law with respect to the project; 3) the project has statewide, regional, or areawide significance; or 4) there is a draft EIS prepared pursuant to NEPA (Section 15205 State CEQA Guidelines).

NEPA	Time Frame	DOT	Time Frame	CEQA	Time Frame
CEQ Agencies shall circulate the entire draft and final EISs except for certain appendices and unchanged statements (40 CFR §1502.19).		The Administration will indicate approval of the EIS for an action by signing and dating the cover page (23 CFR §771.125(a)(1)).		OPR The lead agency may decide whether or how to approve or carry out the project.	The lead agency may decide how to proceed after considering the final EIR and while making proposed project findings (Cal. Code Regs., tit. 14, §15092(a)).
Each week, the USEPA shall publish a notice of the EISs in the Federal Register of the EISs that were filed during the preceding week (40 CFR §1506.10(a)).		The final EIS shall be transmitted to any persons, organizations, or agencies that made substantive comments on the draft EIS or requested a copy of the final EIS (23 CFR §771.125(g)).	The final EIS shall be transmitted to commenters no later than the time the document is filed with the USEPA (23 CFR §771.125(g)).	The lead agency shall file a notice of determination following EIR consideration (Cal. Code Regs., tit. 14, §15094(a)).	
At the time of its decision (or recommendation to Congress), each agency shall prepare a concise public record of decision (40 CFR §1505.2).	The lead agency shall prepare a record of decision either 90 days after publication of the notice in the Federal Register for a draft EIS or 30 days after publication in the Federal Register for a final EIS whichever is later (40 CFR §1506.10(b)).			The lead agency shall file a copy of the final EIR with the appropriate planning agency of any city, county, or both where significant effects on the environment may occur (Cal. Code Regs., tit. 14, §15095(a)).	

Appendix F

Summary of the SCAQMD CEQA Air Quality Handbook

Although the California Environmental Quality Act (CEQA) contains few quantitative analysis and modeling requirements, there are a number of points in the CEQA guidelines that imply specific emission modeling is required. Two important guidelines address determining the air quality significance of a project and assessing the consistency of the project with applicable regional plans. For these guidelines, emission inventories are necessary to determine the significance of a project and if the project conforms with other plans.

The CEQA guidelines were created by the South Coast Air Quality Management District (SCAQMD) with the intent of helping local government agencies and consultants develop environmental documents required by CEQA and to help local, land-use planners analyze and document proposed and existing projects effects on air quality. Many agencies are important in addressing the air quality problems in the South Coast Air Basin (SCAB) and the Southeast Desert Air Basin. Major agencies include the U.S. Environmental Protection Agency (USEPA), California EPA, the California Air Resources Board (CARB), local governments, Southern California Association of Governments (SCAG), Coachella Valley Association of Governments, and SCAQMD.

Air Quality Management Plan (AQMP)

The AQMP was designed to be the “blueprint to achieve the federal and state health based air quality standards within twenty years” and to provide a “framework for future air pollution control efforts.” The state implementation plans (SIPs) developed are derived from attainment plans for CO, NO_x, and PM₁₀ from control measures of the 1991 AQMP.

Control measures in AQMPs are categorized into three tiers: 1) Tier I includes measures that propose the use of available technological applications and management practices that can be adopted within five years; 2) Tier II consists of measures that require significant advancement in technology within the next ten to fifteen years; and 3) Tier III includes current technologies that are being researched and developed to be implemented in the next twenty years. The goal of the AQMP is to provide a framework that sets dates to assist SCAB in achieving the federal and state air quality standards.

Initial Consultation

Initial consultation and review are stressed as an important part of the CEQA process, especially in identifying air quality impacts before the formal CEQA process begins. Air quality impacts that need to be addressed include: 1) construction emissions, and 2) population increases in excess of projections in the regional growth management plan or in an area not predicted for growth. Key transportation issues include emissions from increased vehicle trips; CO hot-spots; and ship, aircraft, and locomotive emissions. In determining the CO impact for a project, the “no project” ambient background CO concentrations from an air quality monitoring station are compared to the estimated levels. If a project is determined to be significant, a dispersion model is recommended for use in estimating the potential for a CO hot-spot. The recommended dispersion models are CALINE4 or CAL3QHC. Thus, in a preliminary study for a project, potential air quality impacts are analyzed using modeling.

Determining the Air Quality Significance of a Project: Initial Study

An initial study is necessary to determine the air quality significance of a project. An initial study will help to decide if an environmental impact report (EIR) is necessary. An initial study is important for projects that are considered to have a statewide or regional effect (i.e., interfering with attainment of air quality standards). The impact of a project is determined by examining the types and levels of emissions generated by the project and its

impacts on the factors that affect air quality. Direct and indirect emissions are to be included, and the following significant thresholds are for projects in the South Coast basin:

- ROC: 55 pounds per day
- NOx: 55 pounds per day
- CO: 550 pounds per day
- PM10: 150 pounds per day
- SOx: 150 pounds per day
- California one-hour or eight-hour standard

When project specific figures are available, modeling of estimated emissions to determine their significance is suggested. Other indicators of potential air quality impacts include whether: 1) the project could interfere with attainment of the federal or State ambient air quality standards with projected air quality impacts; 2) the project could result in increasing the regional statistical area that would be in excess of projections from the AQMP and other plans; or 3) the project could cause more vehicle trips, causing a CO hot-spot. If a project is found to have a significant air quality impact, then an EIR should be prepared. If these impacts can be mitigated, measures can be adopted in the CEQA process that can result in a mitigated negative declaration rather than leading to an EIR.

Analysis of Air Quality in an EIR

Once it is decided that an EIR is necessary because of significant air quality impacts, air quality data for the project area needs to be collected. First, baseline air quality data is compiled from monitoring stations and data that supports the evaluation of the air quality impacts. This information can be from “readily available reference documents” and should be concise. Baseline information includes: 1) project setting and description, 2) regional climate and meteorological conditions, 3) existing climate and local air quality, 4) sensitive receptors, 5) air basin and AQMP, and 6) the transportation system.

When comparing alternatives to the “no project” baseline, emission modeling is performed. The accuracy of air quality model inputs are emphasized since the “user should be confident with the input assumptions before they are used in the model.” Air quality modeling tools listed to assess air quality impacts were Mobile Assessment for Air Quality Impacts (MAAQI), CALINE4, CAL3QHC, and EMFAC7E.¹

Cumulative air quality impacts, as well as project alternatives, are important in determining air quality significance and possible mitigation measures.

Mitigation Measures Role In Air Quality

Projects with large air quality impacts will require mitigation measures. The criteria of mitigation measures resemble the criteria of transportation control measures (TCMs). According to the SCAQMD recommended criteria, mitigation measures for projects should: 1) coincide with the cause of an impact and mitigate the impact when it is occurring, 2) utilize available resources, 3) legally enforce implementation, 4) define the basis for their monitoring and enforcement, 5) require implementation within a reasonable time frame, and 6) require periodic reviews and evaluations.

Assessing the Consistency of an EIR with Applicable Regional Plan(s)

The guidelines emphasize a project’s consistency with regional plans that have large environmental effects “such as air quality as required by CEQA Guideline section 15125.” CEQA guidelines require an analysis and

¹ MAAQI is the urban airshed model developed specifically for use in the South Coast AQMD region.

discussion for inconsistencies between proposed projects and applicable General Plans and regional plans. Applicable plans include the AQMP, Regional Growth Management Plan (i.e., a population projection), Local Congestion Management Plan (i.e., impacts on established levels of service and CO hot spots), Regional Mobility Plan (i.e., transportation projects), and the General Plan. Thus, projects that will increase the frequency or severity of existing air quality violations or delay the timely attainment of air quality standards or will violate assumptions in air quality management plans that specify attainment with the national ambient air quality standards by 2010. If a project is found to be inconsistent with an AQMP, then mitigation measures (i.e., TCMs) can be adopted or a local agency can approve "a discretionary land use project or a government project that results in unmitigated air pollutant emissions." Nevertheless, the Clean Air Act requirements and conformity guidelines will most likely prevent the approval of projects that are inconsistent with an AQMP.

Estimating Emissions

Emission estimates for the construction and operation of the project are two factors that must be analyzed. Screening tables or a methodology using EMFAC7E can be used to calculate emissions. For analyzing the air quality impacts of projects, the SCAQMD CEQA guidelines list the following models: Mobile Assessment for Air Quality Impacts (MAAQI), CALINE4, CAL3QHC, and EMFAC7EP.²

² EMFAC7EP was replaced by EMFAC7EPSCF1 and subsequently by EMFAC7EFSCF2. The EMFAC7EPSCF1 should never be used (Guensler, 1993).

Appendix G

Citizen Suit Provisions Under the CAA and NEPA/CEQA

Citizen Suit Provisions Under the Clean Air Act (CAA) (42 U.S.C. 7604)

Any person can commence a civil action on his/her behalf against:

- Any person including the United States and any government instrumentality or agency to the extent permitted in the Eleventh Amendment of the Constitution who is alleged to be in violation of: 1) an emission standard or limitation under the CAA, or 2) an order by the U.S. Environmental Protection Agency (USEPA) or State with respect to such a standard or limitation. In this case, no action may be commenced: 1) prior to 60 days after the plaintiff has filed notice of violation to the USEPA, the State where the violations occurred, and any alleged violator of the standard limitation or order; or 2) if the USEPA or State has begun prosecuting: a) a civil action in a court, or b) a state to require compliance or order. In any such action, a person may intervene as a matter of right in a court.
- The USEPA where they fail to perform any act or duty under the CAA that is not discretionary. In this case, no action may be commenced prior to 60 days after the plaintiff has given notice of the action to the USEPA.
- Any person who proposes to construct or constructs any new or modified major emitting facility without a permit under subchapter I, part C, (Prevention of Significant Deterioration of Air Quality) or subchapter I, part D, (Plan Requirements for Nonattainment Areas), or who is alleged to be in violation of any condition of a permit.

The district courts have jurisdiction to: 1) enforce the standards or limitations, 2) order the USEPA to perform the act or duty not fulfilled, 3) apply any appropriate civil penalties, and 4) force agency action when they are unreasonably delayed.

An exception is when a petition is filed for a review of action of the USEPA in promulgating: 1) any national primary or secondary ambient air quality standard; 2) any emission standard or requirement under §112 (Hazardous air pollutants); 3) any standard of performance or requirement under §111 (Standards of performance for new stationary sources); 4) any standard under §202 (Emission standards for new motor vehicles or new motor vehicle engines), other than a standard under §202 (b)(1); 5) any determination under §202(b)(5); 6) any control or prohibition under §211 (Regulation of fuels); 7) any standard under §231 (Establishment of standards), any rule issued under §113 (Federal enforcement), §119 (Primary nonferrous smelter orders), or §120 (Noncompliance penalty); or 8) any other nationally applicable regulations promulgated, or final action taken by the USEPA. In these cases, the petition must be filed in the United States Court of Appeals for the District of Columbia.

A petition must be filed in the United States Court of Appeals for the appropriate circuit when it calls for a review of the following actions of the USEPA: 1) approving or promulgating any implementation plan under §112, or §111(d); 2) any order under §111(j), §112, §119, §120, or any other final action of the USEPA that is locally or regionally applicable, including any denial or disapproval.

Definition of Emission Standards or Limitations

The emission standards or limitations that can be brought to court include:

- The schedule for compliance, emission limitations, standards of performance, or emission standards;
- A control or prohibition of a motor vehicle fuel or fuel additive;
- Any permit to construct or that constructs any new or modified major emitting facility under subchapter I, part C, or subchapter I, part D, any condition or requirement under an implementation plan relating to transportation control measures (TCMs), air quality maintenance plans, vehicle inspection and maintenance programs or

- vapor recovery requirements, any conditions under subchapter VI (Stratospheric ozone protection), or any requirement of §111, and §112; or
- Any other standard, limitation, or schedule established under any permit under Subchapter V or under any applicable state implementation plan (SIP) approved by the USEPA, any permit term or condition, and any requirement to obtain a permit as a condition of operations.

Intervention by USEPA, Service of Complaint, and Consent of Judgment

An action taken because of a violation of an emission standard or limitation by a stationary source can only be brought to court in the judicial district where the source is located. The USEPA can intervene as a matter of right at any time in the proceeding. In any action brought as a citizen suit, the plaintiff must give a copy of the complaint to the Attorney General and the USEPA. A consent judgment shall not be given until 45 days following the receipt of the copy of the proposed consent judgment by the Attorney General and the USEPA so that the government can submit its comments on the judgment to the courts and parties or intervene.

Citizen Suit Provisions of NEPA/CEQA

In order to acquire judicial review, the plaintiff must have legal "standing," meaning a case should be presented in an adversarial context and in a form that lends itself to resolution by the adversary process. Standing is also controlled by the relevant statute (Schoenbaum and Rosenberg, 1991). The National Environmental Policy Act (NEPA) itself does not explicitly provide for judicial review of agency actions. Groups that wish to file suit against an action for which a finding of no significant impact (FONSI) or a record of decision (ROD) has been completed must do so under the Administrative Procedures Act. The Administrative Procedures Act states:

"[a] person suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of a relevant statute, is entitled to judicial review thereof." (5 U.S.C. §702)

The Administrative Procedures Act also declares:

"[t]he United States may be named as a defendant in any such action, and a judgment or decree may be entered against the United States: *Provided*, That any mandatory or injunctive decree shall specify the Federal officer or officers (by name and title), and their successors in office, personally responsible for compliance." (5 U.S.C. §702)

Although there is no statute of limitations for bringing up suits regarding NEPA violations under the Administrative Procedures Act, equitable doctrine recommends that suits be brought in a reasonable time frame (i.e., prior to the completion of a proposed project).

Similarly, the California Environmental Quality Act (CEQA) does not have a specific guideline for the enactment of citizen suits. Citizen groups in California can use the review process under the Administrative Procedures Act to bring up possible violations of the mandates of CEQA. Unlike NEPA however, CEQA does list a statute of limitations for actions or proceedings with the intent to "attack, review, set aside, void or annul" certain acts or decisions of a public agency on the grounds of noncompliance (PRC §21167). Citizens or citizen groups can file a lawsuit after a final environmental impact report has been approved. If a notice of determination has been filed, groups have a 30-day time period to file action alleging that "a public agency has improperly determined whether a project may have a significant effect on the environment." This time period is extended to 180 days if no notice of determination was filed. If a citizen group wishes to file a lawsuit against an exemption determination, it has 35 days from the time of the notice of exemption filing date to do so. If no notice of exemption was filed, the group has 180 days from the time of the agency's decision to carry out or approve a project to commence any legal action or proceeding (PRC §21167).

Appendix H Summary of CAA Cases that may be Relevant to Conformity

The cases that follow were summarized by the Institute of Transportation Studies-Davis (ITS-Davis) staff. The conclusions regarding the applicability of these cases are the opinions of the ITS-Davis researchers and do not reflect the opinions of legal council.

Review of Relevant NEPA/CEQA and Conformity Court Cases and Litigation

States, regions, and local agencies must use emission modeling in their plans to demonstrate conformity. The failure to meet the emission inventory estimates that are required to attain Federal air quality goals in these plans can result in litigation. The case of *Citizens for a Better Environment v. Deukmejian* indicates that citizens and groups have clear standing to challenge a “state’s failure to enforce an emission standard or limitation set forth in a SIP”. This case confirmed the strong reliance on emission modeling to quantify comprehensive emission estimates. Failure to demonstrate the emission levels required by attainment years can be used in a legal suit to hold an agency accountable and liable.

Accurate modeling of emissions, whether quantifying reductions from transportation control measures (TCMs) or other transportation programs, will be important in fulfilling conformity requirements and in carrying out the plan. If the emission levels that plans and areas commit to reaching are not met, citizens may undertake legal action to ensure that the levels are obtained. Given the existing emphasis on modeling by regional agencies, the new conformity requirements are likely to increase the importance of modeled demonstrations.

A number of legal cases are briefly reviewed in this section. Each case establishes different legal points that appear to apply to agencies attempting to comply with the Conformity Rule (Rule). The case of *SCAQMD v. EPA* questions whether the Rule guidelines, as currently written, are legal. A second case, *Conservation Law Foundation v. EPA*, questions some of the plans that have already been deemed by the U.S. Environmental Protection Agency (USEPA) to have adequately demonstrated conformity. In this second case, the plaintiffs assert that, in some instances, the approved plans will not actually obtain the air quality goals stated in the plan. The case of *Citizens for a Better Environment v. MTC* demonstrates that once a plan has been accepted as conforming, the emission levels expressed must be met, because they are legally enforceable. Finally, the case of *Daubert v. Merrell Dow Pharmaceuticals* appears to establish the requirements for experts and scientific evidence. The evidence associated with future legal claims, which may be brought about by disputes under the Rule, are likely to be required to meet the scientific evidence tests that were established by the Supreme Court in this case. However, given the uncertainty associated with modeled conformity demonstrations, and the case-by-case application of legal rules to the facts of individual cases, it is unclear what the outcome of individual legal challenges to modeled conformity demonstrations may be.

Citizens for a Better Environment v. Deukmejian (731 F.Supp. 1448) -- March 5, 1990

The plaintiff brought suit against the Metropolitan Transportation Commission (MTC) for failing to meet the requirements of the 1982 Bay Area Air Quality Management Plan (AQMP). The AQMP was required to contain a “technically justified program that adopts and commits to implement control measures that will result in the attainment of the ozone and CO standards no later than 1987.” According to the plan, if the Bay Area failed to make sufficient progress toward attaining the National Ambient Air Quality Standards (NAAQS), transportation and stationary contingency measures listed in the plan were to be implemented.

The holdings established three points.

- The process committed to in the 1982 plan is fully enforceable by citizen action. Thus, citizens and citizens groups have standing to challenge a “[S]tate’s failure to enforce an emission standard or limitation set forth in a SIP [State Implementation Plan].”
- Failure to adopt sufficient stationary source contingency measures to attain the NAAQS was not a violation of the SIP, because the SIP did not explicitly require the enactment of contingency measures to meet these standards. However, the plan did require the adoption of these measures, even if they were insufficient to attain the NAAQS, if reasonable further progress (RFP) was not made.
- The SIP required that the MTC consider delaying highway projects that resulted in significant adverse impacts, and that the MTC adopt TCMs within six months of a failure to achieve a RFP determination. The MTC delayed implementation of the transportation contingency plan. The court held that the MTC should have activated the contingency plan upon the RFP determination. With respect to the required TCMs, the MTC failed to “adopt and implement control measures designed to achieve at least the target emission reductions set forth in the 1982 Plan.”

Citizens for a Better Environment v. Deukmejian (746 F.Supp. 976) -- August 28, 1990

This case was filed for the court to reconsider the previous ruling that defendants were not liable for violating the 1982 contingency plan for stationary sources. The plaintiff contended that although the 1982 Bay Area Air Quality Plan did not require sufficient contingency measures to acquire NAAQS, it did require specific contingency measures to positively demonstrate RFP. In addition, the plaintiff wanted to change the required implementation of MTC actions to “as soon as possible” from “as expeditiously as practicable.”

The holdings established three points.

- The 1982 Plan to adopt contingency measures if a positive RFP determination was not implemented. The purpose of the contingency plan was to ensure that the local district would fulfill their obligation to reach RFP status. The court ruled that implementation of the remaining stationary source measures was a necessary part of the contingency measure plan to obtain a positive RFP determination. The MTC was required to achieve RFP status by 1987, as stipulated in the 1982 plan. However, since a positive RFP determination was not attained by 1990, the MTC was found liable.
- The court found that “expeditiously as practicable” and “as soon as possible” lead to the same result, since the courts require that the overdue SIP commitments be satisfied without delay and without re-balancing costs and benefits already balanced under either condition.
- Plaintiffs defined RFP by emission level, and the defendants defined RFP by targeted reduction. The court concluded that both definitions were correct.

Citizens for a Better Environment v. Wilson (775 F.Supp. 1291) -- August 19, 1991

This case was brought before the court to question whether the TCMs that the MTC implemented (i.e., TCMs required by the court in *Citizens for a Better Environment v. Deukmejian*) resulted in a sufficient reduction to achieve RFP as defined in the 1982 Plan. Sixteen TCMs were adopted to accomplish RFP; however, the plaintiffs claimed that the MTC did not fulfill the obligation of the contingency plan to positively demonstrate RFP in the Bay Area.

General Holdings

Reasonable further progress in the SIP for ozone and CO denotes annual incremental reductions of emissions that are necessary to achieve the federal air quality standards. The court found that SIPs remain in effect even after the statutory deadline for achieving the standards has expired. The 1982 Plan remains enforceable during

the interim period under the 1990 Clean Air Act (CAA) amendments because “Congress intended to hold agencies to existing SIP obligations pending approval of [a] new SIP.” Hence, the issue is whether the MTC “could have complied or taken the steps within reasonable power to comply.” Because there are no RFP documents since 1987, the court used other sources to evaluate RFP with respect to ozone and CO.

Important Points Related to Modeling

In the transportation sector, the plaintiffs claimed that the 1982 plan for hydrocarbons (HC) committed to reduce emission levels of 143 tons per day (tpd) versus the 1991 estimated level of 199 tpd. This demonstrated that the transportation sector had not demonstrated RFP. However, the updated data from 1987 inventories demonstrated higher emission levels than those indicated in the 1982 plan. The court commented that “the updated data rests on a different set of assumptions and different methodology than that which was used to develop the RFP line in the 1982 plan.” Some of the differences in the inputs for the models mentioned were the source categories of emission and the travel models. Thus, the court concluded that it is not possible to compare 1982 RFP requirements with the updated data. In addition, the court stated that in measuring RFP in the 1982 Plan, the analysis would have to remain true to the assumptions and methodology established in the 1982 plan to maintain “internal consistency.”

The MTC pointed out that RFP would be achieved for ozone by 1991 without reliance on TCMs because of the Inspection and Maintenance (I-M) program that the State of California implemented. However, a new study found that the effects of the I-M program that were modeled were not as great as previously expected. The court stated that the new study does raise relevant questions in obtaining RFP; however, the study does not conclude that current records for ozone did not demonstrate that RFP had not been made.

CO Modeling

In the CO modeling results, both parties agreed on the RFP emission levels for CO in the 1982 Plan. Emission levels for CO were estimated before controls at 2340 tpd for 1987 (i.e., a total of 1934 tpd for the transportation sector). With the implementation of the I-M program and ten TCMs, a total reduction of 393 tpd was to occur. A status of RFP would be demonstrated if the transportation sector was at 1541 tpd, and a reduction for CO of 393 tpd was demonstrated.

To exhibit that RFP had not been achieved, the plaintiff suggested the use of a surrogate to CO of vehicle miles traveled (VMT) and vehicle trips (VT). The court ruled that determining RFP with these references could not be done because Congress defined RFP in terms of emissions, not in VT and VMT.

The CALIMFAC model was used to forecast the effects of the I-M program. The court stated that while this model is flawed, it is the best available tool for I-M forecasting. Thus, there is a shortfall in demonstrating RFP. The three TCMs that were delayed and not adopted played a role in the MTC's failure to obtain RFP in CO reductions.

“States have an unwavering obligation to carry out federally mandated SIPs; thus, where a SIP is violated, liability attaches, regardless of the reasons for the violation.” The Court ruled that the MTC has the burden to “either identify additional feasible TCMs (including authorized or funded “stalled” 2131 TCMs) or to demonstrate why such additional TCMs are infeasible (Sic).”

Analysis of the Case by Harvey and Deakin

Before the conformity guidelines were adopted, the Federal Highway Administration (FHWA) sponsored a policy discussion document titled *Transportation and Air Quality*. The document addressed some of the details and possible implications of the *Citizens For a Better Environment* cases on the modeling of transportation plans and projects to meet future conformity requirements. One of the primary reasons for the conformity requirements was to prohibit an increase in mobile source emissions, which would inhibit progress toward attainment or nullify the attainment demonstration. To demonstrate that attainment was not inhibited, an emission analysis was required to show that levels of the plan or program would be at or below those in the attainment demonstration.

A review of the decision concluded that the case addressed many issues critical to linking transportation and air quality planning and the many challenges of the conformity requirements. In addition, points that were not addressed in the court's decision and order, but were presented in the plaintiff's and defendant's evidence, were discussed in this analysis.

One of the plaintiff's main points of contention was the MTC's use of "standard practice and analysis" to determine the emission impacts of previous plans. In this case, the defendants argued that standard practices overestimate the emission benefits of highway investments by showing speed improvements while not accounting for the "induced" demand from the increased travel times. Thus, a method that incorporates feedback should be defined in terms of mode split and trip distribution.

This line of reasoning focuses attention on several variables that should be included in modeling transportation activity and emissions. Important things to consider in the travel demand analysis in this case include: 1) the MTC supported the use of travel time in models as it relates to trip generation, auto ownership, residential location, and employment location (including appropriate feedbacks); and 2) the defendants supported the use of time-of-travel, trip chaining, regional population, and economic growth data. The defendants emphasized the importance of the regional economic situation, specifically population and job growth that could stimulate vehicle trips and thus would nullify any emission benefits. In many of the highway and transit planning documents, economic stimulus is an important part of justifying certain projects. However, this economic growth may actually counteract any emission benefits. This would have great impacts on conformity determinations.

While the MTC's analysis procedure was deemed reasonable, the judge also noted that the effect of infrastructure on regional growth was still not invalid since "nothing in his reading of the 1990 Amendments would preclude EPA from requiring such an analysis in future guidance."

This case was deemed important because it addresses the kind of analyses that would be necessary to assess regional impact of "highway capacity investments." The cost of data and model development were considered very important. However, the cost of the necessary information may be greater than the potential litigation costs. This issue will not only affect larger metropolitan areas but any urban area facing severe pollution problems.

Transportation modelers and professionals question if the models can incorporate all these factors in an accurate manner. "Existing models were conceived to support relatively narrow sizing and location decisions, given assumptions about basic facility needs." Because of this case and its assessment of the conformity process, major projects will require more detailed and critical assessments.

The questions that were raised in the case on the role of modeling and technical and procedural matters follow: 1) whether conformity includes non-federal projects; 2) whether conformity requirements apply to attainment areas; 3) how to address "a change in background conditions and assumptions;" 4) the details necessary in RFP assessments; 5) how to address transportation improvement program (TIP) amendments; 6) whether transit projects should be analyzed similarly to highway projects; and 7) how to address localized CO hot-spot analyses. The conformity guidelines that were developed address many of these issues but left many details unresolved.

Conservation Law Foundation v. Environmental Protection Agency (from Petitioners' Non-binding Statement of Issues)

This case questions the final actions in the conformity guidelines, specifically 40 CFR Parts 51 (Subpart W) and 93 (Subpart B). The issues raised in the case from the Petitioners' Non-binding Statement of Issues are listed below, with some brief discussions added (*italicized print*) regarding plausible issues associated with conformity modeling:

1. All attainment areas are exempted unlawfully. *One question raised in many of the comments by state and local agencies from the Conformity Docket is: if attainment areas have the funds and resources necessary to perform the conformity analysis, then a large amount of money must be added to the required emission inventory and modeling.*
2. "Indirect emissions" that are foreseeable and that would not occur if not for the project are unlawfully exempted. *It may not be possible to model "indirect emissions" with current modeling methodologies.*
3. "All activities whose emissions are individually less than certain threshold levels, regardless of their aggregate or cumulative effects on NAAQS violations and attainment" are unlawfully exempted.
4. Certain categories of activity that have potential effects on NAAQS, such as the sale of federal land, are unlawfully exempted.
5. Activities not yet approved that are based on old "environmental documents" not considering their effects on the NAAQS are unlawfully exempted. *This question also raises the issue of using "older" models to analyze emissions in "older environmental documents." The precedent for this issue is documented in Citizens for a Better Environment v. Wilson in which the court ruled that different inventory years cannot be compared if they employ different models (i.e., updated models). However, the court did not suggest methods to resolve this problem.*
6. Conformity of some proposed activities that will have emissions that are inconsistent with an applicable implementation plan, "based upon a State's commitment to revise its implementation plan in the future to accommodate the activity" are unlawfully exempted.
7. The proposed regulations allowed conformity even though mitigation measures were not committed to with funding.
8. The proposed regulations failed to require that an activity must conform to an applicable implementation plan during the foreseeable activity's life. *In modeling an activity's emission effects, the extent to which future assumptions are required will impact model accuracy.*
9. The proposed regulations unlawfully allowed conformity by giving emission credits for "reductions that could not be counted under section 182(b)(1) of the act, 42 U.S.C. 7411a(b)(1), for purposes of demonstrating attainment or progress toward attainment in an implementation plan".
10. The proposed regulations unlawfully allowed conformity of an activity that will cause an increase in emissions in a nonattainment area. *To determine the effects of an activity, an emission model must be used. To determine if the conformity designation is incorrect, the inputs for the emission model should be analyzed.*
11. The proposed regulations unlawfully allowed conformity for an activity whose emissions would delay attainment unless offset by new control measures, which are not identified, adopted or committed to by an applicable implementation plan.
12. The proposed regulations allowed conformity for an activity with proposed emissions that did not consider the effect of surrounding areas including nonattainment, maintenance and attainment areas. *If an environmental*

impact statement[/environmental impact report] (EIS[/EIR]) is completed for a project, the National Environmental Policy Act[/California Environmental Quality Act] (NEPA[/CEQA]) requires cumulative impact analysis for the proposed project.

13. The proposed regulations allowed conformity for proposed activities without requiring that “future emissions remain below levels found necessary to avoid exacerbating NAAQS violations or delaying attainment.”
14. The proposed regulations allowed conformity for an activity with emissions that were not consistent with an emission budget or attainment demonstration or both in an applicable implementation plan.
15. “Whether respondents unlawfully included transportation plans, programs, and projects within the scope of this action, thereby exempting those activities from sections 176(c)(2) and (c)(3).”
16. The proposed regulations prohibited states from revising implementation plans so that “conformity requirements are more stringent unless they apply to federal and non-federal entities equally.”

South Coast Air Quality Management District v. EPA (from Petitioners’ Non-binding Statement of Issues)

This case questions the final actions in the conformity guidelines and whether the USEPA went beyond its jurisdiction and authority in writing these guidelines. The issues raised in the case from the Petitioners’ Non-binding Statement of Issues are listed below; it includes some brief discussions added (italicized print) regarding plausible issues associated with conformity modeling:

1. The conformity guidelines prohibit new conformity findings and require that existing conformity findings shall lapse at the specified times following a USEPA finding of: 1) failure to submit, 2) incomplete submittal, or 3) disapproval of the control strategy implementation plan revision (40 CFR §51.448). *The holdings from Citizens for a Better Environment suggest that older plans are still legally binding. The court ruled that the 1982 Plan was still in effect, even in 1991.*
2. The conformity guidelines do not provide conformity determinations for “portions of a nonattainment area where there are separate political subdivisions responsible for air quality planning in separate parts of the nonattainment area, particularly where one of the adverse findings described in [Section] 51.448 has been made with respect to one of the political subdivisions but not with respect to another.”
3. The conformity guidelines adopted “verbatim” the provisions of the affected state and local agencies (40 CFR §51.396).
4. The conformity guidelines adopted 40 CFR §51.402, specifically setting up consultation procedures.
5. The conformity guidelines prohibit “conformity findings from being made for transportation control measures included in the applicable implementation plan in the absence of a currently conforming plan and TIP as set out in [Section] 51.420”
6. The conformity guidelines require the “use of a severely outdated ‘applicable implementation’ and prohibiting the use for transportation conformity purposes of a SIP revision which has been submitted by the state but not yet acted upon by EPA in the event the revision modifies the motor vehicle emission budget downwards.”

Environmental Defense Fund, Inc., et al., v. Carol M. Browner (40 ERC 1668 – October 13, 1994)

The plaintiffs brought suit against the USEPA to compel the USEPA to issue conformity criteria for attainment areas pursuant to §176(c)(4)(a) of the CAA. It had been the USEPA's assertion that the statute is ambiguous and provides discretionary authority to the USEPA for issuing conformity rules that apply to attainment areas. Plaintiffs argue that the statute is not ambiguous and that USEPA has a clear, nondiscretionary duty to promulgate final transportation and general conformity rules that set forth criteria and procedures for determining conformity in attainment areas, as well as nonattainment and maintenance areas. This case examined the structure and plain language of the statute, as well as previous interpretations of the statute in an effort to remain true to congressional intent.

In their argument, the plaintiffs point to the actual language of the statute. In particular, they point to the wording in Section (c)(1) that prohibits funding or support of "any activity" that does not conform to an implementation plan approved under Section 7410. The plaintiffs also argued that because activities must conform to implementation plans, and implementation plans are required for every portion of the state (under Section 7410), then conformity must apply to all areas, including those already in attainment.

The plaintiffs also cite the language of Section (c)(1)(B)(i), which defines conforming activities as those that will not "cause or contribute to any new violation of any standard in any area," to argue that the phrase "any area" includes attainment areas. They also assert that Section (i) specifically includes attainment areas by referring to "new violations" rather than the exacerbation or protraction of existing violations. Presumably, new violations would take place in areas that are in attainment.

The court decided that the plaintiffs' reading of Section 176(c) is not logically coherent and the USEPA's reading "if not a paradigm of logic, is less self-contradictory." The defendants suggested that the reference in subsection (i) to "new" violations actually applies to "additional" violations. The court stated that the language of Section 176 in the context of the entire statute does not dictate a finding that subsection (c)(4) applies to attainment areas as well as maintenance and nonattainment areas. Because this language is open to interpretation, the court examined the structure of the statute. In addition, the court ruled that the "structure of the Act itself creates ambiguity."

Turning next to the legislative history, the case examined the history of the Rule. Committee reports represent the most persuasive indicator of congressional intent in enacting a statute. The origin of the 1990 conformity amendments is a bill adopted by the Senate Environment and Public Works Committee. Language in the bill, however, referenced both: 1) pollutants "for which an attainment or maintenance plan is required" and 2) areas "in or near nonattainment areas." One statement implies that conformity determinations do not apply to areas that are in attainment or do not require a maintenance plan, while the other statement implies that attainment areas should be included in the conformity requirement. After examination of the bill, the court decided that there are several ambiguous portions in the bill and that the legislative history is ambiguous.

The plaintiffs asserted that earlier USEPA interpretation of the Conformity Rule applied to attainment areas because: 1) the USEPA sometimes required conformity in attainment areas; 2) there is some evidence in the legislative history that Congress (or at least one member) was aware of the USEPA's interpretation; and 3) the agency's 1980 statement that it believed Section 7506(c) was intended to apply to both attainment and nonattainment areas. Nevertheless, the court decided that neither the plain language, structure, legislative history, nor Congress' putative reliance on prior USEPA interpretations provides an unambiguous indication of whether Section 176(c) should apply to attainment areas.

Finally, the plaintiffs argued against deferring to the USEPA's interpretation of the statute, maintaining that this interpretation is contrary to the express policy underlying the statute, which would undermine the statute's goals. The court disagreed with the plaintiffs, stating there is no clear indication that Congressional intent would be frustrated by USEPA's interpretation of Section 176(c). The court decided to defer to the USEPA's interpretation of Section 176(c) of the CAA. In its conclusion, the court decided that the USEPA's interpretation of the statute was not unreasonable, and the court declined to hold the defendants liable under Section 176(c) of the CAA for a failure to promulgate conformity criteria for attainment areas. The plaintiffs' Motion for Enforcement of Prior Order was denied.

***Daubert v. Merrell Dow Pharmaceuticals Inc.* (727 F.Supp. 570; 951 F.2d 1128; 113 S.Ct. 2786)**

This case is relevant to the use of modeled emission results in conformity analysis because the validity of scientific evidence in legal proceedings is at issue. In this case, plaintiffs contended that limb-reduction birth defects were caused by an anti-nausea drug, Bendectin, used during pregnancy. Expert testimony submitted on the part of plaintiff was based upon chemical structure activity analysis, in vitro studies, in vivo studies (i.e., animal teratology) and a re-analysis of an existing epidemiology study. In addition, plaintiffs included an opinion testimony of eight experts who established that Bendectin is a teratogen that generally causes limb reduction defects. The defendant's evidence included an expert witness' review of over 30 published studies that established that there was no link between Bendectin and birth limb reduction defects.

The U.S. District Court ruled against the plaintiff because the expert witness reached conclusions that were not considered valid by the court. The court concluded that the expert's evidence was invalid because it did not include an "epidemiological study or recalculation that shows a statistically significant relationship between the ingestion of Bendectin and birth defects." Because the plaintiffs had the "burden of proof" in this case, "they must come forward with statistically significant epidemiological evidence."

The U.S. Ninth Circuit Court of Appeals concurred with the District court based upon application of the "general acceptance" tests from *Frye v. United States* in regards to scientific evidence. In *Frye v. United States* scientific technique was ruled "...admissible if it is generally accepted as a reliable technique among the scientific community." The court also stated that scientific methodology is only admissible if the method is accepted by the scientific community. The re-analysis by the plaintiff's expert witness was not accepted because it was not published nor accepted by the scientific community. To be valid, the plaintiff's re-analysis of an existing study required the "verification and scrutiny by others in the field."

Finally, the case went to the U.S. Supreme Court for a determination on "the standard for admitting expert scientific testimony in a federal trial." The Court unanimously found that "general acceptance" does not stand because it is not a "necessary precondition to admissibility of scientific evidence under Federal Rules of Evidence." *Frye v. United States*, which defined "general acceptance," superseded the adoption of the Federal Rules of Evidence, and therefore it does not apply. Based upon the Supreme Court's review of the standards of scientific evidence (discussed below) the case was vacated and remanded to the lower court.

In 1975, Congress enacted new rules of evidence for use in Federal courts (Black, 1993). The section of the Federal Rules of Evidence on which the Supreme Court focused was Rule 702: "...if scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." "General acceptance" was found by the court to be "incompatible with the Federal Rules of Evidence" and thus, "should not be applied in federal trials."

Under the rules of evidence, a trial judge should consider if scientific testimony or evidence is relevant and reliable (implied by Rule 702). A testimony that pertains to scientific knowledge "establishes a standard of evidentiary reliability." In addition, evidence must be pertinent to the case. Because "scientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes," federal judges must evaluate evidence to ensure that testimony uses reasoning or methodology that is scientifically valid and can be applied properly "to the facts in issue."

The Court suggested four ways in which scientific validity may be determined: 1) the scientific evidence should be tested; 2) the theories in the evidence should be subjected to publication and peer review; 3) the courts should note the potential rate of error involved in each study submitted as evidence; and 4) while widespread acceptance is good, evidence with little acceptance can be "viewed with skepticism."

The scientific validity of modeling has been questioned because there is a large amount of uncertainty in emission inventories. In meeting the conformity requirements, modeling that supports the plan and the future reductions that are committed to being obtained will be very important. However, some may question the

modeling in plans and the reductions that they predict. Scientific evidence and expert testimony could play a key role.

Implications if Modeling does not Result in Accurate Emissions Estimates

Cases in the courts are likely to decide to what extent emission modeling estimates will be legally binding. There are two potential causes of inaccurate emission modeling. The first possible cause is that the model does not predict accurate emission levels in the future years. Model inputs, as such, are accurate but the predicted levels did not occur. The second possible cause is that the inputs in the model were not accurate so the predicted levels were not attained. This implies inaccurate predictions of projects in the model (e.g., air quality impacts of a project greater than input in the model) or for the overall transportation system.

In either situation, the emission inventory levels that were committed to in the plan are not met. Thus far, the courts have ruled that it is necessary to meet the levels committed to in the plans (*Citizens for a Better Environment v. Deukmejian*). The courts' solution to meeting these shortfalls has been to require adoption of feasible TCMs and other control measures.

The *Conservation Law Foundation v. Environmental Protection Agency* may bring out many issues of questioning a plans modeling estimates. In some of the statements from their petition, they question whether some plans are underestimating the emission levels so that the area's plan will conform. They also question whether cumulative impacts are taken into account (more modeling inputs). The court may have to look at the inputs into the models to decide if they are accurate or if a possible conformity determination was incorrect. The scientific evidence that is used will possibly be evaluated using the four criteria set by the Supreme Court in *Daubert v. Merrell Dow*. How these criterion are applied to modeling evidence remains to be seen.

NEPA/CEQA Legal Issues Relevant to Conformity

In this section, NEPA/CEQA requirements and the conformity guidelines requirements are linked together in a litigation section of possible suit points. Meeting the requirements of each of these regulations will be key in ensuring a sound plan.

Public Involvement

Public involvement is one of the minimum legal necessities in any NEPA project. Section 1501.7 of the Council on Environmental Quality (CEQ) Regulations states:

“There shall be an early and open process for determining the scope of issue to be addressed. [Every]...agency shall invite the participation of affected Federal, state, and local agencies, any affected Indian tribe, the proponent of an action, and other interested persons (including those who might not be in accord with the action on environmental grounds).”

Due to this inclusive language, the courts have tested EISs for adequate public involvement. Environmental assessments are different in the amount of public involvement required, but again, most agency guidelines require some public notification of NEPA projects. Consequently, agencies must plan for an *appropriate* level of public involvement.

Because every project is different, neither NEPA nor agency regulations can specify what level of public review is necessary. Hence, the courts rely on tests of "reasonableness" or "good faith" and can test an agency's actions according to reasonable treatment.

If a community may be affected by a pending decision, the community should be notified. If the potential effects of an action will be substantial, individuals should be contacted. If the impacts are likely to be indirect or insubstantial, notification in newspapers is often considered sufficient.

It is also important to note that public involvement should be an ongoing activity for agencies involved in the NEPA process. If an agency has routinely notified the public of upcoming projects through a newsletter (e.g., small-scale projects included in a Transportation Improvement Program), such notification may suffice as an acceptable form of public involvement for site-specific projects that have no direct effects on any agency or person. However, public involvement on broad or programmatic EISs (e.g., Regional Transportation Plan level documents) will not suffice for public involvement on TIPs or SIPs.

Clearly Written Documents

Many courts have found EISs inadequate because of poor writing. Because EISs are required to disclose environmental consequences, it is critical that NEPA documents are clearly written and free of technical jargon (40 CFR, §1502.8).

Environmental impact statements should be written in plain language and may use appropriate graphics so that decision makers and the public can readily understand them. Statements should be based upon analysis and supporting data from the natural and social sciences.

In *Environmental Defense Fund, Inc. v. Corps. of Engineers of the U.S. Army, 1972 (470 F2d 289)*, the court found that EISs must be written in language that is understandable to non-technical minds and yet contain enough scientific reasoning to alert specialists to the particular problems within the field of their expertise (42 U.S.C.A., Section 4332, Note 108).

Alternatives

Section 1502.14, (Alternatives Including the Purposed Action), of the CEQ Regulations discusses the alternatives analysis, which is the heart of the EIS. The alternatives section, which is based on the information and analysis presented in the Affected Environment (Section 1502.15) and Environmental Consequences (Section 1502.16) sections of the EIS, should present the environmental impacts of the proposal and a reasonable range of alternatives in a comparative form. In this section, agencies are instructed to:

- Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated;
- Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits;
- Include reasonable alternatives not within the jurisdiction of the lead agency;
- Include the alternative of no action;
- Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference; and
- Include appropriate mitigation measures not already included in the proposed action or alternatives.

In CEQ's NEPA guidance titled: *Forty Most Asked Questions Concerning CEQ's NEPA Regulations* (46 FR 18026, 18027 (1981)), CEQ addressed the issue of the range of alternative to be considered. CEQ advised agencies to consider a full spectrum of alternatives, but they do not have to explore a large number, a "reasonable number" will suffice. Clearly, the reasonableness of any set of alternatives will depend on the nature of the project.

In *Sierra Club v. Watkins* (808 F. Supp. 852, 875-76 (D.C.1991)), the district court held:

“Five years ago, the Department of Energy attempted to import spent fuel rods from Taiwan through a West Coast port without filing the documentation required by NEPA. Once they were caught by an environmental group and enjoined by a poor lawsuit, the Department shifted its plans to an East Coast port and filed an EA which did not consider real alternatives.”

In summary, because the alternatives section of the EIS is considered the heart of the NEPA process, it is critical that agencies pay special attention to the presentation of alternatives as outlined in Section 1502.14 of the CEQ Regulations. The courts have consistently tested EISs for a "reasonable" treatment of alternatives; consequently, this section of the EIS warrants quality analysis to withstand the "reasonableness" test and to ensure comprehensive decisionmaking.

Supplemental EISs (New Information)

The subject of supplemental documentation is not expressly discussed in NEPA. However, it is often important that such documents satisfy the Act's "action-forcing" purposes. The CEQ Regulations:

...“[P]rovide that an agency must prepare a supplemental statement whenever there is significant new information relating to environmental concerns which is relevant to the proposed action” (Mandelker 1991).

As long as an agency has “...a meaningful opportunity to weigh the benefits of the project versus the detrimental effects” (*Marsh v. Oregon Natural Resources Council* (490 U.S. 104 L. Ed. 2d 377, 109 S. Court 1851 (1989))), the courts generally require a Supplemental Environmental Impact Statement (SEIS).

In *Marsh v. Oregon Natural Resources Council*, the Supreme Court used the "arbitrary and capricious" standard to review an agency's decision not to prepare a SEIS. Resolution of a dispute regarding an agency's decision not to prepare a SEIS is primarily based on issues of fact. Because an analysis of the relevant documents "requires a high level of technical expertise," the court deferred to "the informal discretion of the responsible federal agencies" (*Marsh v. Oregon Natural Resources Council*). However, the courts should review the record and satisfy themselves that the agency has reached a reasonable decision based on the significance or lack of significance to the EIS before deferring to the agency's decision.

In summary, new information may be obtained through the use of more accurate emission models. New models may alter the impact analysis of a proposed project on the environment; consequently, the use of new models on previously completed EISs may be necessary to ensure a project is in conformity. New information should be used to weigh the benefits of a project versus its detrimental effects. If the new information is deemed significant, a SEIS must be prepared by the appropriate agency.

Cumulative Impacts/Connected Actions

The CEQ Regulations in Section 1508.7 define a "cumulative impact" as follows:

“A ‘cumulative impact’ is the impact on the environment which results from the incremental impact of the action when added to the past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

Connected actions are defined in Section 1508.25 (a)(1) as follows:

“Actions are connected if they:

- (i) automatically trigger other actions which may require environmental impact statements.
- (ii) cannot or will not proceed unless other actions are taken previously or simultaneously.
- (iii) are interdependent parts of a larger action and depend on the action for their jurisdiction.”

In Section 1508.27(7), the CEQ Regulations require agencies to consider whether:

“The action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be awarded by terming an action temporary or by breaking it down into component parts.” (Cohen, 1993)

In *City of Tenakee Springs v. Clough* (915F.2d 1308 (9th Cir. 1990)), the court cited Section 1508.7 of the CEQ Regulations. The court also held:

“Where there are large scale plans for regional development, NEPA requires both a programmatic and site-specific EIS....This court has held that where several foreseeable similar projects in a geographical region have a cumulative impact, they should be evaluated in a single EIS....There, emphasizing the likelihood of future development, the court rewarded to the agency for further consideration of cumulative impact because the agency had examined single projects in isolation without considering the net impact that all the projects in the area might have on the environment.” (Cohen, 1993)

In *Thomas v. Peterson*, (753 F2d 754(CA9, 1985)), the court held that the U.S. Forest Service was required to prepare an impact statement covering both a proposed road and timber sales that would occur after the road was built (Mandelker 1991). The court rejected the defendant's claim that "the sales are too uncertain and too far in the future to their impacts to be analyzed along with the road" (*Thomas v. Peterson*).

In this case, the link between the road construction and logging were "connected actions." In *Thomas v. Peterson*, the court held that the environmental assessment for this project must assess these two actions as connected even if the impact of the proposed action is not significant. Deciding whether or not the proposed action has significant environmental impacts requires a separate analysis, which should be included in the decision whether to prepare an EIS or an environmental assessment (Cohen, 1993).

In summary, actions that could lead to a cumulative impact on a region or could be considered as a connected action must be analyzed in the appropriate NEPA documents. Hence, actions proposed in a TIP should not be assessed separately; these actions must be analyzed for their cumulative impacts or connectedness or both.

Mitigation Measures

Mitigation has not received a great deal of attention in the courts. Nevertheless, projects have been detained because courts have found NEPA documents inadequate in including mitigation measures.

Section 1508.20, (Mitigation), of the CEQ Regulations states that "Mitigation" includes:

- a) avoiding the impact altogether by not taking a certain action or parts of an action.
- b) minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- c) rectifying the impact by repairing, rehabilitating, and restoring the affected environment.
- d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- e) compensating for the impact by replacing or providing substitute resources or environments.

In *Prince George's County v. Holloway* (404 F Supp. 1181 (DDC,1975)), an EIS prepared for a road passing through a national forest was held inadequate because it failed to discuss mitigation measures for water quality and fish habitats (Mandelker 1991).

In summary, mitigation is critical in reducing the environmental impacts that result from a project. In transportation planning, it is important that mitigation measures be considered for projects that may disrupt the surrounding environment. For example, the development of high occupancy vehicle (HOV) lanes may require the disruption of land that surrounds an already existing highway. In this case, an agency may want to consider mitigation measures to reduce the impact of HOV lane expansion on wildlife. An example of a mitigation measure is the purchase of a plot of land adjacent to the expansion area to buffer animals from the highway. Another measure would involve the erection of a concrete wall to keep animals from entering the highway. Obviously, mitigation measures will not always be applicable to proposed transportation projects. Nevertheless, it is important that they be incorporated into transportation projects when relevant. The courts have cited other EISs for a failure to consider such measures.