# MCTC 2040 REGIONAL TRANSPORTATION PLAN

FINAL SUBSEQUENT ENVIRONMENTAL IMPACT REPORT






# Final Subsequent Environmental Impact Report for the MCTC 2011 Regional Transportation Plan

July 7, 2010

Prepared For:

MADERA CTC
Madera County Transportation Commission
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Madera, California 93637
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# 1.0 INTRODUCTION

The California Environmental Quality Act (CEQA) requires that a Final Subsequent Environmental Impact Report (FSEIR) must be prepared, certified, and considered by decision-makers prior to taking action on a project. The Final SEIR provides the Madera County Transportation Commission (MCTC) with an opportunity to respond to comments received on the Draft SEIR and to incorporate any changes or additions necessary to clarify and/or supplement the information contained in that document. This Final SEIR, therefore, represents the culmination of all environmentally related issues raised during the comment period on the Draft SEIR for the MCTC 2011 Regional Transportation Plan (RTP). In addition, this Final SEIR contains a Statement of Overriding Considerations (Exhibit A), which identifies the significant, adverse, and unavoidable impacts in the Draft SEIR. Finally, the Final SEIR includes a Mitigation Monitoring and Reporting Program (Exhibit B) that identifies the necessary processes that are required to ensure that the mitigation measures recommended in the Draft SEIR are implemented. The MCTC Board of Directors is required to balance the benefits of the proposed Project (2011 RTP) against its unavoidable environmental risks in determining whether to approve the Project.

## 1.1 FORMAT AND SCOPE

This document has been prepared by VRPA Technologies, Inc. (VRPA) to address the required components described above. The forty-five day Draft SEIR review and comment period began on April 30, 2010 and ended on June 14, 2010. Comments received and staff responses to those comments are contained in Section 2 of this Final SEIR. Section 3 provides a listing of changes, additions, and corrections to the Draft SEIR recommended by VRPA. Such changes, additions, and corrections are necessary to address revisions resulting from written comments on the Draft SEIR. In addition, this document also includes Overriding Considerations and the Statement (reference Exhibit A) and the Mitigation Monitoring and Reporting Program (reference Exhibit B).

The Final SEIR is composed of the following documents:

- Madera County 2011 Regional Transportation Plan, Draft Subsequent Environmental Impact Report, April 30, 2010
- Madera County 2011 Regional Transportation Plan, July 2010
- Madera County 2011 Regional Transportation Plan, Final Subsequent Environmental Impact Report, July 7, 2010

## 1.2 PROJECT DESCRIPTION

The project, as defined by CEQA Statutes, Section 21065, is the preparation of the 2011 revision of the RTP. MCTC has prepared the RTP as required by Section 65080 et seq., of Chapter 2.5 of the California Government Code, as well as federal guidelines pursuant to the requirements of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The RTP must also meet Transportation Conformity for the Air Quality Attainment Plan per 40 CFR Part 51 and 40 CFR Part 93. In addition, the RTP must address requirements set forth in Assembly Bill 32, the California Global Warming Solutions Act of 2006. Finally, the California Transportation Commission has prepared guidelines (most recently adopted by the Commission in April 2010, including an Addendum addressing Climate Change and Greenhouse Gas Emissions adopted by the Commission on May 29, 2008) to assist in the preparation of RTPs pursuant to Section 14522 of the Government Code.

As the designated Regional Transportation Planning Agency (RTPA), MCTC is mandated by state and federal law to update the Regional Transportation Plan every four (4) years. The last comprehensive EIR on the RTP was completed in May 2007, which addressed transportation improvement projects, programs, and funding reflected in the 2007 RTP together with additional funding from the proposed (now approved) ½ Cent Sales Tax Measure Extension (Measure "T"). Measure "C" did receive the 2/3rds voter approval required in order to pass in the November 2006 election. The 2011 revision to the RTP has been prepared to address possible environmental impacts resulting from implementation of the RTP and sources of funding that are available for programming.

The RTP is used to guide the development of the Regional Transportation Improvement Program (RTIP). The RTIP is the programming document used to plan the construction of regional transportation projects and requires State Department of Transportation (Caltrans) approval. No project-level assessments of environmental impacts will be addressed by this SEIR. The RTP is also used as a transportation planning document by each of the three member jurisdictions of MCTC. The members include the County of Madera and the cities of Chowchilla and Madera.

The RTP identifies the region's transportation needs and issues, sets forth an action plan of projects and programs to address the needs consistent with the adopted policies, and documents the financial resources needed to implement the plan. Additional areas of emphasis and policy initiatives in the 2011 RTP include Climate Change, Environmental Justice, Goods Movement, and Blueprint Planning. In addition, the 2011 RTP includes updated project lists and updated performance measures.

The RTP consists of required elements referenced in the enabling legislation and is organized into various sections.

- Chapter 1. Executive Summary
- Chapter 2. Regional Setting, State & Planning Assumptions
- Chapter 3. Policy Element
- Chapter 4. Action Element
- Chapter 5. Financial Element
- Chapter 6. Blueprint Planning
- Chapter 7. Environmental Considerations and Environmental Justice
- Chapter 8. Performance Monitoring Program

# 2.0 WRITTEN COMMENTS AND FINAL RESPONSES TO COMMENTS

(*Comments received are provided beginning on Page 2-5)*

FROM: Marshall B. Krupp, President, Community Systems Associates, Inc. – Chawanakee Unified School District

DATED: June 1, 2010

RESPONSE #1: In response to the comments received, MCTC agrees to revisions in whole or in part recommended in the comment letter. Resulting changes are reflected in Chapter 3 of this Final SEIR (Changes to the Draft SEIR).

1A. Chapter 3, Page 3-143, Impact 3.10.1 Land Use, 1st full Paragraph, has been replaced. Reference Chapter 3 of this Final SEIR.

1B. Chapter 3, Page 3-143, Section 3.10.1 Land Use Impacts, Mitigation Measure, last bullet has been replaced. Reference Chapter 3 of this Final SEIR.

1C. Chapter 3, Page 3-172, Section 3.13.1, Mitigation Measure, 1st Paragraph, has been revised. Reference Chapter 3 of this Final SEIR.

1D. Chapter 3, Page 3-190, Section 3.14.1, Mitigation Measure, 2nd Bullet has been replaced. Reference Chapter 3 of this Final SEIR.

1E. Chapter 3, Page 3-191, Section 3.14.3, Mitigation Measures, 1st Paragraph, 1st Sentence has been revised. Reference Chapter 3 of this Final SEIR.

1F. Chapter 3, Page 3-165, Section 3.12.3, Mitigation Measures, the Paragraph and Bullets have been replaced. Reference Chapter 3 of the Final SEIR.

1G. MCTC member agencies have already applied for and received Safe Routes to School (SRTS) funding for pedestrian and bicycle improvements and related plans and programs. As a result, the Draft SEIR will be amended as referenced in Chapter 3 of this Final SEIR.

1H. Agency names and the name of their representative have been added to Chapter 6. Reference Chapter 3 of this Final SEIR.

FROM: Marshall B. Krupp, President, Community Systems Associates, Inc. – Chowchilla Union High School District

DATED: June 1, 2010

RESPONSE #2: In response to the comments received, MCTC agrees to revisions in whole or in part recommended in the comment letter. Resulting changes are reflected in Chapter 3 of this Final SEIR (Changes to the Draft SEIR).

2A. Chapter 3, Page 3-143, Impact 3.10.1 Land Use, 1st full Paragraph, has been replaced. Reference Chapter 3 of this Final SEIR.

2B. Chapter 3, Page 3-143, Section 3.10.1 Land Use Impacts, Mitigation Measures, last bullet has been replaced. Reference Chapter 3 of this Final SEIR.

2C. Chapter 3, Page 3-172, Section 3.13.1, Mitigation Measure, 1st Paragraph, has been revised. Reference Chapter 3 of this Final SEIR.

2D. Chapter 3, Page 3-190, Section 3.14.1, Mitigation Measures, 2nd Bullet has been replaced. Reference Chapter 3 of this Final SEIR.

2E. Chapter 3, Page 3-191, Section 3.14.3, Mitigation Measures, 1st Paragraph, 1st Sentence has been revised. Reference Chapter 3 of this Final SEIR.

2F. Chapter 3, Page 3-165, Section 3.12.3, Mitigation Measures, the Paragraph and Bullet have been replaced. Reference Chapter 3 of the Final SEIR.

2G. MCTC member agencies have already applied for and received Safe Routes to School funding for pedestrian and bicycle improvements and plans and programs. As a result, the Draft SEIR will be amended as referenced in Chapter 3 of this Final SEIR.

2H. Agency names and their representative have been added to Chapter 6. Reference Chapter 3 of this Final SEIR.

FROM: Marshall B. Krupp, President, Community Systems Associates, Inc. – Chowchilla Elementary School District

DATED: June 1, 2010

RESPONSE #3: In response to the comments received, MCTC agrees to revisions in whole or in part recommended in the comment letter. Resulting changes are reflected in Chapter 3 of this Final SEIR (Changes to the Draft SEIR).

3A. Chapter 3, Page 3-143, Impact 3.10.1 Land Use, 1st full Paragraph, has been replaced. Reference Chapter 3 of this Final SEIR.

3B. Chapter 3, Page 3-143, Section 3.10.1 Land Use Impacts, Mitigation Measures, last bullet has been replaced. Reference Chapter 3 of this Final SEIR.

3C. Chapter 3, Page 3-172, Section 3.13.1, Mitigation Measure, 1st Paragraph, has been revised. Reference Chapter 3 of this Final SEIR.

3D. Chapter 3, Page 3-190, Section 3.14.1, Mitigation Measures, 2nd Bullet has been replaced. Reference Chapter 3 of this Final SEIR.

3E. Chapter 3, Page 3-191, Section 3.14.3, Mitigation Measures, 1st Paragraph, 1st Sentence has been revised. Reference Chapter 3 of this Final SEIR.

3F. Chapter 3, Page 3-165, Section 3.12.3, Mitigation Measures, the Paragraph and Bullet have been replaced. Reference Chapter 3 of the Final SEIR.

3G. MCTC member agencies have already applied for and received Safe Routes to School funding for pedestrian and bicycle improvements and plans and programs. As a result, the Draft SEIR will be amended as referenced in Chapter 3 of this Final SEIR.

3H. Agency names and their representative have been added to Chapter 6. Reference Chapter 3 of this Final SEIR.

FROM: Louise Brown, Pipeline Planning Assistant, Southern California Gas Company

DATE: May 5, 2010

RESPONSE #4: Thank you for your comment letter. No response is necessary.

FROM: Bill Pfanner, Supervisor, Local Energy & Land Use Assistance Unit, Special Projects Office, Fuels and Transportation Division, California Energy Commission

DATE: May 13, 2010

RESPONSE #5: While the 2011 SEIR Notice of Preparation did not indicate expected Energy and Energy Conservation impacts that would result from the 2011 Regional Transportation Plan, potential impacts and mitigation measures to fully address such impacts have been incorporated in Chapter 3 of this Final SEIR (Changes to the Draft SEIR) to ensure compliance with Appendix F of CEQA. Further, energy impacts associated with the 2011 RTP are not expected to be greater than other project alternatives analyzed in the Draft SEIR. Finally, remaining significant effects are not expected and overriding considerations and findings will not be required.

FROM: Chris Ganson, Environmental Review Office, United States Environmental Protection Agency, Region IX

DATE: Not provided

RESPONSE #6: Most of the comments received from EPA are related to the Draft 2011 RTP. As a result, a response to those comments is not necessary for purposes of this Final SEIR. Responses to RTP-related comments have been prepared by MCTC as a separate document. Two comments however, relate to the Draft RTP SEIR. The responses to those comments are provided below.

6A. Staff agrees with EPA's request to "expand discussion of impacts to critical habitat areas and connect it to a broader regional mitigation strategy in the RTP" and incorporated EPA's recommendations as mitigation measures in Chapter 3 of this Final SEIR (titled Changes to the Draft SEIR).

6B. The Draft SEIR contains information regarding the use of available data used to inform regional transportation planning decisions. The Draft SEIR provides a detailed description of data sources and information available to identify potential natural or historic resource impacts, as well as appropriate mitigation measures to address impacts associated with the short- and long-range improvement projects to be implemented by various state, local, and other agencies. The Draft SEIR is incorporated in the 2011 RTP by reference. In addition, the specific references to each data source listed in the comment letter, which was not included in the Draft SEIR, has been included in Chapter 3 of the Final SEIR (titled Changes to the Draft SEIR) including U.S. Fish & Wildlife Service's species recovery plans, the USDA Natural Resources Conservation Service wetland data, the Nature Conservancy data and regional planning document, and local non-profit and land trust group information.

Community Systems Associates, Inc.

Madera County Transp. Commission
JUN - 4 2010
Date Received

June 1, 2010

Mr. Richard Poythress, Project Administrator
**Madera County Transportation Commission**
2001 Howard Road
Suite 201
Madera, California 93637

Subject: **Comments of the Chawanakee Unified School District**
Draft 2011 Federal Transportation Improvement Program
The Draft 2011 Regional Transportation Plan
The Draft Environmental Impact Report
Corresponding Draft Conformity Analysis

Dear Mr. Poythress;

This letter is submitted by Community Systems Associates, Inc. on behalf of the **Chawanakee Unified School District** ("District"), and is presented as the formal position of the District on the Proposal as described herein. Community Systems Associates, Inc. is the retained consultant of the **Chawanakee Unified School District** and this letter has been authorized to be presented to the Madera County Transportation Commission ("MCTC").

The District is in receipt of the Madera County Transportation Commission ("MCTC") Notice of Public Hearing on the Draft 2011 Federal Transportation Improvement Program ("TIP"), the Draft 2011 Regional Transportation Plan ("RTP"), the Draft Environmental Impact Report ("Draft EIR") and the Corresponding Draft Conformity Analysis (jointly referred to as "Proposal" or "Project")

The Notice provides that the MCTC is providing a 45-day public review and comment period commencing on April 30, 2010 and conclude on June 14, 2010 with regards to the Draft EIR.

The District previously provided comments to the Notice of Preparation and further suggestions as to revisions to the administrative draft of the EIR. We are very pleased with the subsequent content of the Draft EIR and the revisions that were made to address the concerns of the District. This level of cooperation, coordination and collaboration is evidence of the commitment that the MCTC made to the District earlier on in the process and addresses our suggestions that were set forth in the responses to the Notice of Preparation.

In compliance with the schedule of the comment period on the Draft EIR, we do want to offer some general comments that would be of value in finalizing the Draft EIR. We want to bring to your attention several revisions that we offered in the attachment we sent to the MCTC on April 26, 2010 and which appears to not be included in the Draft EIR. We would ask you to reconsider the following content and include it in the Final EIR. These are submitted as our comments to the Draft EIR and were previously forward to you by e-mail. This letter is simply a formal follow up.

The following was offered and not included in the Draft EIR and we request that it be revisited and included.

▪ leaders in facilitating strategic decision-making ▪
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▪ www.communitysystemsassociates.com ▪

1) Impact 3.10.1

Content

"In addition, the projects may result in redirecting land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. This may have impacts on the ability of local agencies and special districts, including school districts to provide the public service and facilities to accommodate this redirected growth and development pursuant to their adopted short- and long-range master plans." 1A

Mitigation measure

"Individual projects will be consistent with the land use plans and public services and facilities plans, and all applicable policies, rules, regulations and requirements that designate areas for urban land use growth and development with regards to the preservation of agricultural lands that support the economic viability of agricultural activities and the public services and facilities required to serve the growth and development of the County." 1B

2) Impact 3.13.1

Mitigation measure

"As part of project-specific environmental review, the individual improvement project proponent or local jurisdiction shall be responsible for completing a police, fire, and medical services analysis and study to determine the project-specific impacts on police, fire and emergency services in the County and provide the mitigation measures that shall reduce the impacts to a level of less-than-significant. In addition, the individual improvement project proponent or local jurisdiction shall be responsible for completing a school district bus transportation routing and schedules analysis and study to determine the project-specific impacts on school district bus routing and schedules and provide the mitigation measures that shall reduce the impacts to a level of less-than-significant. The project implementing agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to and during constructions. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures." 1C

3) 3.14.1

Mitigation Measure

"Local agencies shall regularly update general, area, community and specific plans to reflect the current status of future street and highway improvements. The timing of improvements shall also be regularly updated. In addition, local agencies shall maintain a comprehensive streets and highway master plan which is consistent with the General Plan of the local agency, and other area, community and specific plans, as applicable. These measures will help MCTC identify appropriate and available funding for planned street and highway improvements along the regional street and road system during development of future RTPs." 1D

(Note: it is important that this be "required", not simply encouraged, particularly when many agencies do not regularly review and update their general plans and they then are not current.)

4) 3.14.3

Mitigation Measure

"As part of project-specific environmental review, the individual improvement project proponent or local jurisdiction shall be responsible for completing an analysis and study to determine the project-specific impacts on affected local school districts, public transit agencies, emergency service providers, or other affected community service agencies to address potential impacts of a project on an agency's transportation program including potential hazards or unsafe conditions, re-routing requirements, and route scheduling and delays and provide the mitigation measures that shall reduce the impacts to a level of less-than-significant. The project implementing agency or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures prior to and during constructions. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures." 1E

In addition, we could not find the MCTC original content or the amended text regarding the growth inducing topic, as follows. We would request that this be included in the Final EIR.

"The individual improvement project proponent or local jurisdiction shall identify and evaluate the impacts associated with the direct and indirect growth inducing potential of individual projects as a part of the appropriate improvement project-specific environmental review and shall identify mitigation measures to reduce the impacts to a level of less-than-significant. Individual environmental documents shall quantify indirect impacts (growth that could be facilitated or induced) on public services, public facilities, and utilities to the extent feasible shall identify mitigation measures to reduce the impacts to a level of less-than-significant. The project implementing agency or local jurisdiction shall amend it General Plan, area plan, specific plan and any other land use documents as appropriate to reduce the impacts and shall communicated to MCTC. The project implementing agency or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures.

- Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall cooperate, coordinate and collaborate with applicable federal, state and applicable city and county agencies, and all agencies, districts, and entities that are responsible and oversee the public services, public facilities and utilities to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the project and the mitigation of impacts following construction of the project in terms of the impacts of projects on public services, public facilities and utilities resulting from the direct or indirect growth inducing impacts of the project and the ability of local agencies to provide public services, public facilities and utilities required for the areas affected. 1F

- Following construction of the project, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county agencies and all agencies, districts, and entities that are responsible and oversee the public services, public facilities and utilities to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the project and the mitigation of impacts following construction of the project in terms of the impacts of projects on public services, ;public facilities and utilities resulting from the

direct or indirect growth inducing impacts of the project and the ability of local agencies to provide public services, public facilities and utilities required for the areas affected."

Additionally, we are somewhat concerned with the timelines for the adoption of the Safe Routes to School Policy and the Implementation of a Pilot Program and the Workshop with Cities, Counties and School Districts to Identify other Opportunities for Collaboration that may reduce Greenhouse Emissions.

The Draft EIR states:

"Within 3 years from the adoption of the 2011 RTP, MCTC shall adopt a Safe Routes to Schools (SRTS) policy to promote the practice of safe bicycling and walking to and from schools throughout the Plan Area in order to reduce traffic congestion, improve air quality, and enhance neighborhood safety. There are both federal and state funding programs for SRTS. As a regional agency, MCTC is an eligible applicant under the federal program for both infrastructure and non-infrastructure projects. Under the state program, only cities and counties are eligible applicants for infrastructure projects only. (Caltrans, 2007) With the passage of the Safe Routes to School bill (AB 1475), a "one third" distribution formula for federal safety funds to be allocated in equal amounts to: state highways, local roads, and Safe Routes to School (SRTS) construction program was established."

1G

We would suggest that this occur within one (1) year from the adoption of the 2011 RTP.

In addition, the Draft EIR states:

"In addition, MCTC will host a regional workshop for all cities, counties, school districts and transit operators within the region to identify other potential opportunities for collaboration that would reduce greenhouse gas impacts. At a minimum, the issues discussed will include the findings from the Safe Routes to School activities described above, opportunities to increase the number of students with bus or other transit options to get to and from school, and integrating school siting practices with goals of promoting walkable neighborhoods with a wide range of easily accessible services."

There is no timeline for this regional workshop. We would suggest that it occur within the same time period. The districts believe that there are a number of regional land use planning and school facilities measures that could reduce greenhouse gas impacts and that these should be considered as soon as possible, particularly in conjunction with the update of the County of Madera General Plan.

Finally, you may want to add the names of the District and our company name to Section 6.2 of the Draft EIR.

1H

With these matters addressed, we can fully support the Draft EIR and the RTP. Again, I want to sincerely offer my appreciation for how the MCTC has stepped up and addressed our concerns, and the cooperation that has been offered.

We hereby rescind any further comments which were offered in our January 8, 2010 letter in response to the Notice of Preparation and are of the view that the MCTC has now adequately addressed the District's concerns subject to the comments contained herein.

Mr. Richard Poythress, Project Administrator
**Madera County Transportation Commission**
June 1, 2010
Page 5

**Notification**

We hereby request that any further notices of meetings and public hearings on this matter be forwarded to the following for consideration:

Dr. Stephen Foster, Superintendent
**Chawanakee Unified School District**
P.O. Box 400
33030 Road 228
North Fork, California 93643

Mr. Marshall B. Krupp
**Community Systems Associates, Inc.**
3367 Corte Levanto
Costa Mesa, California 92626

The District further requests that all of the final related documents associated with the RTP, including text and maps be converted to a pdf file and posted on the MCTC website or that CD's be made available to the District for further review.

The District is prepared to meet with the MCTC, the MCTC's consultant and representatives, and the MCTC's environmental consultant to discuss the contents of this letter.

Again, I want to thank you for your cooperation, assistance and consideration. It has been a pleasure working with the MCTC staff and consultant. We look forward to being in support of the RTP and sharing with the Commission our final thoughts.

Sincerely,

Community Systems Associates, Inc.

*Marshall Krupp*

Mr. Marshall B. Krupp
President
marshallkrupp@communitysystemsassociates.com

MBK:mbk
Madera Co - Madera CTC RTP Draft EIR Comments 06-01-10.doc

Mr. Richard Poythress, Project Administrator
**Madera County Transportation Commission**
June 1, 2010
Page 6

CC: Ms. Patricia Taylor, Executive Director
**Madera County Transportation Commission**
2001 Howard Road
Suite 201
Madera, California 93637

Dr. Stephen Foster, Superintendent
**Chawanakee Unified School District**
P.O. Box 400
33030 Road 228
North Fork, California 93643

Community Systems Associates, Inc.

Madera County Transp. Commission
JUN – 4 2010
Date Received

June 1, 2010

Mr. Richard Poythress, Project Administrator
**Madera County Transportation Commission**
2001 Howard Road
Suite 201
Madera, California 93637

Subject: **Comments of the Chowchilla Union High School District**
Draft 2011 Federal Transportation Improvement Program
The Draft 2011 Regional Transportation Plan
The Draft Environmental Impact Report
Corresponding Draft Conformity Analysis

Dear Mr. Poythress;

This letter is submitted by Community Systems Associates, Inc. on behalf of the **Chowchilla Union High School District** ("District"), and is presented as the formal position of the District on the Proposal as described herein. Community Systems Associates, Inc. is the retained consultant of the **Chowchilla Union High School District** and this letter has been authorized to be presented to the Madera County Transportation Commission ("MCTC").

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www.communitysystemsassociates.com

1) Impact 3.10.1

Content

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- Following construction of the project, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county agencies and all agencies, districts, and entities that are responsible and oversee the public services, public facilities and utilities to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the project and the mitigation of impacts following construction of the project in terms of the impacts of projects on public services, ;public facilities and utilities resulting from the

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We would suggest that this occur within one (1) year from the adoption of the 2011 RTP.

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"In addition, MCTC will host a regional workshop for all cities, counties, school districts and transit operators within the region to identify other potential opportunities for collaboration that would reduce greenhouse gas impacts. At a minimum, the issues discussed will include the findings from the Safe Routes to School activities described above, opportunities to increase the number of students with bus or other transit options to get to and from school, and integrating school siting practices with goals of promoting walkable neighborhoods with a wide range of easily accessible services."

There is no timeline for this regional workshop. We would suggest that it occur within the same time period. The districts believe that there are a number of regional land use planning and school facilities measures that could reduce greenhouse gas impacts and that these should be considered as soon as possible, particularly in conjunction with the update of the County of Madera General Plan.

Finally, you may want to add the names of the District and our company name to Section 6.2 of the Draft EIR. 2H

With these matters addressed, we can fully support the Draft EIR and the RTP. Again, I want to sincerely offer my appreciation for how the MCTC has stepped up and addressed our concerns, and the cooperation that has been offered.

We hereby rescind any further comments which were offered in our January 8, 2010 letter in response to the Notice of Preparation and are of the view that the MCTC has now adequately addressed the District's concerns subject to the comments contained herein.

**Notification**

We hereby request that any further notices of meetings and public hearings on this matter be forwarded to the following for consideration:

Mr. Ron Seals, Superintendent
**Chowchilla Union High School District**
805 Humboldt Avenue
Chowchilla, California 93610

Mr. Marshall B. Krupp
**Community Systems Associates, Inc.**
3367 Corte Levanto
Costa Mesa, California 92626

The District further requests that all of the final related documents associated with the RTP, including text and maps be converted to a pdf file and posted on the MCTC website or that CD's be made available to the District for further review.

The District is prepared to meet with the MCTC, the MCTC's consultant and representatives, and the MCTC's environmental consultant to discuss the contents of this letter.

Again, I want to thank you for your cooperation, assistance and consideration. It has been a pleasure working with the MCTC staff and consultant. We look forward to being in support of the RTP and sharing with the Commission our final thoughts.

Sincerely,

Community Systems Associates, Inc.

*Marshall Krupp*

Mr. Marshall B. Krupp
President
marshallkrupp@communitysystemsassociates.com

MBK:mbk
Madera Co - Madera CTC RTP Draft EIR Comments 06-01-10.doc

Mr. Richard Poythress, Project Administrator
**Madera County Transportation Commission**
June 1, 2010
Page 6

CC: Ms. Patricia Taylor, Executive Director
**Madera County Transportation Commission**
2001 Howard Road
Suite 201
Madera, California 93637

Mr. Ron Seals, Superintendent
**Chowchilla Union High School District**
805 Humboldt Avenue
Chowchilla, California 93610

Community Systems Associates, Inc.

Madera County Transp. Commission
JUN - 4 2010
Date Received

June 1, 2010

Mr. Richard Poythress, Project Administrator
**Madera County Transportation Commission**
2001 Howard Road
Suite 201
Madera, California 93637

Subject: **Comments of the Chowchilla Elementary School District**
Draft 2011 Federal Transportation Improvement Program
The Draft 2011 Regional Transportation Plan
The Draft Environmental Impact Report
Corresponding Draft Conformity Analysis

Dear Mr. Poythress;

This letter is submitted by Community Systems Associates, Inc. on behalf of the **Chowchilla Elementary School District** ("District"), and is presented as the formal position of the District on the Proposal as described herein. Community Systems Associates, Inc. is the retained consultant of the **Chowchilla Elementary School District** and this letter has been authorized to be presented to the Madera County Transportation Commission ("MCTC").

The District is in receipt of the Madera County Transportation Commission ("MCTC") Notice of Public Hearing on the Draft 2011 Federal Transportation Improvement Program ("TIP"), the Draft 2011 Regional Transportation Plan ("RTP"), the Draft Environmental Impact Report ("Draft EIR") and the Corresponding Draft Conformity Analysis (jointly referred to as "Proposal" or "Project")

The Notice provides that the MCTC is providing a 45-day public review and comment period commencing on April 30, 2010 and conclude on June 14, 2010 with regards to the Draft EIR.

The District previously provided comments to the Notice of Preparation and further suggestions as to revisions to the administrative draft of the EIR. We are very pleased with the subsequent content of the Draft EIR and the revisions that were made to address the concerns of the District. This level of cooperation, coordination and collaboration is evidence of the commitment that the MCTC made to the District earlier on in the process and addresses our suggestions that were set forth in the responses to the Notice of Preparation.

In compliance with the schedule of the comment period on the Draft EIR, we do want to offer some general comments that would be of value in finalizing the Draft EIR. We want to bring to your attention several revisions that we offered in the attachment we sent to the MCTC on April 26, 2010 and which appears to not be included in the Draft EIR. We would ask you to reconsider the following content and include it in the Final EIR. These are submitted as our comments to the Draft EIR and were previously forward to you by e-mail. This letter is simply a formal follow up.

The following was offered and not included in the Draft EIR and we request that it be revisited and included.

▪ leaders in facilitating strategic decision-making ▪
▪ 3367 Corte Levanto ▪ Costa Mesa, Ca. 92626 ▪ 714-838-9900 ▪ 714-838-9900 (fax) ▪
▪ www.communitysystemsassociates.com ▪

1) Impact 3.10.1

Content

"In addition, the projects may result in redirecting land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. This may have impacts on the ability of local agencies and special districts, including school districts to provide the public service and facilities to accommodate this redirected growth and development pursuant to their adopted short- and long-range master plans." 3A

Mitigation measure

"Individual projects will be consistent with the land use plans and public services and facilities plans, and all applicable policies, rules, regulations and requirements that designate areas for urban land use growth and development with regards to the preservation of agricultural lands that support the economic viability of agricultural activities and the public services and facilities required to serve the growth and development of the County." 3B

2) Impact 3.13.1

Mitigation measure

"As part of project-specific environmental review, the individual improvement project proponent or local jurisdiction shall be responsible for completing a police, fire, and medical services analysis and study to determine the project-specific impacts on police, fire and emergency services in the County and provide the mitigation measures that shall reduce the impacts to a level of less-than-significant. In addition, the individual improvement project proponent or local jurisdiction shall be responsible for completing a school district bus transportation routing and schedules analysis and study to determine the project-specific impacts on school district bus routing and schedules and provide the mitigation measures that shall reduce the impacts to a level of less-than-significant. The project implementing agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to and during constructions. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures." 3C

3) 3.14.1

Mitigation Measure

"Local agencies shall regularly update general, area, community and specific plans to reflect the current status of future street and highway improvements. The timing of improvements shall also be regularly updated. In addition, local agencies shall maintain a comprehensive streets and highway master plan which is consistent with the General Plan of the local agency, and other area, community and specific plans, as applicable. These measures will help MCTC identify appropriate and available funding for planned street and highway improvements along the regional street and road system during development of future RTPs." 3D

(Note: it is important that this be "required", not simply encouraged, particularly when many agencies do not regularly review and update their general plans and they then are not current.)

4) 3.14.3

Mitigation Measure

"As part of project-specific environmental review, the individual improvement project proponent or local jurisdiction shall be responsible for completing an analysis and study to determine the project-specific impacts on affected local school districts, public transit agencies, emergency service providers, or other affected community service agencies to address potential impacts of a project on an agency's transportation program including potential hazards or unsafe conditions, re-routing requirements, and route scheduling and delays and provide the mitigation measures that shall reduce the impacts to a level of less-than-significant. The project implementing agency or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures prior to and during constructions. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures." 3E

In addition, we could not find the MCTC original content or the amended text regarding the growth inducing topic, as follows. We would request that this be included in the Final EIR.

"The individual improvement project proponent or local jurisdiction shall identify and evaluate the impacts associated with the direct and indirect growth inducing potential of individual projects as a part of the appropriate improvement project-specific environmental review and shall identify mitigation measures to reduce the impacts to a level of less-than-significant. Individual environmental documents shall quantify indirect impacts (growth that could be facilitated or induced) on public services, public facilities, and utilities to the extent feasible shall identify mitigation measures to reduce the impacts to a level of less-than-significant. The project implementing agency or local jurisdiction shall amend it General Plan, area plan, specific plan and any other land use documents as appropriate to reduce the impacts and shall communicated to MCTC. The project implementing agency or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures. 3F

- Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall cooperate, coordinate and collaborate with applicable federal, state and applicable city and county agencies, and all agencies, districts, and entities that are responsible and oversee the public services, public facilities and utilities to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the project and the mitigation of impacts following construction of the project in terms of the impacts of projects on public services, public facilities and utilities resulting from the direct or indirect growth inducing impacts of the project and the ability of local agencies to provide public services, public facilities and utilities required for the areas affected.

- Following construction of the project, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county agencies and all agencies, districts, and entities that are responsible and oversee the public services, public facilities and utilities to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the project and the mitigation of impacts following construction of the project in terms of the impacts of projects on public services, ;public facilities and utilities resulting from the

direct or indirect growth inducing impacts of the project and the ability of local agencies to provide public services, public facilities and utilities required for the areas affected."

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3G

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3H

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**Notification**

We hereby request that any further notices of meetings and public hearings on this matter be forwarded to the following for consideration:

Dr. Charles Martin, Superintendent
**Chowchilla Elementary School District**
355 N. 5th Street
Chowchilla, California 93610

Mr. Marshall B. Krupp
**Community Systems Associates, Inc.**
3367 Corte Levanto
Costa Mesa, California 92626

The District further requests that all of the final related documents associated with the RTP, including text and maps be converted to a pdf file and posted on the MCTC website or that CD's be made available to the District for further review.

The District is prepared to meet with the MCTC, the MCTC's consultant and representatives, and the MCTC's environmental consultant to discuss the contents of this letter.

Again, I want to thank you for your cooperation, assistance and consideration. It has been a pleasure working with the MCTC staff and consultant. We look forward to being in support of the RTP and sharing with the Commission our final thoughts.

Sincerely,

Community Systems Associates, Inc.

*Marshall Krupp*

Mr. Marshall B. Krupp
President
marshallkrupp@communitysystemsassociates.com

MBK:mbk
Madera Co - Madera CTC RTP Draft EIR Comments 06-01-10.doc

Southern California Gas Company
A Sempra Energy utility®


404 N. Tipton Street
Visalia, CA 93292-6407

May 5, 2010

Madera County Transportation Commission
2001 Howard Road, Suite 201
Madera, California 93637

Attention: Richard Poythress, Transportation Planner

Subject: Notice of Availability of a Subsequent Environment Impact Report (SEIR) for the Proposed MCTC 2011 Regional Transportation Plan (RTP)

The subject project is not within the bounds of our service area. Thank you for the opportunity to respond. 4

Sincerely,

Louise Brown/jp

Louise Brown/jp
Pipeline Planning Assistant

LB/jp

xc: Ed Aguirre

STATE OF CALIFORNIA – NATURAL RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, *Governor*

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

Madera County Transp. Commission
MAY 20
Date Received

May 13, 2010

Richard Poythress
Madera County Transportation Commission
2001 Howard Road, Suite 201
Madera, CA 93637

Dear Mr. Poythress:

The California Energy Commission has received the Madera County Transportation Commission's Subsequent EIR titled MCTC 2011 Regional Transportation Plan, SCH 2001021025 that was submitted on 4/30/2010 for comments due by 6/14/2010. After careful review, the Energy Commission has found the following:

We would like to assist in reducing the energy usage involved in your project. Please refer to the enclosed Appendix F of the California Environmental Quality Act for how to achieve energy conservation. 5

In addition, the Energy Commission's *Energy Aware Planning Guide* is also available as a tool to assist in your land use planning. For further information on how to utilize this guide, please visit www.energy.ca.gov/energy_aware_guide/index.html.

Thank you for providing us the opportunity to review/comment on your project. We hope that our comments will be helpful in your environmental review process.

If you have any further questions, please call Gigi Tien at (916) 651-0566.

Sincerely,

Bill Pfanner

BILL PFANNER
Supervisor, Local Energy & Land Use Assistance Unit
Special Projects Office
Fuels and Transportation Division
California Energy Commission
1516 Ninth Street, MS 23
Sacramento, CA 95814

Enclosure

*Appendix F*

# ENERGY CONSERVATION

## I. Introduction

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

(1) decreasing overall per capita energy consumption,
(2) decreasing reliance on natural gas and oil, and
(3) increasing reliance on renewable energy sources.

In order to assure that energy implications are considered in project decisions, the California Environmental Quality Act requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

Energy conservation implies that a project's cost effectiveness be reviewed not only in dollars, but also in terms of energy requirements. For many projects, lifetime costs may be determined more by energy efficiency than by initial dollar costs.

## II. EIR Contents

Potentially significant energy implications of a project should be considered in an EIR. The following list of energy impact possibilities and potential conservation measures is designed to assist in the preparation of an EIR. In many instances, specific items may not apply or additional items may be needed.

A. Project Description may include the following items:
   1. Energy consuming equipment and processes which will be used during construction, operation, and/or removal of the project. If appropriate, this discussion should consider the energy intensiveness of materials and equipment required for the project.
   2. Total energy requirements of the project by fuel type and end use.
   3. Energy conservation equipment and design features.
   4. Initial and life-cycle energy costs or supplies.
   5. Total estimated daily trips to be generated by the project and the additional energy consumed per trip by mode.

B. Environmental Setting may include existing energy supplies and energy use patterns in the region and locality.

C. Environmental Impacts may include:
   1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project's life cycle including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
   2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
   3. The effects of the project on peak and base period demands for electricity and other forms of energy.
   4. The degree to which the project complies with existing energy standards.
   5. The effects of the project on energy resources.
   6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

D. Mitigation Measures may include:
   1. Potential measures to reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, maintenance and/or removal. The discussion should explain why certain measures were incorporated in the project and why other measures were dismissed.
   2. The potential of siting, orientation, and design to minimize energy consumption, including transportation energy.
   3. The potential for reducing peak energy demand.
   4. Alternate fuels (particularly renewable ones) or energy systems.
   5. Energy conservation which could result from recycling efforts.

E. Alternatives should be compared in terms of overall energy consumption and in terms of reducing wasteful, inefficient and unnecessary consumption of energy.

F. Unavoidable Adverse Effects may include wasteful, inefficient and unnecessary consumption of energy during the project construction, operation, maintenance and/or removal that cannot be feasibly mitigated.

G. Irreversible Commitment of Resources may include a discussion of how the project preempts future energy development or future energy conservation.

H. Short-Term Gains versus Long-Term Impacts can be compared by calculating the energy costs over the lifetime of the project.

I. Growth Inducing Effects may include the estimated energy consumption of growth induced by the project.

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION IX**
**75 Hawthorne Street**
**San Francisco, CA 94105**

Richard Poythress
Madera County Transportation Commission
2001 Howard Road, Suite 201
Madera, CA 93637

Subject: U.S. EPA Comments on the Madera County Transportation Commission Regional Transportation Plan and Draft Environmental Impact Report

Dear Mr. Poythress:

The U.S. Environmental Protection Agency (EPA) appreciates the opportunity to provide comments on the Madera County Transportation Commission (MCTC) 2011 Draft Regional Transportation Plan (RTP) and Draft Environmental Impact Report (DEIR). EPA is committed to the goal of incorporating environmental considerations early in the transportation planning process. Early coordination results in greater opportunities to avoid sensitive resources and minimize impacts associated with future transportation projects.

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) directs metropolitan planning organizations (MPOs) to consult with resource agencies while developing long-range transportation plans. It also requires such plans to discuss potential environmental mitigation activities and potential locations for these activities to restore and maintain environmental functions that could be affected by the plan. While EPA did not complete a comprehensive review of the MCTC RTP, we provide the following comments in support of compliance with these requirements. While we understand some of the provided recommendations below may not be able to be incorporated into this RTP revision, we hope that the concepts and principles identified can be incorporated into the next RTP revision.

**Delineate Robust Measures to Improve Air Quality through Travel Efficiency**

Air quality in the San Joaquin Valley is among the poorest in the country, causing health and environmental impacts for its residents and costs to its economy totaling approximately $1600 per capita annually. The valley's geography and meteorology traps pollutants, so special attention must be given to reducing the amount of pollutants emitted. Transportation within the valley contributes a significant portion of these pollutants, and conversely reduction of vehicle travel can provide reductions for all pollutants. Reducing emissions from transportation is

necessary to improving the valley's air quality. While improvements in fuel efficiency and vehicle technology will contribute to a reduction in emissions, substantial focus on and investment in travel efficiency measures (e.g. smart growth and transportation demand management (TDM)) is also needed to further reduce emissions in the San Joaquin Valley.

**Use the RTP Process to Spur Transportation Efficient Growth That Accomplishes Multiple Objectives**

A regional transportation planning process provides an opportunity to focus growth and activity where it most benefits the region. Compact development built in infill locations shortens trip distances; transit-oriented development leads to a greater share of transit use; mixing of uses accomplishes both and also creates opportunities for active transportation modes. Such development patterns, and the transportation patterns they help create, in turn can create environmental and livability benefits. These concepts and others are included in Caltrans' recently completed *Smart Mobility 2010: A Call to Action for the New Decade.* In particular, EPA would like to call attention to its discussion of performance measures aimed at quantifying the benefits of integrated planning:

> Transportation performance measures forecast, evaluate, and monitor the degree to which the transportation system accomplishes adopted public goals and mobility objectives. Smart Mobility Performance Measures demonstrate the relationship between integrated transportation and land use decisions and the consequent effects on the full range of economic, social, and environmental conditions. (p. 50)

As detailed in the document, EPA recommends incorporation of carefully chosen performance measures to inform and guide planning efforts.

EPA, the US Department of Housing and Urban Development (HUD) and the US Department of Transportation (DOT) recently joined in a partnership to support measures to improve livability and sustainability. We encourage you to consider the principles identified through this partnership when working to integrate the regional blueprint concept into regional planning. More information on this partnership, including grant opportunities, can be found at http://www.epa.gov/smartgrowth/partnership/. Programs offered by the partnership, including funding opportunities, can be found at http://www.epa.gov/smartgrowth/pdf/2010_0506_leveraging_partnership.pdf.

**Clarify in the RTP How the Ongoing Regional Blueprint Effort Influenced Any Current Design and Route Network Location Decisions.**

EPA recognizes that San Joaquin Valley MPOs intend to apply the ongoing regional blueprint process to identify preferred growth scenarios for the future which will serve as the foundation for determining a Sustainable Community Strategy. EPA recommends that, from a regional perspective, the RTP identify how proposed transportation projects have been planned to (1) more efficiently use existing infrastructure, for example by incorporating intelligent transportation systems or improving transit service, rather than adding new infrastructure; (2) satisfy regional residents' need for efficient access to goods and services in the way that causes the least environmental and social harm; and (3) avoid and minimize harm to high quality

resources and habitat. The RTP should also identify what design and route network location decisions were proposed in order to avoid and/or minimize impacts to resources. It should be clear how information about resources, including information from existing resource documents, has informed decisions about the route network.

In the next RTP cycle, SB 375 will require the preparation of a Sustainable Communities Strategy (SCS). In a growing region, the SCS provides an excellent opportunity to consider land use and environmental implications of transportation network improvements and integrate smart growth opportunities into the RTP. In its SCS, EPA recommends that including discussions of the other goals and criteria of the regional blueprint and how each relates to and/or influences the RTP. EPA also encourages providing support and resources to local jurisdictions to make their general plans and proposed projects consistent with the RTP and the San Joaquin Valley Blueprint (http://www.valleyblueprint.org/).

EPA, the US Department of Housing and Urban Development (HUD) and the US Department of Transportation (DOT) recently joined in a partnership to support measures to improve livability and sustainability. We encourage MCTC to consider the principles identified through this partnership when working to integrate the blueprint concept into regional planning. As mentioned above, more information on this partnership, including grant opportunities, can be found at http://www.epa.gov/smartgrowth/partnership/. A summary of Sustainability Programs at HUD, DOT, and EPA is enclosed.

**Discuss Greenhouse Gas Implications and Preparation for a Carbon Constrained Future Transportation Network.**

Many factors influence transportation greenhouse gas emissions. While population and employment growth drive transportation activity, a number of other factors also influence travel behavior, many of which MPOs are in a position to influence directly or indirectly.

A significant fraction of the built environment that will exist in the area affected by this RTP has yet to be built. Thus, significant opportunity exists to make substantial changes to land use development patterns. Because land use has significant direct influence on factors such as mode choice and average trip distance, and therefore indirect influence on factors such as air quality and greenhouse gas emissions, opportunity exists for significant change from current trends. EPA recommends including a discussion of estimates of the range of possibility with respect to these factors, and a discussion of the factors limiting these possibilities (e.g. funding, institutions).

EPA recognizes that MPOs do not have direct land use control. They can, however, facilitate local jurisdictions in the region, coordinating and building consensus through blueprint planning. A number of incentive programs are available to help fund such coordination (see attachment). Further, an MPO can use its role in transportation network planning to influence growth.

EPA recommends including discussion of both near-term transportation demand management strategies and more aggressive potential future solutions. While we recognize there may not be an opportunity to include a comprehensive discussion and analysis of these measures in this RTP update, we recommend expanding this discussion as feasible in this RTP with an eye toward the next RTP cycle. We recommend such a discussion focus primarily on opportunities and secondarily on constraints.

**Discuss Impacts to Critical Habitat Areas and Connect It to a Broader Regional Mitigation Strategy in the RTP.**

EPA strongly recommends avoiding biologically sensitive habitats when planning a regional transportation network. Where applicable open space plans, conservation areas, mitigation banks, conservation plans (such as Habitat Conservation Plans (HCPs) and Natural Community Conservation Planning programs), and high value resource areas should be identified and avoided at the regional transportation planning phase, rather than waiting until project implementation. Choices involving both roadway network placement and land use are decided or highly influenced by the regional transportation planning process and can have large implications for biologically sensitive areas.

The following are EPA's recommendations for biological and sensitive habitat mitigation:

- Use resource data to inform transportation decision-making.
- Use watershed, conservation, and recovery plans to identify important environmental considerations for the region, such as critical wildlife corridors, the most important areas to protect for sensitive species, and areas with a high concentration of resources.
- Give conservation plans as much weight as General Plans when planning transportation investments.
- Incorporate concepts such as 100 to 200 foot buffers for stream corridors, and identification and improvement of priority culverts that currently restrict wildlife corridors and natural processes of stream and river systems.
- Use parcel maps to identify larger, undivided parcels for ease of acquisition and preservation, and designate areas as potential future mitigation sites.
- Consider the resource, "Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects" (2006)[1] which encourages Federal, State, Tribal and Local partners involved in infrastructure planning, design, review, and construction to use flexibility in regulatory processes. Specifically, Eco-Logical puts forth the conceptual groundwork for integrating plans across agency boundaries, and endorses ecosystem-based mitigation - an innovative method of mitigating infrastructure impacts that cannot be avoided.

6A

[1] Eco-logical is available on-line at: http://www.environment.fhwa.dot.gov/ecological/eco_index.asp. Information on pilots using Eco-logical principals is available on-line at: http://www.trb.org/StrategicHighwayResearchProgram2SHRP2/Public/Pages/capacitypilottests_334.aspx .

The Regional Mitigation Strategy contained in the RTP should also establish the foundation for innovative regional mitigation solutions:

- Identify financial mechanisms to fund mitigation, such as development fees, sales tax, or the use of funds from alternative methods to identify and protect critical resource areas.
- Establish conservation easements that connect to and expand existing conservation areas.
- Describe locally-developed measures such as county/city designation of open-space, measures requiring development set-backs near streams, etc.

**Describe the Use of Available Data to Inform Regional Transportation Planning Decisions.**

SAFETEA-LU directs MPOs to compare transportation plans with other plans, maps, and data of inventories of natural or historic resources, if available. The RTP should therefore include a discussion of other data, plans, or maps that may be useful to inform long-range transportation planning. EPA recommends that the RTP specifically describe how the proposed transportation network has been designed to avoid resources identified in data sources such as those identified below: 6B

- U.S. Fish & Wildlife Service species recovery plans
- USDA Natural Resources Conservation Service wetland data
- Nature Conservancy data and regional planning documents
- California Department of Fish and Game Natural Diversity Database
- Local non-profit and land trust group information

EPA values the opportunity to be involved in the regional transportation planning process. When the final RTP and EIR are available, please send a copy of each to the address above (mail code CED-2). If you have any questions about our comments, please contact me at 415-947-4121 or ganson.chris@epa.gov.

Sincerely,

Chris Ganson
Environmental Review Office

Enclosure: Leveraging the Partnership: DOT, HUD, and EPA Programs for Sustainable Communities

Page 5 of 6

cc: Garth Hopkins, Caltrans Headquarters
Christine Cox-Kovacevich, Caltrans Central Region
Aimee Kratovil, Federal Highway Administration
Eric Eidlin, Federal Transit Administration
Roberta Gerson, US Fish and Wildlife Service

# 3.0 CHANGES, ADDITIONS AND CORRECTIONS TO THE DRAFT EIR

In response to the comments received and responses included in Chapter 2 of this Final SEIR, MCTC recommends the following changes to the Draft SEIR:

- Chapter 3, Page 3-62, Section 3.4.2, under the subsection titled "Mitigation Measures"; add the following to the end of the list of measures:

  - Use resource data to inform transportation decision-making.
  - Use watershed, conservation, and recovery plans to identify important environmental considerations for the MCTC region, such as critical wildlife corridors, the most important areas to protect for sensitive species, and areas with a high concentration of resources.
  - Give conservation plans as much weight as General Plans when planning transportation investments.
  - Incorporate concepts such as 100 to 200 foot buffers for stream corridors, and identification and improvement of priority culverts that currently restrict wildlife corridors and natural processes of stream and river systems.
  - Use parcel maps to identify larger, undivided parcels for ease of acquisition and preservation, and designate areas as potential future mitigation sites.
  - Consider the resource, "Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects" (2006) which encourages Federal, State, Tribal and Local partners involved in the infrastructure planning, design, review, and construction to use flexibility in regulatory processes.
  - Identify financial mechanisms to fund mitigation, such as development fees, sales tax, or the use of funds from alternative methods to identify and protect critical resource areas.
  - Establish conservation easements that connect to and expand existing conservation areas.
  - Describe locally-developed measures such as designated open space, measures requiring development set-backs near streams, etc.
  - The following list of data resources should be referenced during development of biotic plans and studies for transportation improvement projects:
    - U.S. Fish & Wildlife Service species recovery plans
    - USDA Natural Resources Conservation Service wetland data
    - Nature Conservancy data and regional planning documents
    - California Department of Fish and Game Natural Diversity Database
    - Local non-profit and land trust group information

- Page 3-85, 1st Bullet titled: Adopt Safe Routes to School (SRTS) Policy and Implement Pilot Program and Conduct Workshop with Cities, Counties and School Districts to Identify other Opportunities for Collaboration that may reduce Greenhouse Emissions , revise as follows:

  - Continue to Work with Member Agencies Regarding the Safe Routes to School (SRTS) Policy and Program and Conduct Workshop with Cities, the County, and School Districts to Identify other Opportunities for Collaboration that may reduce GHG Emissions.

    Continue to work with local agencies on development of Safe Routes to Schools (SRTS) policies and programs to promote the practice of safe bicycling and walking to and from schools throughout the region in order to reduce traffic congestion, improve air quality, and enhance neighborhood safety. There are both federal and state funding programs for SRTS. As a regional agency, MCTC is an eligible applicant under the federal program for both infrastructure and non-infrastructure projects. Under the state program, only cities and counties are eligible applicants for infrastructure projects only. (Caltrans, 2007). With the

passage of the SRTS bill (AB 1475), a "one third" distribution formula for federal safety funds (to be allocated in equal amounts to: state highways, local roads, and SRTS construction programs) was established.

The federal SRTS was authorized by Section 1404 of the *SAFETEA-LU (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users*). The State-legislated SRTS program (SR2S) is contained in Streets & Highways Code Section 2330-2334. MCTC shall continue to encourage its member agencies to apply for funds available through the State Highway Safety Improvement fund for eligible infrastructure projects in order to improve bicycle and pedestrian safety for school children.

In addition, MCTC will host a regional workshop as part of the SB 375 effort [Sustainable Communities Strategy (SCS)] for the cities, the County, school districts, and transit operators within the region to identify other potential opportunities for collaboration that would reduce GHG impacts. At a minimum, the issues discussed should include the findings from the SRTS activities described above, opportunities to increase the number of students with bus or other transit options to get to and from school, and integrating school siting practices with goals of promoting walkable neighborhoods with a wide range of easily accessible services.

- Report on MCTC's own GHG Impacts

  MCTC should report on its own GHG emissions and track its progress in reducing GHG emissions.

- Page 3-143, Impact 3.10.1 Land Use Impacts, 1st full Paragraph, replace with the following:

  While the RTP is likely to result in a positive outcome related to supportive land use conditions for alternative forms of transportation such as transit, other transportation improvement projects in the RTP could have significant impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. In addition, the proposed development of public facility improvements other than transportation improvement projects, could also have impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development and in turn require the expansion or improvement of transportation facilities in those areas. These conditions may have impacts on local agencies and other public agencies or districts to provide public services and facilities to accommodate this redirected growth and development pursuant to adopted plans and policies.

- Page 3-143, Section 3.10.1 Land Use Impacts, Mitigation Measures, replace the last bullet with the following:

  - Prior to final approval of each individual transportation or other public facility improvement project, the project implementing agency or local jurisdiction shall conduct the appropriate project-specific environmental review, including a determination of the consistency of such improvement projects with other adopted plans, policies, rules and regulations. Such determination shall also consider the potential land use and public services demands and impacts on agricultural activities and the preservation of agricultural lands resulting from the potential growth inducement of transportation or other public facility improvement project and shall identify mitigation measures that will reduce the impacts to a level of less than significant.

- Page 3-165, Section 3.12.3, Mitigation Measures, replace the Paragraph and Bullet with the following:

  The individual improvement project proponent or local jurisdiction shall identify and evaluate the impacts associated with the direct and indirect growth inducing potential of individual projects as a part of the appropriate improvement project-specific environmental review and shall identify mitigation measures to reduce the impacts

to a level of less-than-significant. Individual environmental documents shall quantify indirect impacts (growth that could be facilitated or induced) on public services, public facilities, and utilities and to the extent feasible shall identify mitigation measures to reduce the impacts to a level of less-than-significant. The project implementing agency or local jurisdiction shall amend its General Plan, area plan, specific plan and any other land use documents as appropriate and consistent with State statutes to reduce the impacts. The project implementing agency or local jurisdiction shall be responsible for ensuring adherence to this mitigation measure. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures.

- Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies, and all agencies, districts, and entities that are responsible and oversee the public services, public facilities and utilities to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the project and the mitigation of impacts following construction of the project in terms of the impacts of projects on public services, public facilities and utilities resulting from the direct or indirect growth inducing impacts of the project and the ability of local agencies to provide public services, public facilities and utilities required for the areas affected.

- Following construction of the project, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county agencies and all agencies, districts, and entities that are responsible and oversee the public services, public facilities and utilities to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the project and the mitigation of impacts following construction of the project in terms of the impacts of projects on public services, public facilities and utilities resulting from the direct or indirect growth inducing impacts of the project and the ability of local agencies to provide public services, public facilities and utilities required for the areas affected.

- Page 3-172, Section 3.13.1, Mitigation Measure, 1st Paragraph, add the following sentence after Sentence #1:

  In addition, the individual improvement project proponent or local jurisdiction shall be responsible for completing a school district bus transportation routing and schedules analysis and study to determine the project-specific impacts on school district bus routing and schedules and provide the mitigation measures that shall reduce the impacts to a level of less-than-significant.

- Page 3-190, Section 3.14.1, Mitigation Measures, 2nd Bullet, replace the bullet with the following bullet:

  - Local agencies shall update general, area, community and specific plans consistent with State statutes and shall prepare capital improvement programs to reflect the current status of future street and highway improvements. The timing of improvements shall also be reflected. These measures will help MCTC identify appropriate and available funding for planned street and highway improvements along the regional street and road system during development of future RTPs.

- Page 3-191, Section 3.14.3, Mitigation Measures, 1st Paragraph, 1st Sentence, add the following words to the end of the sentence:

  ……..including potential hazards or unsafe conditions, re-routing requirements, and route scheduling and delays and provide the mitigation measures that shall reduce the impacts to a level of less-than-significant.

- Page 6-1 through 6-2, Chapter 6, Section 6.2, add the following agencies:

Chawanakee Unified School District
Chowchilla Union High School District
Chowchilla Elementary School District
Marshall B. Krupp, President, Community Systems Associates, Inc.

- Include the following section on Energy and Energy Conservation at the end of Chapter 3 of the Draft SEIR as Section 3.16:

## 3.16 ENERGY AND ENERGY CONSERVATION

This section describes the existing energy resources, and analyzes the effects on energy consumption and conservation that would result from implementing the proposed 2035 projects.

### Regulatory

#### Federal

- Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, which is part of the USDOT, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by the EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

- Energy Policy Act of 1992 (EPAct)

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

- Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law by President Bush on August 8, 2005. Generally, the act includes provisions for renewed and expanded tax credits for electricity generated by qualified energy

sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

- The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users

  SAFETEA-LU, enacted August 10, 2005, authorizes the federal surface transportation programs for highways, highway safety, and transit. SAFETEA-LU addresses the many challenges facing our transportation system today—challenges such as improving safety, reducing traffic congestion, improving efficiency in freight movement, increasing intermodal connectivity, and protecting the environment—as well as laying the groundwork for addressing future challenges. SAFETEA-LU promotes more efficient and effective federal surface transportation programs by focusing on transportation issues of national significance, while giving state and local transportation decision makers more flexibility for solving transportation problems in their communities.

State of California

- Senate Bill 1078

  SB 1078 establishes a renewable portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. This target date was moved forward by SB 1078 to require compliance by 2010. In addition, electricity providers subject to the RPS must increase their renewable share by at least 1 percent each year. The outcomes of this legislation will impact regional transportation powered by electricity.

- State of California Integrated Energy Policy Report

  In 2002, the Legislature reconstituted the State's responsibility to develop an integrated energy plan for electricity, natural gas, and transportation fuels. The California Energy Commission (CEC) adopts and transmits to the Governor and Legislature a report of findings every 2 years. At a Special Business Meeting on November 12, 2003, the CEC adopted the 2003 Integrated Energy Policy Report. The 2004 Update to the Integrated Energy Policy Report was adopted by the CEC on November 3, 2004. The 2005 Integrated Energy Policy Report was adopted by the CEC on November 21, 2005. These reports make recommendations to increase California's energy supplies, reduce energy demand, broaden the range of alternatives to conventional energy sources, and improve the State's energy delivery infrastructure.

- California Strategy to Reduce Petroleum Dependence (AB 2076)

  AB 2076 (Chapter 936, Statutes of 2000) requires the CEC and the Air Resources Board (ARB) to develop and submit to the Legislature a strategy to reduce petroleum dependence in California. The statute requires the strategy to include goals for reducing the rate of growth in the demand for petroleum fuels. In addition, the strategy is required to include recommendations to increase transportation energy efficiency as well as the use of nonpetroleum fuels and advanced transportation technologies including alternative fuel vehicles, hybrid vehicles, and high-fuel efficiency vehicles.

  The strategy, Reducing California's Petroleum Dependence, was adopted by the CEC and ARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and

Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and SUVs; and increase the use of nonpetroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

- Alternative Fuels Plan Assembly Bill 1007

  AB 1007 requires the CEC to prepare a state plan to increase the use of alternative fuels in California. The plan shall include an evaluation of alternative fuels for emissions or criteria air pollutants, air toxics, GHGs, water pollutants, and other harmful substances, and their impacts on petroleum consumption. The plan shall set goals for increased alternative fuel use in the state for the years 2012, 2017, and 2022 and recommend policies to ensure the alternative fuel goals are attained, including standards on transportation fuels and vehicle and policy mechanisms to ensure vehicles operating on alternative fuels use those fuels to the maximum extent feasible. The plan was adopted in December 2007.

- Bio-energy Action Plan – Executive Order #S-06-06

  Executive Order #S-06-06 establishes targets for the use and production of bio-fuels and bio-power and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bio-energy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its bio-fuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

- Governor's Low Carbon Fuel Standard (Executive Order #S-01-07)

  Executive Order #S-01-07 establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through establishment of a Low Carbon Fuel Standard. The Low Carbon Fuel Standard shall be incorporated into the State Alternative Fuels Plan required by AB 1007 and is one of the proposed discrete early action GHG reduction measures identified by ARB pursuant to AB 32.

## Environmental Setting

### Energy Consumption and Conservation

The study area is comprised of highways, railways, bicycle trails, state routes, roads, and Caltrans rights-of-way. This analysis assumes that automobiles, trucks, transit buses, and other forms of transportation would continue to operate within the MCTC region and use a variety of energy forms, including gasoline, compressed natural gas, diesel, and electricity. This section considers the supply and demand for both electricity and fossil fuels.

Energy is fundamental to the economy and the quality of life of the Madera County region. The primary energy source for the U.S. is petroleum (also referred to as "oil"), which is refined to produce fuels like gasoline, diesel, and jet fuel. Oil is a finite, nonrenewable energy source. World consumption of petroleum products has grown steadily since 1983; as of 2005, world consumption of oil had reached 84 million barrels per day (GAO 2007). The world supply of oil is anticipated to peak (i.e., reach the point of maximum production) sometime between now and 2040, before beginning a terminal decline that will put a significant strain on the economy if not anticipated and mitigated. However, the timing of the peak depends on multiple, uncertain factors that will affect how quickly remaining oil is consumed, such as the amount of oil that still remains in the ground; how much of the amount in the ground can be extracted and produced based on technological, economic, and environmental feasibility; and future demand for oil.

The U.S., with approximately 5 percent of the world's population, accounts for just fewer than 25 percent of world oil consumption, roughly 21 million barrels per day (EIA 2007). U.S. oil production peaked around 1970 and has been declining ever since; it was about five million barrels per day in 2005. As a result, the U.S. imported about 76 percent of its oil in 2005. The U.S. transportation sector is heavily dependent on oil and represents about 69 percent of U.S. petroleum consumption. Within the transportation sector, light vehicles (i.e., cars, light trucks [two-axle, four-tire trucks], and motorcycles) represent about 60 percent of the petroleum-based energy consumption.

California's transportation sector is equally dependent upon oil, with petroleum-based fuels currently providing nearly all (96 percent) of California's transportation energy needs (State of California 2007). Furthermore, transportation-related activities represent almost half (48 percent) of California's petroleum-based fuel consumption. According to a 2005 California Energy Commission (CEC) report, California's demand for transportation fuels has increased 53 percent in the last 20 years, and in the next 20 years gasoline and diesel demand will increase another 36 percent (CEC 2005). California refineries increasingly rely on imported petroleum products to meet this demand. In 2003 the CEC and ARB adopted a two-part strategy to reduce the state's petroleum demand: promoting improved vehicle efficiency and increasing the use of alternative fuels. In 2005, alternative fuels represented 6 percent of the state's transportation energy needs. In 2006, CEC and ARB set a goal that 20 percent of all transportation energy in 2020 comes from alternative fuels. State plans, programs, and regulations to implement this strategy are further discussed in the Regulatory Setting section below.

Similar to California and the U.S. as a whole, the MCTC region relies primarily on oil to meet its transportation needs. Motor vehicles are the largest consumer of fuels in the region's transportation sector. After gasoline, diesel fuel is the most utilized transportation energy source. The primary consumers of diesel fuel in the transportation sector are heavy-duty trucks, with medium-duty trucks, buses, light-duty passenger cars, and railway locomotives accounting for remaining diesel fuel consumption.

Alternative fuels are defined as fuels not derived from petroleum, such as natural gas, ethanol, and electricity. However, like petroleum, alternative fuels like natural gas and ethanol (which is primarily composed of diesel fuel) are also nonrenewable, finite resources. Electricity is also considered nonrenewable when generated from natural gas or coal, but considered renewable when generated from sources like solar, hydroelectric, or wind energy. Most alternative fuel facilities in the region supply compressed natural gas (CNG) or electricity. The region's limited alternative fuel infrastructure severely constrains the use of alternative fuel passenger vehicles.

Although average fuel efficiency for autos and trucks has experienced some improvements during the last quarter-century, fuel consumption associated with the large increase in VMT has exceeded the fuel consumption reductions achieved by improved efficiency, and the total amount of annual fuel consumption has continued to increase. The equipment and vehicles involved in the construction of transportation infrastructure (i.e., roadway and highway improvements; rail lines; etc.) also consume energy. Currently, construction equipment and vehicles are generally dependent on petroleum-based fuels.

### Energy Conservation and Global Climate Change

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with construction activities and the operation of passenger, public transit, and commercial vehicles results in GHG emissions that cause global climate change (also referred to herein as "climate change" and "global warming"). In addition, alternative fuels like natural gas (including CNG and liquid natural gas [LNG]), ethanol, and electricity (unless derived from solar, wind, nuclear, or another energy source that does not produce carbon emissions) also result

in GHG emissions and contribute to global climate change. An overview of climate change, the anticipated impacts of climate change to California, and the climate change impacts of the proposed 2011 RTP are provided in Chapter 3, Section 3.5 of the Draft SEIR. Impacts and mitigation measures associated with climate change also relate to the conservation of energy resources.

## Environmental Impacts, Mitigation Measures, and Significance After Mitigation

### Criteria for Significance

The following significance criteria were used to determine the level of significance of impacts on energy resources and energy conservation resulting from the proposed Project. Significance criteria were developed based on Appendix F of the State CEQA Guidelines and on professional judgment. In general, an individual improvement project contained within the RTP would result in a significant energy impact if it:

- Results in an increase in total consumption of nonrenewable energy or reduces the ability of the region to conserve energy resources.

### Impact Analysis

The proposed 2011 RTP plans improvements to the region's transportation network through the year 2035. Since the transportation sector accounts for a large portion of the energy consumed in the Madera County region, implementation of transportation network improvements would affect the region's energy consumption through 2035. In addition, construction of these improvements would result in increased energy consumption due to the operation of construction equipment and vehicles during construction activities. Multiple factors beyond the control of MCTC and outside the scope of the proposed 2011 RTP may influence future transportation-related energy consumption patterns under the proposed 2011 RTP. These factors include but are not limited to state and federal regulatory actions; local land use decisions; technological improvements; regional economic conditions; the fuel-efficiency and fuel-source of private automobiles; the price of oil, gasoline, diesel, electricity, and other fuels; the source of region's electric power (i.e., proportion of renewable and nonrenewable sources); the amount of oil imported by the U.S. and others.

Although energy consumption would increase under the proposed 2011 RTP, the transportation improvements are designed to the improve energy efficiency of the regional transportation system by increasing use of more fuel-efficient public transit, carpools, and vanpools, and improving circulation system levels of service. See the Climate Change discussion in Section 3.5 of the Draft SEIR for a detailed discussion of RTP actions that promote GHG emissions reductions, energy conservation, energy efficiency and reduced fuel consumption. Examples of transportation improvements included in the proposed 2011 RTP that would improve energy efficiency include proposed transit improvements that would encourage optimized use of public transportation, and enhanced transit programs with new routes that would operate at higher speeds. Public transportation provides a more energy-efficient mode of travel than single-passenger vehicles, thereby reducing the region's transportation energy consumption. Any reductions in traffic congestion realized through implementation of enhanced transit operations would also allow for more energy-efficient vehicular travel.

The proposed 2011 RTP would also involve highway and arterial widenings, and new freeway interchanges. This in turn would decrease travel time and congestion and consequently decrease fuel consumption from individual vehicles. Despite these energy efficient improvements, total and per capita energy consumption associated with the transportation system is still anticipated to increase in 2035 under the proposed 2011 RTP.

The 2011 RTP encourages the transport of goods by rail to reduce congestion on the freeway system. Hauling goods by rail has a positive energy impact. The Federal Railroad Administration estimates that intermodal rail is 1.4 to 3.4 times more fuel efficient than trucks. This indicates reduced energy efficiency of goods movement in the region and increased nonrenewable energy consumption.

The construction of transportation infrastructure identified in the proposed 2011 RTP would involve the use of construction equipment and vehicles, which are generally dependent upon nonrenewable petroleum-based fuels, on a large scale. However, it is not feasible to estimate energy consumption associated with future construction of the projects in the proposed 2011 RTP at this program level of analysis. Nevertheless, the large scale of construction activities that would be required to implement the proposed 2011 RTP would result in an additional amount of additional energy consumption associated with the proposed 2011 RTP.

Lastly, the implementation of new transit stations and centers, transit priority measures, freeway and arterial widenings, and other improvements would include street and station lighting, parking structure lighting, traffic signals, electronic signage, and other ancillary components associated with the types of transportation improvements included in the proposed 2011 RTP. The energy consumption associated with these features would also increase under the proposed 2011 RTP.

Impact 3.16.1 - Energy Consumption & Conservation Impacts

Construction of the transportation improvements programmed in the proposed 2011 RTP would increase energy consumption due to the operation of construction equipment and vehicles. Given the number of large-scale improvements programmed into the proposed 2011 RTP, the increase in energy consumption associated with construction activities would be substantial. Although construction equipment and vehicles would be operated in accordance with all applicable rules and regulations, the substantial increase in energy consumption associated with the construction equipment and vehicles primarily powered by nonrenewable fuels under the proposed 2011 RTP is considered a significant impact.

Operation of the transportation improvements identified in the proposed 2011 RTP would increase the total and per capita amount of gasoline and diesel fuel consumption associated with the regional transportation network. Since gasoline and diesel are nonrenewable, petroleum-based fuels, the increase in gasoline and diesel consumption under the proposed 2011 RTP is considered a significant impact.

In addition to increased energy consumption directly associated with transportation activities, energy consumption would also increase as a result of new lighting including, but not limited to, lighting for streets stops or stations, transit station parking structures, and rail tunnels; traffic signals; electronic signage; and other ancillary electric, natural gas, or other energy-consuming components of transportation improvements that would be implemented under the proposed 2011 RTP. Increased energy consumption levels associated with these ancillary project features are considered a significant impact.

The proposed 2011 RTP includes goals and policies supporting smart growth through financial incentives, housing and mixed-use projects at existing and planned transit stations, support for local efforts to develop pedestrian master plans, and other activities that tend to reduce GHG emissions. However, since MCTC has no direct authority over land use planning and other local decisions, the extent to which the goals and policies supporting smart growth would be implemented by local jurisdictions is unknown.

Since the 2011 RTP (2035 Plan scenario) would decrease highway congestion and enhance alternative modes relative to the No Project (2007 RTP) and No Build alternatives (2035 growth versus existing and programmed

projects), it would result in potentially beneficial effects on the consumption and conservation of energy resources.

Mitigation Measures

- The following mitigation measures shall be implemented by project implementation agencies to reduce the significant energy impacts of the proposed 2011 RTP. In addition, climate change mitigation measures referenced in Chapter 3, Section 3.5 will also contribute to the mitigation of energy consumption and energy conservation impacts.

  - Project implementation agencies shall review energy impacts as part of any CEQA-required project-level environmental analysis and specify appropriate mitigation measures for any identified energy impacts.

  - During the design and approval of transportation improvements, the following energy efficiency measures shall be incorporated when applicable:

    - The design or purchase of any lighting fixtures including but not limited to lighting at transit stations, arterials or freeways, and parking structures/lots shall achieve energy reductions beyond an estimated baseline energy use for such lighting.
    - LED technology shall be used for all new or replaced traffic lights, rail signals, and other features compatible with LED technology.

  - Project implementing agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels such as:

    - Expanding light-duty vehicle retirement programs
    - Increasing commercial vehicle fleet modernization
    - Implementing driver training modules on fuel consumption
    - Replacing gasoline powered mowers with electric mowers
    - Reducing idling from construction equipment
    - Incentivizing alternative fuel vehicles and equipment
    - Developing infrastructure for alternative fueled vehicles
    - Implementing truck idling rules, devices, and truck-stop electrification
    - Requiring electric truck refrigerator units
    - Reducing locomotives fuel use
    - Modernizing older off-road engines and equipment
    - Encouraging freight mode shift
    - Limit use and develop fleet rules for construction equipment
    - Requiring zero-emission forklifts

  - Project implementing agencies should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. MCTC recommends the use of Appendix F, Energy Conservation, of the *CEQA Guidelines.*

  - Project implementing agencies should streamline permitting and provide public information to facilitate accelerated construction of solar and wind power.

- Project implementing agencies should adopt a "Green Building Program" to promote green building standards. Green buildings can reduce local environmental impacts, regional air pollutant emissions and global greenhouse gas emissions. Green building standards involve everything from energy efficiency, usage of renewable resources and reduced waste generation and water usage. For example, water-related energy use consumes 19 percent of the state's electricity. The residential sector accounts for 48 percent of both the electricity and natural gas consumption associated with urban water use. While interest in green buildings has been growing for some time, cost has been a main consideration as it may cost more up front to provide energy-efficient building components and systems. Initial costs can be a hurdle even when the installed systems will save money over the life of the building. Energy efficiency measures can reduce initial costs, for example, by reducing the need for over-sized air conditioners to keep buildings comfortable. Undertaking a more comprehensive design approach to building sustainability can also save initial costs through reuse of building materials and other means.

  A comprehensive study of the value of green building savings is the 2003 report to California's Sustainable Building Task Force. In the words of the report: "While the environmental and human health benefits of green building have been widely recognized, this comprehensive report confirms that minimal increases in upfront costs of about 2% to support green design would, on average, result in life cycle savings of 20% of total construction costs -- more than ten times the initial investment. For example, an initial upfront investment of up to $100,000 to incorporate green building features into a $5 million project would result in a savings of $1 million in today's dollars over the life of the building."

- Local governments should alter zoning to improve jobs/housing balance, create communities where people live closer to work, and bike, walk, and take transit as a substitute for personal auto travel. Creating walkable, transit oriented nodes would generally reduce energy use and greenhouse gas emissions. Residential energy use (electricity and natural gas) accounts for 14 percent of California's greenhouse gas emissions. It is estimated that households in transit-oriented developments drive 45 percent less than residents in auto-dependent neighborhoods. In addition, mixed land uses (i.e., residential developments near work places, restaurants, and shopping centers) with access to public transportation have been shown to save consumers up to 512 gallons of gasoline per year. Furthermore, studies have shown that the type of housing (such as multi-family) and the size of a house have strong relationships to residential energy use. Residents of single-family detached housing consume over 20 percent more primary energy than those of multifamily housing and 9 percent more than those of single-family attached housing.

- Project implementing agencies should increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in publically owned vehicles, as well as those owned by franchisees of these agencies, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers.

- Bid solicitations for construction of projects should preference the use of alternative formulations of cement and asphalt with reduced GHG emissions to the extent that such cement and asphalt formulations are available at a reasonable cost in the marketplace. Solicitations should also preference the recycling of construction waste and debris if market conditions permit.

- MCTC shall continue to develop, in coordination with the California Air Resources Board, a data and information collection and analysis system that provides an understanding of the energy demand and greenhouse gas emissions in the MCTC region.

- All mitigation measures listed in Chapter 3, Section 3.5.1, are incorporated by reference and shall be implemented by implementing agencies to address energy conservation impacts.

Significance After Mitigation

Implementation and monitoring of the above mitigation measures will provide the framework and direction for subsequent individual improvement project-specific mitigation designed to avoid or reduce the identified significant Project impacts to a less than significant level.

# EXHIBIT A - STATEMENT OF OVERRIDING CONSIDERATIONS

## SUMMARY OF SIGNIFICANT, ADVERSE, UNAVOIDABLE IMPACTS

MCTC identified a number of significant, adverse, and unavoidable impacts in the Draft and Final SEIRs. As such, CEQA requires the MCTC Board of Directors to balance the benefits of the Proposed Plan Option against its unavoidable environmental risks in determining whether to approve the Regional Transportation Plan. The SEIRs identify the following significant, adverse, and unavoidable environmental impacts:

- Impact 3.1.1: Construction and implementation of individual projects could potentially impede or block views of scenic resources as seen from the transportation facility or from the surrounding area.

- Impact 3.1.2: Construction and implementation of the projects could alter the appearance of scenic resources along or near designated scenic highways and vista points.

- Impact 3.1.3: Construction and implementation of the projects could create significant contrasts with the overall visual character of the existing landscape setting.

- Impact 3.1.4: Construction and implementation of individual projects could potentially create a new source of substantial light or glare that would affect day or nighttime views of scenic resources as seen from the transportation facility or from the surrounding area.

- Impact 3.1.5: Madera County will experience significant growth and development by 2035. The 2011 RTP influences the pattern of this development, by increasing mobility and including transportation measures. At the regional scale, the 2011 RTP's contribution to impacts on the overall visual character of the existing landscape setting would be cumulatively significant.

- Impact 3.2.1: Strategies aimed at addressing the transportation needs of future growth patterns were considered during development of the proposed 2011 RTP. The document promotes alternatives to the automobile through enhanced funding (beyond that identified in the 2011 RTP) for transit and other alternative modes of transportation such as bicycle facilities, trails, airport improvements, and others. Implementation of strategies proposed in the RTP could result in positive changes to land uses. While the RTP is likely to result in a positive outcome related to supportive land use conditions for alternative forms of transportation such as transit, other projects in the Plan could have significant impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. This impact could be especially significant on agricultural land uses within the County.

- Impact 3.2.2: Implementation of the proposed Project could potentially result in the disturbance or loss of significant agricultural resources throughout the Madera region.

- Impact 3.3.3: The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion and vehicle trips and vehicle miles traveled, which will reduce the potential for increased air emissions when compared to emissions budgets established by EPA. While TCMs have been identified in the Air Quality Conformity Finding, the TCMs will not result in attainment of all pollutants over time or by the year 2035. As a result, long-term emission impacts cannot be reduced to a less than significant level even with the addition of projects and programs outlined in the RTP.

- Impact 3.4.1: The RTP includes projects that may result in direct removal or degradation of riparian habitat or other sensitive natural communities during construction activities such as grading and grubbing.

- Impact 3.4.2: The RTP includes projects that may result in direct impacts to plant and wildlife species including rare, threatened and/or endangered species during construction and operation of the proposed transportation facilities through the removal of native habitat.

- Impact 3.4.3: The Project may result in indirect impacts to plant and wildlife species including rare, threatened and/or endangered species during the construction and operation through edge effects such as noise, lighting and visual deterrents.

- Impact 3.4.4: The Project would result in temporary and permanent impacts to terrestrial and aquatic wildlife movement. The linear nature of transportation projects increases the potential extent and significance of impacts to wildlife movement. Transportation facilities pose barriers to wildlife crossings that may result in injury of death of wildlife attempting to traverse the facility. These barriers also result in fragmentation of natural habitat and increased impacts associated with edge effects from lighting, noise, human disturbance, exotic plant infestations, urban runoff, etc. Smaller fragments of habitat result in greater intensity of the edge effects. It is also important to maintain connections between populations of wildlife so that interbreeding, and/or that young have no ability to disperse to suitable habitats, does not occur. Impacts to wildlife movement would be greater along entirely new transportation facilities than with improvements to existing facilities, because the existing facility has already formed a barrier, and the addition of new lanes for example, may only slightly increase the barrier effect.

- Impact 3.4.6: The 2011 RTP would potentially increase siltation of streams and other water resources from exposures of erodible soils during construction activities. Excessive siltation can significantly degrade habitat for fish and other aquatic organisms. Heavy sediment deposition can bury slow-moving or sessile bottom-dwelling organisms, fish eggs and larval forms of many aquatic organisms. These losses are not only of direct concern, but also represent a loss of food sources for larger fishes and other organisms, such as birds and mammals, that are not directly affected by sediments.

  Increased sediment can also decrease light penetration for aquatic plant production and increase water temperature from greater insulation. Higher water temperatures can affect aquatic organisms through direct stress of temperature-sensitive organisms (e.g., steelhead require cold water streams), and by increasing nitrate productivity which can exacerbate eutrophication if the sediments contain or are accompanied by excessive nutrients (i.e., algal blooms). The degree of this impact would depend on several factors including the following:

  - *Length of occurrence.* The longer the period of sedimentation, the greater the potential for significance.
  - *Timing of occurrence*. The effect would be of greater significance during particularly sensitive times of year, such as during fish spawning seasons when the eggs and larvae which are particularly sensitive to siltation would be present; and,
  - *Significance of Resource.* The effect would be of greater significance where a special status species might be affected, such as near a steelhead spawning stream.

- Impact 3.4.7: Growth and development in Madera County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, could potentially influence the pattern of this growth and development. The 2011 RTP's influence on growth could potentially contribute to following regional cumulatively considerable impacts:

- Displacement of natural vegetation,
- Damage to sensitive species habitat,
- Habitat fragmentation,
- Impacts to riparian and wetland habitats,
- Construction and operational disturbances, and
- Siltation.

- Impact 3.5.1: Increased Transportation GHG Emissions May Cause Climate Change

- Impact 3.5.2: It is possible that local transportation GHG emissions within Madera County, when combined with emissions throughout California and the world, might contribute to climate change. Based upon analysis conducted by the IPCC, climate change is a significant cumulative impact, given the ramifications for air quality, climate, public health, water resources, flooding, sea level, agricultural productivity, and biological resources, among other potential effects. However, no agreed-upon methodology is currently available under CEQA to adequately identify when project-level GHG emissions contribute considerably to this significant cumulative impact.

- Impact 3.6.2: Construction activities involving excavation and earthmoving may encounter archaeological resources.

- Impact 3.6.3: Construction activities involving excavation and earthmoving may encounter paleontological materials.

- Impact 3.6.4: Construction activities involving excavation and earthmoving may encounter human remains.

- Impact 3.6.5: Growth and development in Madera County will increase substantially by 2035. The 2011 RTP, by increasing mobility and by inclusion of transportation measures, potentially influences the pattern of this development. The 2011 RTP's influence on growth could potentially contribute to regional impacts to existing historic resources and previously undisturbed and undiscovered cultural resources.

- Impact 3.7.2: Some improvement projects require significant earthwork, increasing potential slope failure and long-term erosion. Earthwork can also alter unique geologic features.

- Impact 3.7.5: Implementation of proposed Project could potentially have short-term and long-term effects on water quality downstream from specific project sites. The short-term impacts relate to the grading and construction phases of project implementation that may cause erosion, while the long-term impacts may result from increased runoff flows from larger areas of asphalt.

- Impact 3.7.6: Some street and highway projects may be proposed along alignments that will affect State-owned and State minerals reserved lands.

- Impact 3.7.7: Growth and development in Madera County would increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, potentially influences the pattern of this urbanization. Implementation of the 2011 RTP would have the potential to result in a cumulatively considerable adverse effect on human beings and property when considered at the regional scale.

- Impact 3.8.4: Implementation of the investments and policies in the 2011 RTP could create a potential hazard to the public or the environment by the disturbance of contaminated sites as a result of population and housing growth in the region. The 2011 RTP's influence on mobility and its transportation measures could potentially influence population distribution, potentially contributing to a cumulatively considerable impact related to disturbance of contaminated sites by new urban development. With additional pressure for infill development, reuse of "brownfields" properties may become more common as the region grows.

- Impact 3.9.5: Growth and development will increase substantially by 2035. The 2011 RTP, by increasing mobility and by including transportation measures, potentially influences the pattern of this development. The 2011 RTP's influence on growth could potentially contribute to the conversion of undeveloped land, resulting in impacts to water quality, stormwater infiltration and groundwater recharge, flood hazard impacts, and wastewater treatment services, and water demand.

- Impact 3.10.1: While the RTP is likely to result in a positive outcome related to supportive land use conditions for alternative forms of transportation such as transit, other transportation improvement projects in the RTP could have significant impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development. In addition, the proposed development of public facility improvements other than transportation improvement projects, could also have impacts on land use patterns, potentially causing land use growth and development to occur in areas not previously envisioned for growth and development and in turn require the expansion or improvement of transportation facilities in those areas. These conditions may have impacts on local agencies and other public agencies or districts to provide public services and facilities to accommodate this redirected growth and development pursuant to adopted plans and policies.

- Impact 3.10.2: There are many sensitive receptors located in the urban and rural areas of the County. A "sensitive receptor" includes, but is not limited to residential units and land uses, educational facilities and schools, medical facilities, places of worship or other land uses that may require a higher level of protection and mitigation from the impacts of construction. These sensitive receptors may be sensitive to noise, vibration, air pollutants, and other conditions that impact our environment. Sensitive receptors located in the vicinities of proposed improvement projects could be impacted by construction and implementation of the proposed highway, arterial and transit projects due to noise, dust, vibration, etc.

- Impact 3.10.3: Construction and implementation of projects would result in the loss of open space and community recreation areas.

- Impact 3.10.4: Implementation of the proposed RTP could potentially result in the disturbance or loss of significant agricultural resources throughout the Madera region.

- Impact 3.10.6: Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, potentially influences the pattern of this development. The 2011 RTP's influence on growth could potentially contribute to cumulatively considerable impacts to land use and could change the intensity of land use in some areas.

- Impact 3.11.1: Grading and construction activities associated with the proposed highway, arterial, and transit projects would intermittently and temporarily generate noise levels and vibration occurrences

above ambient background levels. Noise and vibration levels in the immediate vicinity of the construction sites could increase substantially sometimes for extended durations.

- Impact 3.11.2: Noise-sensitive land uses could be exposed to noise in excess of normally acceptable noise levels and/or could experience substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new transit facilities as well as increased use of existing transit facilities, etc.).

- Impact 3.11.3: Cumulative ambient noise levels could increase in the region to exceed normally acceptable noise levels or have substantial increases in noise as a result of the operation of expanded or new transportation facilities (i.e., increased traffic resulting from new highways, addition of highway lanes, roadways, ramps, and new use of new transit facilities as well as increased use of existing transit facilities, etc.).

- Impact 3.12.1: The Project could also potentially displace or relocate residences and businesses through acquisition of land and buildings necessary for highway, arterial, and transit improvement.

- Impact 3.12.2: Projects have the potential to disrupt or divide a community by separating community facilities, restricting community access and eliminating community amenities.

- Impact 3.12.3: Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, could potentially influence the pattern of this development. The 2011 RTP's influence on growth could contribute to regional cumulatively considerable impacts to population, housing and employment and could change the intensity of land use in some areas.

- Impact 3.13.5: Growth and development in the County will increase substantially by 2035. The 2011 RTP, by increasing mobility and including transportation measures, could potentially influence the pattern of this development. The 2011 RTP's influence on growth could contribute to regionally cumulative considerable impacts to police and fire and emergency services, solid waste services, and other public services in the County.

- Impact 3.14.1: While improved mobility will result from implementation of the projects contained in the 2011RTP, some significant unavoidable impacts, considering the regional minimum LOS policy of "D" will occur. LOS deficiencies will result along a number of regional street and highway segments and associated intersections because of the inability to widen such facilities due to funding and other constraints even with RTP projects. It is anticipated that even with implementation of the Project significant LOS deficiencies will continue.

## OVERRIDING CONSIDERATIONS

MCTC is required to prepare this Statement of Overriding Considerations to explain the reasons for approving the 2011 RTP, despite the unavoidable impacts identified in the SEIR and Findings of Fact (as per Section 15093 of the State CEQA Guidelines). In preparing this Statement, MCTC has balanced the benefits of the Proposed Plan Option against its unavoidable environmental risks. MCTC finds that the unavoidable significant adverse effects of the individual improvement projects are overridden by the benefits of those projects and the considerations described below. MCTC, therefore, makes and adopts the following Overriding Considerations:

- The requirement for updates to the RTP every four (4) years, which provides for the identification of transportation modes to address population and employment growth, is required by State Law and sound local planning practice, and is an overriding concern.

- The specific need to provide necessary, feasible and sustainable transportation system improvements within the region is an overriding concern.

- The need to provide choice in the availability of transportation modes for County residents as a means to avoid significant delay and congestion, which may indirectly harm businesses and residents that depend upon a viable transportation system, is an overriding concern.

- Because there is no alternative other than the "No Build", "No Project" (2011 Regional Transportation Plan), and VMT Reduction Alternatives to converting some prime farmland for expansion of the circulation system, the need for such conversion is an overriding concern.

- While the individual improvement projects will not result in emissions beyond those allowed through the conformity process, and construction and hot spot emission impacts can be mitigated or are not found to be significant, the fact that the Valley continues to be nonattainment for volatile organic compounds, nitrogen oxides, and PM emissions, is an overriding concern.

- Because there is no alternative other than "No Build", "No Project", and VMT Reduction Alternatives to the loss of some biological resources for expansion of the circulation system, the loss of such resources is an overriding concern.

- The 2011 RTP balances the need to preserve valuable agricultural and biological resources with the region's need to provide a viable transportation system to accommodate anticipated population and employment growth and the related increased need for employment opportunities and municipal revenue. This planning balance is an overriding concern.

- Regional benefits associated with implementation of the 2011 RTP (reduced vehicular emissions, reduced congestion, reduced travel time, reduced vehicle miles traveled and improved mobility), will result from the implementation of planned improvement projects, which outweigh the potentially unavoidable localized impacts to land use development that may result from the individual improvement projects.

- Implementation of the 2011 RTP will result in increased unavoidable noise levels as a result of expansion of the planned transportation system, but the specific need to provide necessary, feasible and sustainable transportation system improvements within the region that supports planned growth and development, is an overriding concern.

- Implementation of the 2011 RTP would result in positive impacts on public services; however, long-term maintenance of various transportation modes including streets and highways is an overriding concern.

- Regional and localized benefits associated with implementation of the 2011 RTP (reduced vehicular emissions, reduced congestion, reduced travel time, reduced vehicle miles traveled and improved mobility), that will result from the implementation of planned improvement projects, outweigh the potentially unavoidable impacts associated with individual or localized improvement projects and other projects identified in the Project alternatives. These other alternatives will result in a greater number of Level of Service (LOS) deficiencies and infeasible transportation projects that will not result in further benefits beyond implementation of the 2011 RTP.

Based on substantial evidence in the public record, MCTC finds that, for the reasons set forth above, the economic, social and other consideration of the individual improvement projects outweigh the unavoidable agricultural, biological, land use/planning, noise, and transportation/circulation impacts identified in the SEIRs. First, the individual improvement projects identified in the 2011 RTP are required to meet travel demand of residents and businesses through to the year 2035. Second, the planned transportation improvements will enhance continued economic growth in the region. Third, the planned improvements will reduce levels of vehicular emissions and LOS deficiencies compared to the other project alternatives. Fourth, appropriate and achievable mitigation measures have been proposed, which are within MCTC's and its member agencies' jurisdiction to mitigate or avoid the significant environmental effects identified in the SEIRs.

## OVERRIDING REASONS

Therefore, in accordance with Section 15093 of the State CEQA Guidelines, MCTC is required to prepare this Statement of Overriding Considerations to explain the reasons for approving the 2011 RTP, despite the unavoidable impacts identified in the SEIR and Findings of Fact. In preparing this Statement, MCTC has balanced the benefits of the Project against its unavoidable environmental risks. For the reasons specified below, MCTC finds that the benefits of the Project outweigh the unavoidable environmental risks. In addition, the Findings of Fact identify a number of recommended mitigation measures that are found to be within the jurisdiction of other public agencies and not MCTC, and that these measures have been or should be adopted by such other agencies. MCTC finds that, for the reasons specified below, the Project should be adopted as the 2011 RTP notwithstanding the fact that responsibility for mitigating the potential adverse impacts rests with agencies other than MCTC.

The following reasons are consistent with the intent and purpose of the 2011 RTP:

### Quality of Life

- The Project is intended to contribute to the quality of life that is experienced and will be experienced by the residents of Madera County.

- The Project is designed to meet the needs of everyday travel for all types of purposes as well as for large regional movements over the long-term. Transportation is closely connected with many other issues, such as air quality, the environment, and land use, health, safety, and economic vitality and the Project contains goals and actions to address these issues.

### Access and Mobility

- The Project includes many strategies to address both access and mobility and acknowledges that certain major corridors will need major investments in all modes of transportation to maintain and improve both access and mobility for the growth in travel that is occurring.

    - Access: Significant increases are planned for the street and highway, transit, and bicycle, trails, and pedestrian systems in the County. The projects must undergo extensive planning and analysis processes with community involvement.

    - Mobility: The Project includes a slate of projects aimed at reducing the most critical areas of congestion from a regionwide viewpoint. In addition to expanded transit service, which will reduce congestion in particular corridors, mobility projects additional lanes along streets and highways, interchange improvements,

maintenance and rehabilitation of the existing system of streets and highways, and other capacity enhancements throughout the region.

- The Project also includes funding for rail consolidation, car and van pools, and local road improvements, including lane additions, intersection improvements, and rehabilitation and maintenance of the existing street and highways system.

Air Quality

- The Project includes funding for significant increases in alternative modes of transportation -- public transit, bicycle, pedestrian projects and community design projects -- that will make alternative modes of transportation more attractive.

- While the individual improvement projects will not result in emissions beyond those allowed through the conformity process, and construction and hot spot emission impacts can be mitigated or are not found to be significant, the fact that the Valley continues to be nonattainment for volatile organic compounds, nitrogen oxides, and $PM_{10}$ and $PM_{2.5}$ emissions is an overriding concern.

Travel Choices

- The Project invests significant funding into offering choices of travel mode to future residents. Major increases in, bus, bicycle, and pedestrian modes are envisioned, along with promotion of sharing rides.

- Regional and localized benefits associated with implementation of the 2011 RTP (reduced vehicular emissions, reduced congestion, reduced travel time, reduced vehicle miles traveled and improved mobility), that will result from the implementation of planned improvement projects, outweigh the potentially unavoidable impacts associated with individual or localized improvement projects and other projects identified in the Project alternatives. These other alternatives will result in a greater number of Level of Service (LOS) deficiencies and infeasible transportation projects that will not result in further benefits beyond implementation of the 2011 RTP.

Economic Vitality

- The Project includes major corridor improvements that connect areas around the periphery of the urban core, providing better access to the region's major job center – the City of Madera. It also includes significantly enhanced bus transit systems to help manage demand.

- Investment in road maintenance and rehabilitation is provided, particularly a problem in rural areas where farm-to-market truck travel is important.

Equity

- The Project incorporates the priorities of local communities and many of these local projects are paid for from local funds. Major projects of regional concern are located throughout the region as well.

- The Project will provide alternatives -- pubic transit, bicycle, and pedestrian facilities -- for those who cannot or do not drive. Finally, a large increase in paratransit service (door-to-door wheelchair-equipped van service) is included for the expected increase in the elderly population over the RTP period.

- The need to provide choice in the availability of transportation modes for County residents as a means to avoid significant delay and congestion, which may indirectly harm businesses and residents that depend upon a viable transportation system, is an overriding concern.

### Transportation and Land Use

- Investment in the transportation system will offer opportunities to grow logically and address the interaction between land use and transportation more effectively.
- The requirement for amendments to the RTP every four years, which provides for the identification of transportation modes to address population and employment growth, is required by State Law and sound local planning practice, and is an overriding concern.

- The specific need to provide necessary, feasible and sustainable transportation system improvements within the region is an overriding concern.

- Because there is no alternative other than the "No Build", "No Project" (2007 Regional Transportation Plan), and VMT Reduction Alternatives to converting some prime farmland for expansion of the circulation system, the need for such conversion is an overriding concern.

- Implementation of the 2011 RTP would result in positive impacts on public services; however, long-term maintenance of various transportation modes including street and highway is an overriding concern.

### Funding and Revenue

- The Project shows revenues available from all sources -- federal, state, and local. The 2011 RTP would provide additional funding than that included in the RTP. The region will continue to receive federal and state funding to program projects through to the Year 2035.

- Overall, the Project provides funding transit operations and improvements, highway, street and road improvements, highway, street and road maintenance and rehabilitation, and for other kinds of improvements (bicycle, pedestrian, community design, etc.).

### Health And Safety

- Pedestrian and bicycle plans and projects are specifically allocated funding in the 2011 RTP and funds have also been identified for such improvements in the RTP. Local road and state highway safety-related improvements are also included.

- Regional benefits associated with implementation of the 2011 RTP (reduced vehicular emissions, reduced congestion, reduced travel time, reduced vehicle miles traveled and improved mobility), will result from the implementation of planned improvement projects, which outweigh the potentially unavoidable localized impacts to land use development that may result from the projects.

### Environmental Sustainability

- The Project includes a number of projects and programs that mitigate environmental issues.

- Because there is no alternative other than "No Build", "No Project", and VMT Reduction Alternatives to the loss of some biological, cultural and agricultural resources for expansion of the circulation system, the loss of such resources is an overriding concern.

- The 2011 RTP balances the need to preserve valuable agricultural and biological resources with the region's need to provide a viable transportation system to accommodate anticipated population and employment growth and the related increased need for employment opportunities and municipal revenue. This planning balance is an overriding concern.

- Implementation of the 2011 RTP will result in increased unavoidable noise levels as a result of expansion of the planned transportation system, but the specific need to provide necessary, feasible and sustainable transportation system improvements within the region that supports planned growth and development, is an overriding concern.

Based on substantial evidence in the public record, MCTC finds that, for the reasons set forth above, the economic, social and other considerations of the project outweigh the unavoidable agricultural, biological, land use/planning, noise, and transportation/circulation impacts identified in the SEIR. First, the individual improvement projects identified in the 2011 RTP are required to meet travel demand of residents and businesses through to the Year 2035. Second, the planned transportation improvements will enhance continued economic growth in the region. Third, the planned improvements will reduce levels of vehicular emissions and LOS deficiencies compared to the other project alternatives. Fourth, appropriate and achievable mitigation measures have been proposed, which are within MCTC's and its member agencies' jurisdiction to mitigate or avoid the significant environmental effects identified in the SEIR.

# EXHIBIT B - MITIGATION MONITORING PROGRAM

## STATUTORY REQUIREMENTS

This Mitigation Monitoring Program for the Madera County Transportation Commission (MCTC) 2011 Regional Transportation Plan (RTP) Subsequent Environmental Impact Report (SEIR) has been developed in accordance with Section 21081.6 of the Public Resources Code, which requires a Lead Agency that approves or carries out a project, where an SEIR has identified significant environmental effects, to adopt a reporting or monitoring program. The purpose of this program is to identify the changes to the project, which the Lead Agency has adopted or made a condition of a project approval in order to mitigate or avoid significant effects on the environment. MCTC is the Lead Agency that must adopt the mitigation monitoring program.

Section 21069 of the CEQA statute defines Responsible Agency as a public agency, other than the Lead Agency, which has the responsibility for carrying out or approving a project. MCTC finds that the implementation of some mitigation measures listed on the following pages of the Final SEIR are not within its jurisdiction, and can and should be implemented and monitored by agencies responsible for implementing the projects, including but not limited to the following: cities, the County, Caltrans, transit agencies, and other responsible agencies.

CEQA statutes and Guidelines provide direction for clarifying and managing the complex relationships between a Lead Agency (MCTC) and other agencies with respect to implementing and monitoring mitigation measures. In accordance with CEQA Guidelines Section 15097.d, "each agency has the discretion to choose its own approach to monitoring or reporting; and each agency has its own special expertise." This discretion will be exercised by implementing agencies at the time they undertake any of the individual improvement projects identified in the Draft and Final SEIRs.

Regular review and update of the 2011 Regional Transportation Plan will be conducted by MCTC, as appropriate. These updates involve a determination of regional transportation and air quality impacts and require air quality conformity pursuant to the federal Clean Air Act.

## ADMINISTRATION OF THE MITIGATION MONITORING PROGRAM

Mitigation measures listed in this Mitigation Monitoring Program will be implemented by one or more responsible or implementing agencies at the time they undertake individual improvement projects identified in the Regional Transportation Plan.

The Mitigation Monitoring Program consists of the following components:

- Mitigation measures contained in the Draft and Final SEIR
- Identification of Responsible Party
- Description of mitigation measure timing
- Identification of monitoring agency

This Mitigation Monitoring Program shall be maintained in the MCTC files for the MCTC 2011 Regional Transportation Plan.

# MITIGATION MEASURES

## Aesthetics

### Mitigation Measures

1. All mitigation measures will be included in project-level analysis, as appropriate. The project implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. MCTC will be provided with documentation indicating compliance with mitigation measures.

    - Implement design guidelines, local policies, and programs aimed at protecting views of scenic corridors and avoiding visual intrusions.

    - To the extent feasible, noise barriers that will not degrade or obstruct a scenic view will be constructed. Noise barriers will be well landscaped, complement the natural landscape and be graffiti-resistant.

2. All mitigation measures will be included in project-level analysis, as appropriate. The project implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. MCTC will be provided with documentation indicating compliance with mitigation measures.

    - Avoid construction of transportation facilities in state and locally designated scenic highways and vista points.

    - If transportation facilities are constructed in state and locally designated scenic highways and/or vista points, design, construction, and operation of the transportation facility will be consistent with applicable guidelines and regulations for the preservation of scenic resources along the designated scenic highway.

3. All mitigation measures will be included in project-level analysis, as appropriate. The project implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. MCTC will be provided with documentation indicating compliance with mitigation measures.

    - Develop design guidelines for each type of transportation facility that make elements of proposed facilities visually compatible with surrounding areas. Visual guidelines will, at a minimum, include setback buffers, landscaping, color, texture, signage, and lighting criteria. The following methods will be employed whenever possible:

        - Transportation systems will be designed in a manner where the surrounding landscape dominates
        - Transportation systems will be developed to be compatible with the surrounding environment (i.e., colors and materials of construction material)
        - If exotic vegetation is used, it will be used as screening and landscaping that blends in and complements the natural landscape
        - Trees bordering highways will remain or be replaced so that clear cutting is not evident
        - Grading will blend with the adjacent landforms and topography

    - Project implementation agencies shall design projects to minimize contrasts in scale and massing between the project and surrounding natural forms and development. Project implementation agencies shall design projects to minimize their intrusion into important viewsheds and use contour grading to better match surrounding terrain. To the maximum extent feasible, landscaping along highway corridors shall be

designed to add significant natural elements and visual interest to soften the hard-edged, linear travel experience that would otherwise occur.

- Project implementation agencies shall use natural landscaping to minimize contrasts between the project and surrounding areas. Wherever possible, interchanges and transit lines shall be designed at the grade of the surrounding land to limit view blockage. Edges of major cut-and-fill slopes should be contoured to provide a more natural looking finished profile. Project implementation agencies shall replace and renew landscaping to the greatest extent possible along corridors with road widenings, interchange projects, and related improvements. New corridor landscaping shall be designed to respect existing natural and man-made features and to complement the dominant landscaping of surrounding areas.

- Project implementation agencies shall construct sound walls of materials whose color and texture complements the surrounding landscape and development and to the maximum extent feasible, use color, texture, and alternating facades to "break up" large facades and provide visual interest. Where there is room, project sponsors shall landscape the sound walls with plants that screen the sound wall, preferably with either native vegetation or landscaping that complements the dominant landscaping of surrounding areas.

4. All mitigation measures will be included in project-level analysis, as appropriate. The project implementation agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. MCTC will be provided with documentation indicating compliance with mitigation measures.

   - Develop design guidelines for each type of transportation facility that make light elements of proposed facilities visually compatible with surrounding areas. The following methods will be employed whenever possible:

     - Transportation systems will be designed in a manner where the surrounding landscape dominates
     - Transportation systems will be developed to be compatible with the surrounding environment
     - Lighting devices will be employed such as downward facing light, light shields, and amber lumens

5. Mitigation measures identified above should also be implemented as applicable to development projects throughout the region.

   - In visually sensitive site areas and prior to project approval, local land use agencies shall apply development standards and guidelines to maintain compatibility with surrounding natural areas, including site coverage, building height and massing, building materials and color, landscaping, site grading, etc.

   - Local agencies should develop design guidelines for each type of transportation facility that make light elements of proposed facilities visually compatible with surrounding areas. The following methods will be employed whenever possible:

     - Transportation systems will be designed in a manner where the surrounding landscape dominates;
     - Transportation systems will be developed to be compatible with the surrounding environment; and
     - Lighting devices will be employed such as downward facing light, light shields, and amber lumens.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

## Agricultural Resources

Mitigation Measures

1. The impact on significant agricultural resources will be evaluated as part of the appropriate improvement project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. MCTC will be provided with documentation indicating compliance with all mitigation measures.

   ♦ Individual projects will be consistent with local land use plans and policies that designate areas for urban land use and preserve agricultural lands that support the economic viability of agricultural activities.

   ♦ Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of potential land use impacts.

2. The impact on significant agricultural resources will be evaluated as part of the appropriate improvement project-specific environmental review. Mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. MCTC will be provided with documentation indicating compliance with all mitigation measures.

   ♦ Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible.

   ♦ For projects in agricultural areas, project implementation agencies will contact the California Department of Conservation and the County Agriculture Department's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy.

   ♦ Prior to final approval of each individual improvement project, the implementing agency will establish conservation easement programs to mitigate impacts to prime farmland.

   ♦ Prior to final approval of each individual improvement project, the implementing agency will avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy.

   ♦ Prior to final approval of each individual improvement project, the implementing agency will encourage enrollments of agricultural lands for counties that have Williamson Act programs.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

## Air Quality

Mitigation Measures

1. All mitigation measures shall be included in project-level analysis, as appropriate. The individual improvement project proponent or local jurisdiction shall be responsible for completing an air quality analysis and study to determine the project-specific air quality construction impacts and identify and provide the mitigation measures that shall reduce the impacts to a level of less than significant in accordance with the applicable air quality standards. Such air quality analysis and study shall identify the impacts on land uses, facilities and activities of properties within the vicinity of the project and shall identify and provide the mitigation measures that shall reduce the impacts to a level of less than significant in accordance with the applicable air quality standards. The individual improvement project proponent or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures prior to and during the construction of the project. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures.

    - Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies, and all agencies, districts, and entities that are responsible and oversee sensitive receptors to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the construction of the project and the mitigation of impacts associated with air quality.

    - Prior to commencing and during the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county policies, requirements, rules and regulations, and all plans, policies, requirements, rules and requirements of the agencies, districts, and entities that are responsible and oversee sensitive receptors with regards to air quality.

    - Project implementation agencies shall ensure implementation of mitigation measures to reduce $PM_{10}$ and NOx emissions from construction sites, including:

        - Maintain on-site truck loading zones
        - Configure on-site construction parking to minimize traffic interference and to ensure emergency vehicle access
        - Provide temporary traffic control during all phases of construction activities to improve traffic flow

- Use best efforts to minimize truck idling to not more than two minutes during construction
- Apply non-toxic soil stabilizers (according to manufacturers' specifications) to all inactive construction areas.
- During construction, replace ground cover in disturbed areas as quickly as possible
- During construction, enclose, cover, water twice daily or apply non-toxic soil binders (according to manufacturers' specifications) to exposed piles with 5 percent or greater silt content and to all unpaved parking or staging areas or unpaved road surfaces
- During the period of construction, install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip
- During the period of construction, assure that traffic speeds on all unpaved roads be reduced to 15 mph or less
- Pave all construction access roads at least 100 feet on to the site from permanent roadways
- Cover all haul trucks

The individual improvement project proponent or local jurisdiction shall address Regulation VIII under the San Joaquin Valley Air District for all construction sites and will constitute sufficient mitigation to reduce PM10 impacts to a level considered less-than significant.

2. Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies, and all agencies, districts, and entities that are responsible and oversee sensitive receptors to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the on-going use and operation of the project and the mitigation of impacts.

    - Prior to commencing on individual projects, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county policies, requirements, rules and regulations; and all plans, policies, requirements, rules and requirements of the agencies, districts, and entities that are responsible and oversee sensitive receptors, and all mitigation measures with regards to addressing air quality impacts.

    - At those projects, facilities, and intersection locations near sensitive receptors where carbon monoxide concentrations may exceed federal and State standards based upon individual air quality impact assessments for individual projects, the individual improvement project proponent or local jurisdiction shall reduce or alleviate these concentrations by improving traffic flows through improved signalization, restriping, addition of traffic lanes, and other improvements identified as part of the environmental review of the project and the applicable mitigation measures.

3. The various TCMs that have been incorporated into the Air District AQAP, ROP Plans, and the SJVAPCD TCM Program, or have been identified as necessary to provide for positive air quality conformity findings, as referenced in the latest Air Quality Conformity Finding for the 2011 RTP and Federal Transportation Improvement Program (FTIP).

    - Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies, and all agencies, districts, and entities that are responsible and oversee sensitive receptors to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the on-going use and operation of the project and the mitigation of impacts associated with regards to addressing air quality impacts.

- Prior to commencing on individual projects, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county policies, requirements, rules and regulations; and all plans, policies, requirements, rules and requirements of the agencies, districts, and entities that are responsible and oversee sensitive receptors, and all mitigation measures with regards to addressing air quality impacts.

- All applicable rules and regulations adopted by the Air District shall be followed by responsible and implementing agencies as individual improvement projects are designed, constructed and maintained. MCTC shall be provided with documentation indicating compliance with all project-specific mitigation measures applicable to the on-going use and operation of the project.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

## Biotic Resources

Mitigation Measures

1. All mitigation measures will be included in subsequent project-level environmental analysis, as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction, as appropriate. MCTC will be provided with documentation indicating compliance with mitigation measures.

    - When applicable to federally funded projects, MCTC and responsible agencies shall commit to improved interagency coordination and integration of the National Environmental Policy Act (NEPA) and the Clean Water Act Section 404 procedures during three stages: transportation planning, project programming, and project implementation. MCTC and affected state and local agencies shall commit to ensuring the earliest possible consideration of environmental concerns pertaining to U.S. water bodies, including wetlands, at each of the three stages identified above. In addition, the agencies shall place a high priority on the avoidance of adverse impacts to waters of the U.S. and associated sensitive species, including threatened and endangered species. Implementation of NEPA-404 requirements will expedite construction of necessary transportation projects, with benefits to mobility and the economy at large. The process will also enable more street and highway projects to proceed on budget and on schedule. Finally, the process will improve cooperation and efficiency of governmental operations at all levels, thereby better serving the public.

    - Construction and operational Best Management Practices (BMPs) will be identified, installed and maintained in order to prevent silt and other pollutants from entering jurisdictional waters and wetlands thereby

degrading or destroying wildlife and/or natural habitat. BMPs may include straw bales and/or mats, temporary sedimentation basins, silt fence, sand bag check dams, dry season construction, etc.

- Native soils in construction areas will be removed, stockpiled separately, and replaced in those areas where onsite revegetation of the native habitat is planned.

- Any disturbed natural areas will be replanted with appropriate native vegetation following the completion of construction activities.

- During the individual improvement project design phase, impacts to jurisdictional waters and wetlands will be minimized to the greatest extent feasible.

- Project proponents will obtain and comply with appropriate regulatory requirements prior to construction.

2. All mitigation measures will be included in subsequent project-level environmental analysis, as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. MCTC will be provided with documentation indicating compliance with mitigation measures.

   - Each proposed individual improvement project will consider the displacement of sensitive habitat and sensitive species during the individual improvement project design phase.

   - When avoidance of native vegetation removal is not possible, each transportation project shall replant disturbed areas with commensurate native vegetation of high habitat value adjacent to the project (i.e. as opposed to ornamental vegetation with relatively less habitat value).

   - Focused sensitive plant and wildlife species surveys will be conducted within suitable habitat to determine the distribution of sensitive species within the biological impact area of the proposed individual improvement project. Sensitive plant surveys will be conducted during the appropriate flowering season for sensitive plant species with the potential to occur within the individual improvement project area.

   - If sensitive plant or wildlife species are identified within the biological impact area, a Biological Resource Management Plan (BRMP) will be developed to address appropriate avoidance and minimization measures. These measures may include seed collection and salvage measures for sensitive plant species, silt fencing, exclusion fencing and/or appropriate compensation where impacts cannot be fully avoided.

   - Individual transportation projects shall include offsite habitat enhancement or restoration to compensate for unavoidable habitat losses from the project site.

   - Locations of sensitive species and sensitive habitats will be mapped and shown on construction drawings and identified as Environmentally Sensitive Areas (ESAs). Prior to construction, these areas will be flagged and/or fenced to prevent unnecessary impacts from machinery and foot traffic.

   - Temporary access roads and staging areas will not be located within areas containing sensitive plant or wildlife species wherever feasible, so as to avoid or minimize impacts to these species.

   - Construction activities will be scheduled, as appropriate and feasible, to avoid sensitive times that have a greater likelihood to affect significant resources such as spawning periods for fish, nesting season for birds and/or the rainy season for riparian habitat and sediment/erosion control.

- All vegetation (including tall grasses) will be removed between August 16 and February 14, if possible, to avoid potential conflicts with nesting birds. If it is not possible to remove vegetation during that time frame, a nest clearance survey will be completed prior to vegetation clearing. Any detected nests will be mapped and provided with an appropriate buffer as recommended by a qualified biologist. Construction activities within the buffer area will not be allowed until after September 15 or until fledglings have abandon the nest.

- A Worker Awareness Program (environmental education) shall be developed and implemented to inform project workers of their responsibilities in regards to avoiding and minimizing impacts on sensitive biological resources.

- An Environmental Inspector shall be appointed to serve as a contact for issues that may arise concerning implementation of mitigation measures, and to document and report on adherence to these measures.

- A qualified wetland scientist shall review construction drawings as part of each project-specific environmental analysis to determine whether wetlands will be impacted, and if necessary perform a formal wetland delineation. Appropriate state and federal permits shall be obtained, but each project EIR will contain language clearly stating the provisions of such permits, including avoidance measures, restoration procedures, and in the case of permanent impacts compensatory creation or enhancement measures to ensure a no net loss of wetland extent or function and values.

- Sensitive habitats (native vegetative communities identified as rare and/or sensitive by the CDFG) and special-status plant species (including vernal pools) impacted by projects shall be restored and augmented, if impacts are temporary, at a 1.1:1 ratio (compensation acres to impacted acres). Permanent impacts shall be compensated for by creating or restoring habitats at a 3:1 ratio as close as possible to the site of the impact.

- When work is conducted in identified sensitive habitat areas and/or areas of intact native vegetation, construction protocols shall require the salvage of perennial plants and the salvage and stockpile of topsoil (the surface material from 6 to 12 inches deep) and shall be used in restoring native vegetation to all areas of temporary disturbance within the project area.

- If specific project area trees are designated as “Landmark Trees” or “Heritage Trees”, then approval for removals shall be obtained through the appropriate entity, and appropriate mitigation measures shall be developed at that time, to ensure that the trees are replaced. Due to the close proximity of these areas to sensitive wildlife habitats, all mitigation trees will use only locally-collected native species.

- Use resource data to inform transportation decision-making.

- Use watershed, conservation, and recovery plans to identify important environmental considerations for the MCTC region, such as critical wildlife corridors, the most important areas to protect for sensitive species, and areas with a high concentration of resources.

- Give conservation plans as much weight as General Plans when planning transportation investments.

- Incorporate concepts such as 100 to 200 foot buffers for stream corridors, and identification and improvement of priority culverts that currently restrict wildlife corridors and natural processes of stream and river systems.

- Use parcel maps to identify larger, undivided parcels for ease of acquisition and preservation, and designate areas as potential future mitigation sites.

- Consider the resource, "Eco-logical: An Ecosystem Approach to Developing Infrastructure Projects" (2006) which encourages Federal, State, Tribal and Local partners involved in the infrastructure planning, design, review, and construction to use flexibility in regulatory processes.

- Identify financial mechanisms to fund mitigation, such as development fees, sales tax, or the use of funds from alternative methods to identify and protect critical resource areas.

- Establish conservation easements that connect to and expand existing conservation areas.

- Describe locally-developed measures such as designated open space, measures requiring development set-backs near streams, etc.

- The following list of data resources should be referenced during development of biotic plans and studies for transportation improvement projects:

  - U.S. Fish & Wildlife Service species recovery plans
  - USDA Natural Resources Conservation Service wetland data
  - Nature Conservancy data and regional planning documents
  - California Department of Fish and Game Natural Diversity Database
  - Local non-profit and land trust group information

3. All mitigation measures will be included in subsequent project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. MCTC will be provided with documentation indicating compliance with mitigation measures.

   - The height, spacing, number and type of light fixtures will be selected and installed to minimize intrusive light escaping from the physical boundaries of the site.

   - Road noise minimization methods such as native brush and tree planting adjacent to heavy noise producing transportation facilities or will be incorporated where feasible.

4. All mitigation measures will be included in subsequent project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. MCTC will be provided with documentation indicating compliance with mitigation measures.

   - During final design, implementing agencies will design, construct, and maintain terrestrial wildlife crossings in order to minimize barrier effects and habitat fragmentation created by the individual improvement project.

   - During final design, implementing agencies will design, construct, and maintain any structure/culvert placed within a stream where endangered or threatened fish occur/may occur. The structure/culvert will not constitute a barrier to upstream or downstream movement of aquatic life, or cause an avoidance reaction by fish that impedes their upstream or downstream movement. This includes, but is not limited to, the supply of water at an appropriate depth for fish migration.

5. All mitigation measures will be included in subsequent project-level environmental analysis as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for compliance with the mitigation measures during all phases of construction as appropriate. MCTC will be provided with documentation indicating compliance with mitigation measures.

    - Construction and operation of the proposed individual improvement project will comply with the requirements of all adopted HCPs and other preserved areas.

6. Individual projects near water resources shall implement Best Management Practices (BMPs) at construction sites to minimize erosion and sediment transport from the area. BMPs include encouraging growth of vegetation in disturbed areas, using straw bales or other silt-catching devices, and using settling basins to minimize soil transport.

    - Individual projects shall schedule construction activities to avoid sensitive times for biological resources (e.g. steelhead spawning periods during the winter and spring) and to avoid the rainy season when erosion and sediment transport is increased.

7. The cumulative impacts to biological resources, due to the forecast urban development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.4.1 through 3.4.6, in addition to the following measure:

    - Future impacts to biotic resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

## Climate Change

### Mitigation Measures

1. MCTC cannot require that local agencies, Caltrans, the Air District or other agencies that use diesel-powered vehicles and equipment apply retrofit emission control devices, such as diesel oxidation catalysts and diesel particulate filters verified by CARB. MCTC also cannot require that the same agencies use alternative forms of cement and asphalt that have lower GHG emissions. It is recommended however, that responsible agencies (local agencies, the Air District, Caltrans, and others) consider the implementation of such measures during individual project development and construction.

Both MCTC and responsible agencies implementing projects outlined in the 2011 RTP will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32 and AB 1493, but the exact character of such future implementing strategies is not known at this time. MCTC and the local agencies will quantify GHG emissions consistent with Guidelines and requirements developed by CARB. Once the Guidelines are available, MCTC will address GHG emissions and global warming impacts of projects contained in the 2011 RTP.

All mitigation measures will be included in project-level analysis, as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures.

Implementation agencies will ensure implementation of the following mitigation measures to reduce GHG emissions:

- Develop land use patterns, which encourage people to walk, bicycle, or use public transit for a significant number of their daily trips
  - Use comprehensive community plans and specific plans to ensure development is consistent and well connected by alternative transportation modes
  - Adopt transit-oriented or pedestrian-oriented design strategies and select areas appropriate for these designs in the general plan
  - Support higher density development in proximity to commonly used services and transportation facilities
- Develop in a compact, efficient form to reduce vehicle miles traveled and to improve the efficiency of alternatives to the automobile
  - Use the control of public services to direct development to the most appropriate locations
  - Promote infill of vacant land and redevelopment sites
- Encourage project site designs and subdivision street and lot designs that support walking, bicycling, and transit use
  - Adopt design guidelines and standards promoting plans that encourage alternative transportation modes
  - Require certain sites to be created to allow convenient access by transit, bicycle, and walking

- Prior to or in conjunction with the adoption of the proposed 2014 RTP, MCTC will develop a GHG Emissions Reduction Plan that includes the following:

  - General discussion of the potential impacts that GCC poses to the Madera County region, with particular focus on potential impacts related to RTP facilities, to the extent that such information is available
  - A baseline inventory of total GHG emissions directly and indirectly from transportation in the County that currently exist, and review of potential targets and timelines for achieving GHG reductions
  - Development of feasible GHG emissions reduction measures and strategies to achieve reductions in RTP GHG emissions. Such reduction measures may include construction of new transportation projects, modification of existing facilities or services, incentive or funding programs, pricing strategies, regulations or any other actions that reduce GHG emissions associated with RTP activities
  - State protocols and GHG emissions inventory mechanisms are necessary tools to track and monitor GHG emissions at the local level. MCTC and member agencies must determine, in cooperation with the state, the solutions that will best minimize its potential risks and maximize its potential benefits

- Intelligent Transportation

  - Developing an Intelligent Transportation Systems strategy to implement the Integrated Performance Management Systems Network that will:
    - Interconnect the region's local transportation management centers, including the use of cameras, and computer hardware and software to detect and clear accidents
    - Use technology to improve traffic signal timing in order to optimize traffic flow and transit service
    - Involve new equipment to improve on-time transit performance and provide real-time transit information at stops and stations

- Create Alternative Fuel Vehicle and Infrastructure Toolkit for Local Governments

  MCTC will develop an Alternative Fuel Vehicle (AFV) and Infrastructure Toolkit for member agencies that will contain best practices related to ordinances, analytical tools, financing opportunities, codes, and standards related to reducing GHG emissions. MCTC will identify the alternative fuel vehicle(s) (e.g. neighborhood electric vehicles) and alternative fuel infrastructure with the potential to result in the greatest GHG emission reductions. MCTC will conduct a public education program for local governments and other public agencies, as appropriate to encourage the use of alternative fuel vehicles and infrastructure.

  MCTC will work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers. Such AFVs shall have GHG emissions at least 10 percent lower than comparable gasoline- or diesel-powered vehicles. The Alternative Fuel Vehicle and Infrastructure Toolkit described above will include best practices strategies to aid in the transformation of municipally owned or contracted fleets, including vehicle fleets operated and/or funded, at least in part by MCTC.

- Adopt Transportation Pricing Policy

  MCTC will prepare an analysis on the impacts and the viability of using pricing policies with the transit system and selected portions of the road network to encourage people to drive less and use transit, walking, and bicycling modes more. This study will identify strategies to reduce GHG emissions that will include, but are not limited to, free or reduced transit fares during "spare the air" days; fare-free zones on the transit system; transit vouchers; days on which transit is free; congestion pricing options for portions of the road system, such as tolls on freeways and highways; and congestion-pricing to enter certain high-traffic areas served by public transit (e.g. downtown areas). MCTC shall adopt a transportation pricing policy based upon these strategies, and shall conduct seminars with local government staff, planning commissioners and elected officials and members of the private development, planning, engineering and design communities to disseminate these strategies.

- Create a Public Education Program on Individual Transportation Behavior and Climate Change

  In conjunction with key partners such as local air districts, public utility providers, area chambers of commerce and others, MCTC will create a public information program to educate the public about the connection between individual transportation behavior and global climate change, including transportation behavior modifications the public can make to reduce their GHG emissions over time. MCTC shall include information on its website that is focused on global climate change. The website shall identify actions the public can take to reduce their carbon footprint, and provide web links to sources of information designed to

promote alternative mode use (carpools, vanpools, public transit, bicycling, walking, telecommuting) and other travel demand management strategies.

- Provide Funding for Workshop on Global Climate Change for Local Government Officials and Create GHG Emissions Reduction Strategies Toolkit

  MCTC will provide funding for a workshop on global climate change for local government officials that will focus on practical techniques that local governments can implement to reduce greenhouse gas emissions at the city and county level. Workshop topics shall include, but are not limited to the following:

  - The basic science behind climate change and its effects on the Madera County Region
  - Addressing the California Environmental Quality Act (CEQA) and the effects of AB 32
  - What cities and counties are doing to address climate change and CEQA
  - Cost effective actions cities can take to reduce greenhouse emissions
  - Actions being taken in the Madera County area to advance and support innovative "green" business

  MCTC in conjunction with other key partners, shall produce a toolkit for local governments to use to take effective actions to reduce greenhouse gas emissions over time. The toolkit will incorporate recommendations by the workshop participants to identify which issues are important for the region and the tools and resources they would like to have available to reduce greenhouse emissions .

- Continue to Work with Member Agencies Regarding the Safe Routes to School (SRTS) Policy and Program and Conduct Workshop with Cities, the County, and School Districts to Identify other Opportunities for Collaboration that may reduce GHG Emissions

  Continue to work with local agencies on development of Safe Routes to Schools (SRTS) policies and programs to promote the practice of safe bicycling and walking to and from schools throughout the region in order to reduce traffic congestion, improve air quality, and enhance neighborhood safety. There are both federal and state funding programs for SRTS. As a regional agency, MCTC is an eligible applicant under the federal program for both infrastructure and non-infrastructure projects. Under the state program, only cities and counties are eligible applicants for infrastructure projects only. (Caltrans, 2007). With the passage of the SRTS bill (AB 1475), a "one third" distribution formula for federal safety funds (to be allocated in equal amounts to: state highways, local roads, and SRTS construction programs) was established.

  The federal SRTS was authorized by Section 1404 of the *SAFETEA-LU (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users*). The State-legislated SRTS program (SR2S) is contained in Streets & Highways Code Section 2330-2334. MCTC shall continue to encourage its member agencies to apply for funds available through the State Highway Safety Improvement fund for eligible infrastructure projects in order to improve bicycle and pedestrian safety for school children.

  In addition, MCTC will host a regional workshop as part of the SB 375 effort [Sustainable Communities Strategy (SCS)] for the cities, the County, school districts, and transit operators within the region to identify other potential opportunities for collaboration that would reduce GHG impacts. At a minimum, the issues discussed should include the findings from the SRTS activities described above, opportunities to increase the number of students with bus or other transit options to get to and from school, and integrating school siting practices with goals of promoting walkable neighborhoods with a wide range of easily accessible services.

- Report on MCTC's own GHG Impacts

  MCTC should report on its own GHG emissions and track its progress in reducing GHG emissions.

Responsibility for Implementation of Mitigation Measures:

MCTC and/or Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

As noted in the mitigation measure. During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

MCTC, Caltrans and/or local agencies.

## Cultural Resources

Mitigation Measures

1. All mitigation measures will be included in project-level analysis, as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. MCTC will be provided with documentation indicating compliance with mitigation measures.

   - As part of the appropriate environmental review of individual projects, the project implementation agencies will identify potential impacts to historic resources. A record search at the appropriate Information Center will be conducted to determine whether the individual improvement project area has been previously surveyed and whether resources were identified.

   - As necessary, prior to construction activities, the project implementation agencies will obtain a qualified architectural historian to conduct historic architectural surveys as recommended by the Archaeological Information Center. In the event the records indicate that no previous survey has been conducted, the Information Center will make a recommendation on whether a survey is warranted based on the sensitivity of the individual improvement project area for cultural resources.

   - The project implementation agencies will comply with Section 106 of the National Historic Preservation Act if federal funding or approval is required. This law requires federal agencies to evaluate the impact of their actions on resources included in or eligible for listing in the National Register of Historic Places. Federal agencies must coordinate with the State Historic Preservation Officer in evaluating impacts and developing mitigation. These mitigation measure may include, but are not limited to the following:

     - The project implementation agencies will carry out the maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation, relocation, or reconstruction of any impacted historic resource, which will be conducted in a manner consistent with the Secretary of the Interior's Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.

- In some instances, the following mitigation measure may be appropriate in lieu of the previous mitigation measure:

  - The project implementation agencies will secure a qualified environmental agency and/or architectural historian, or other such qualified person to document any significant historical resource(s), by way of historic narrative, photographs, or architectural drawings, as mitigation for the effects of demolition of a resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

2. All mitigation measures will be included in project-level analysis, as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. MCTC will be provided with documentation indicating compliance with mitigation measures.

   Implementation of the following mitigation measures for archaeological resources is recommended to reduce impacts to a less than significant level. Project proponents will implement the following measures as part of the individual improvement project review process for proposed transportation projects:

   - As part of the appropriate environmental review of individual projects, the project implementation agencies will consult with the Native American Heritage Commission to determine whether known sacred sites are in the project area, and identify the Native American(s) to contact to obtain information about the individual improvement project site.

   - Prior to construction activities, the project implementation agencies will obtain a qualified archaeologist to conduct a record search at the appropriate Information Center of the California Archaeological Inventory to determine whether the individual improvement project area has been previously surveyed and whether resources were identified.

   - As necessary prior to construction activities, the project implementation agencies will obtain a qualified archaeologist or architectural historian (depending on applicability) to conduct archaeological and/or historic architectural surveys as recommended by the Information Center. In the event the records indicate that no previous survey has been conducted, the Information Center will make a recommendation on whether a survey is warranted based on the sensitivity of the individual improvement project area for cultural resources.

   - If the record search indicates that the individual improvement project is located in an area rich with cultural materials, the individual improvement project proponent will retain a qualified archaeologist to monitor any subsurface operations, including but not limited to grading, excavation, trenching, or removal of existing features of the subject property.

   - Construction activities and excavation will be conducted to avoid cultural resources (if found). If avoidance is not feasible, further work may need to be done to determine the importance of a resource. The project implementation agencies will obtain a qualified archaeologist familiar with the local archaeology, and/or an architectural historian should make recommendations regarding the work necessary to determine importance. If the cultural resource is determined to be important under state or federal guidelines, impacts on the cultural resource will be mitigated.

   - The project implementation agencies will stop construction activities and excavation in the area where cultural resources are found until a qualified archaeologist can determine the importance of these resources.

3. All mitigation measures will be included in project-level analysis, as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. MCTC will be provided with documentation indicating compliance with mitigation measures. Project proponents in the Madera region will implement the following measures as part of the review process for proposed transportation projects:

   - As part of the appropriate environmental review of individual projects, the project implementation agencies will obtain a qualified paleontologist to identify and evaluate paleontological resources where potential impacts are considered high; the paleontologist will also conduct a field survey in these areas.

   - Construction activities will avoid known paleontological resources, especially if the resources in a particular lithic unit formation have been determined through detailed investigation to be unique. If avoidance is not feasible, paleontological resources will be excavated by the qualified paleontologist and given to a local agency, State University, or other applicable institution, where they can be displayed.

4. All mitigation measures will be included in project-level analysis, as appropriate. The individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to construction. MCTC will be provided with documentation indicating compliance with mitigation measures.

   As part of the appropriate environmental review of individual projects, the project implementation agencies, in the event of discovery or recognition of any human remains, during construction or excavation activities associated with the individual improvement project, in any location other than a dedicated cemetery, will cease further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent human remains until the coroner of the county in which the remains are discovered has been informed and has determined that no investigation of the cause of death is required

   - If the remains are of Native American origin, the coroner will contact the Native American Heritage Commission in order to ascertain the proper descendants from the deceased individual. The coroner will make a recommendation to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods, which may include obtaining a qualified archaeologist or team of archaeologists to properly excavate the human remains.

   - If the Native American Heritage Commission was unable to identify a descendant or the descendant failed to make a recommendation within 24 hours after being notified by the commission, in which case:

     - The landowner or his authorized representative will obtain a Native American monitor, and an archaeologist, if recommended by the Native American monitor, and rebury the Native American human remains and any associated grave goods, with appropriate dignity, on the property and in a location that is not subject to further subsurface disturbance where the following conditions occur:

       - The Native American Heritage Commission is unable to identify a descendent.
       - The descendant identified fails to make a recommendation.
       - The landowner or his authorized representative rejects the recommendation of the descendant, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

5. The cumulative impacts to cultural resources, due to the forecast growth and development associated with the 2011 RTP, would be mitigated using the same measures detailed for Impacts 3.6.1 thru 3.6.4, in addition to the following measure.

    - Future impacts to cultural resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

## Geology/Soils

Mitigation Measures

1. Project structures will be built by responsible agencies to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC).

    - Implementing agencies will ensure that improvement projects located within or across active fault zones comply with design requirements, published by the CGS, as well as local, regional, state, and federal design criteria for construction of projects in seismic areas.

    - The project implementing agencies will guarantee that geotechnical analysis is conducted within construction areas to establish soil types and local faulting prior to individual improvement project design preparation.

2. The project implementing agencies will ensure that individual improvement project designs provide adequate slope drainage and appropriate landscaping to minimize the occurrence of slope instability and erosion.

    - Design features will include measures to reduce erosion from storm water.

    - Road cuts will be designed to maximize the potential for revegetation.

    - Implementing agencies will ensure that projects avoid landslide areas and potentially unstable slopes wherever feasible.

    - Where practicable, routes and individual improvement project designs that would permanently alter unique geologic features will be avoided.

3. Implementing agencies will ensure that geotechnical investigations are conducted by a qualified geologist to identify the potential for subsidence and expansive soils.

    - Recommended corrective measures, such as structural reinforcement and replacing soil with engineered fill, will be implemented in individual improvement project designs.

    - Implementing agencies will ensure that, prior to preparing individual improvement project designs, new and abandoned wells are identified within construction areas to ensure the stability of nearby soils.

4. Project structures will be constructed by responsible agencies to the seismic standards contained in the most recent edition of the Uniform Building Code (UBC).

    - Implementing agencies shall ensure that projects are designed in accordance with county and city code requirements for seismic ground shaking. The design of projects shall consider seismicity of the site, soil response at the site, and dynamic characteristics of the structure, in compliance with the appropriate California Building Code and State of California design standards for construction in or near fault zones, as well as all standard design, grading, and construction practices in order to avoid or reduce geologic hazards.

    - Implementing agencies shall ensure that projects located within or across Alquist- Priolo Zones comply with design requirements provided in Special Publication 117, published by the California Geological Survey, as well as relevant local, regional, state, and federal design criteria for construction in seismic areas.

    - The project implementing agencies shall ensure that geotechnical analyses from qualified geotechnical experts are conducted within construction areas to ascertain soil types and local faulting prior to preparation of project designs. These investigations would identify areas of potential failure and recommend remedial geotechnical measures to eliminate any problems.

5. Improvement projects with significant cuts or fill should include a geotechnical investigation to identify adverse soil conditions and develop recommendations for design and construction that would limit the effects of adverse soil and bedrock conditions.

    - Cut and fill plans will be prepared for all improvement projects where cut and fill will be reburied, so that all fill materials are properly designed, placed, and compacted.

    - Preparation of a detailed erosion control plan will be prepared to limit the effects of soil erosion and water degradation during improvement project construction, in accordance with permit conditions and requirements of the State Water Resources Control Board's Best Management Practices (BMPs), or equally effective measures will be employed.

6. Where possible, improvement projects will be designed by responsible agencies to limit potential impacts on State-owned or State mineral-reserved lands.

7. Mitigation measures 3.7.1 through 3.7.6 would be applied to this impact in addition to the following measure:

    - Future impacts to geologic resources shall be minimized through cooperation and information sharing between the implementation agency and affected resource agencies.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

## Hazardous Materials

Mitigation Measures

1. Prior to approval of any RTP project, the project implementation agency shall consult all known databases of contaminated sites and undertake a standard Phase 1 Environmental Site Assessment in the process of planning, environmental clearance, and construction for projects included in the 2011 RTP. If contamination is found the implementing agency shall coordinate clean up and/or maintenance activities.

    - Where contaminated sites are identified, the project implementation agency shall develop appropriate mitigation measures to assure that worker and public exposure is minimized to an acceptable level and to prevent any further environmental contamination as a result of construction.

    - Local agencies should contact the Chevron Environmental Management Company (CEMC) to determine whether an improvement project may be in the vicinity of the Tidewater Oil Company or Standard Oil Company historical pipeline alignments.

2. Mitigation Measures 3.8.1 through 3.8.3 as implemented by responsible agencies and private developers would address this impact.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

## Hydrology/Water Quality

### Mitigation Measures

1. Improvement projects along existing facilities will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce velocity.

2. Transportation network improvements will comply with local, state and federal floodplain regulations. Proposed transportation improvements will be engineered by responsible agencies to accommodate storm drainage flow.

    - Responsible agencies should ensure that operational best management practices for street cleaning, litter control, and catch basin cleaning are provided to prevent water quality degradation. Responsible agencies implementing projects requiring continual water removal facilities should provide monitoring systems including long-term administrative procedures to ensure proper operations for the life of the Project.

3. Prior to construction, and when a potential drainage issue is known, a drainage study should be conducted by responsible agencies for new capacity-increasing projects. Drainage systems should be designed to maximize the use of detention basins, vegetated areas, and velocity dissipaters to reduce peak flows where possible. Transportation improvements will comply with federal, state and local regulations regarding storm water management. State-owned freeways must comply with Storm Water Discharge NPDES permit for Caltrans facilities.

    - Responsible agencies shall ensure that new facilities include water quality control features such as drainage channels, detention basins, and vegetated buffers to prevent pollution of adjacent water resources by runoff.

    - Letters of Map Revision (LOMR) will be prepared and submitted to FEMA (when applicable) by responsible agencies where construction would occur within 100-year floodplains. The LOMR will include revised local base flood elevations for projects constructed within flood-prone areas.

4. Improvement projects along existing facilities will include upgrades to storm water drainage facilities to accommodate increased runoff volumes. These upgrades may include the construction of detention basins or structures that will delay peak flows and reduce velocity.

5. Mitigation Measures 3.9.1 through 3.9.4 shall be applied to all development projects, as feasible, in addition to the following measures:

    - Local governments should encourage Low Impact Development and natural spaces that reduce, treat, infiltrate and manage stormwater runoff flows in all new developments.

    - Local governments should implement green infrastructure and water-related green building practices through incentives and ordinances. Green building resources include the U.S. Green Building Council's Leadership in Energy and Environmental Design, Green Point Rated Homes, and the California Green Builder Program.

    - Local governments should integrate water resources planning with existing greening and revitalization initiatives, such as street greening, tree planting, development and restoration of public parks, and parking lot conversions, to maximize benefits and share costs.

- Developers, local governments, and water agencies should maximize permeable surface area in existing urbanized areas to protect water quality, reduce flooding, allow for groundwater recharge, and preserve wildlife habitat. New impervious surfaces should be minimized to the greatest extent possible, including the use of in-lieu fees and off-site mitigation.

- Future impacts to water quality shall be avoided through cooperative planning, information sharing, and comprehensive pollution control measure development.

- Local jurisdictions and water agencies are encouraged to continue regional-scale planning for improved stormwater management and groundwater recharge. Future adverse impacts shall be avoided through cooperative planning, information sharing, and comprehensive implementation efforts.

- Local governments should prevent development in flood hazard areas that do not have appropriate protections, especially in alluvial fan areas of the region.

- Local jurisdictions should encourage new development and industry to locate in those service areas with existing wastewater infrastructure and treatment capacity, making greater use of those facilities prior to incurring new infrastructure costs.

- Wastewater treatment agencies are encouraged to have expansion plans, approvals and financing in place once their facilities are operating at 80 percent of capacity.

- Local jurisdictions should promote reduced wastewater system demand by: designing wastewater systems to minimize inflow and increase upstream treatment and infiltration to the extent feasible, reducing overall source water generation by domestic and industrial users, deferring development approvals for industries that generate high volumes of wastewater until wastewater agencies have expanded capacity.

- Project developers and agencies should consider potential climate change hydrology and attendant impacts on available water supplies and reliability in the process of creating or modifying systems to manage water resources for both year round use and ecosystem health.

- Local water agencies shall continue to evaluate future water demands and establish the necessary supply and infrastructure to meet that demand.

- Developers, local governments, and water agencies should include conjunctive use as a water management strategy when feasible.

- Developers and local governments should reduce exterior uses of water in public areas, and should promote reductions in private homes and businesses, by shifting to drought-tolerant native landscape plantings (xeriscaping), using weather-based irrigation systems, educating other public agencies about water use, and installing related water pricing incentives.

- Future impacts to water supply shall be minimized through cooperation, information sharing, and program development.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

## Land Use/Planning

Mitigation Measures

1. Prior to final approval of each individual transportation or other public facility improvement project, the project implementing agency or local jurisdiction shall conduct the appropriate project-specific environmental review, including a determination of the consistency of such improvement projects with other adopted plans, policies, rules and regulations. Such determination shall also consider the potential land use and public services demands and impacts on agricultural activities and the preservation of agricultural lands resulting from the potential growth inducement of transportation or other public facility improvement project and shall identify mitigation measures that will reduce the impacts to a level of less than significant.

    - Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies, and all agencies, districts, and entities that are responsible and oversee sensitive receptors to identify and determine the land use plans, policies, requirements, rules and regulations that may be applicable to the project and the mitigation of impacts following construction of the project in terms of the ability of local agencies to provide public services and facilities required by the growth inducing and development affects of the project.

    - Following construction of the project, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county land use plans, policies, requirements, rules and regulations, and all plans, policies, requirements, rules and requirements of the agencies, districts, and entities that are responsible and oversee sensitive receptors applicable to the project and the mitigation of impacts of the project in terms of the ability of local agencies to provide public services and facilities required by the growth inducing and development affects of the project.

    - Prior to final approval of each individual improvement project, the individual improvement project proponent or local jurisdiction shall conduct the appropriate project-specific environmental review, including consideration of potential land use impacts and specific impacts on sensitive receptors in vicinity of the project, and identify mitigation measures to reduce the impacts to a level of less than significant applicable to the on-going use and operation of the project.

    - Prior to final approval of each individual improvement project, the project implementing agency or local jurisdiction shall conduct the appropriate project-specific environmental review, including consideration of potential land use and public services demands and impacts resulting from the potential growth inducement of the project and shall identify mitigation measures that will reduce the impacts to a level of less than significant.

1. Impacts to sensitive receptors shall be identified and specifically studied and evaluated as part of the project-specific environmental review, and mitigation measures shall be identified to reduce the impacts to a level of less than significant. The individual improvement project proponent or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures following construction of the project. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures following construction of the project:

    - Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies, and all agencies, districts, and entities that are responsible and oversee sensitive receptors to identify and determine the land use plans, policies, requirements, rules and regulations that may be applicable to the project and the mitigation of impacts following construction of the project.

    - Following construction of the project, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county land use plans, policies, requirements, rules and regulations, and all plans, policies, requirements, rules and requirements of the agencies, districts, and entities that are responsible and oversee sensitive receptors applicable to the on-going use and operation of the project

    - Prior to final approval of each individual improvement project, the individual improvement project proponent or local jurisdiction shall conduct the appropriate project-specific environmental review, including consideration of potential land use impacts and specific impacts on sensitive receptors in vicinity of the project, and identify mitigation measures to reduce the impacts to a level of less than significant applicable to the on-going use and operation of the project.

    - Potential significant impacts to sensitive receptors and land uses within vicinity of the project shall be mitigated to a level of less than significant as applicable to the on-going use and operation of the project.

2. The impact on open space and community recreation areas will be evaluated as part of the appropriate project-specific environmental review and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. MCTC will be provided with documentation indicating compliance with all mitigation measures.

    - Project implementation agencies will ensure that projects are consistent with federal, state, and local plans that preserve open space and recreation.

    - Project implementation agencies will identify open space and recreation areas that could be preserved and will include mitigation measures (such as dedication or payment of in-lieu fees) for the loss of open space.

    - Prior to final approval of each individual improvement project, the implementing agency will conduct the appropriate project-specific environmental review, including consideration of loss of open space and recreation.

    - Potential significant impacts to open space will be mitigated.

    - For projects that require approval or funding by the U.S. Department of Transportation, project implementation agencies will comply with Section 4(f) of the U.S. Department of Transportation Act.

3. The impact on significant agricultural resources will be evaluated as part of the appropriate project-specific environmental review, and mitigation measures will be identified to minimize impacts. Implementation agencies will be responsible for ensuring adherence to the mitigation measures prior to construction. MCTC will be provided with documentation indicating compliance with all mitigation measures.

    - Individual projects will be consistent with federal, state, and local policies that preserve agricultural lands and support the economic viability of agricultural activities, as well as policies that provide compensation for property owners if preservation is not feasible.

    - For projects in agricultural areas, project implementation agencies will contact the California Department of Conservation and the County Agricultural Commissioner's office to identify the location of prime farmlands and lands that support crops considered valuable to the local or regional economy.

    - Prior to final approval of each individual improvement project, the implementing agency will establish conservation easement programs to mitigate impacts to prime farmland.

    - Prior to final approval of each individual improvement project, the implementing agency will avoid impacts to prime farmlands or farmlands that support crops considered valuable to the local or regional economy.

    - Prior to final approval of each individual improvement project, the implementing agency will encourage enrollments of agricultural lands in the Williamson Act.

4. The mitigation measures listed above for Impacts 3.10.1 through 3.10.5 would be applied as mitigation for this impact. In addition, the following measure would apply.

    - Regional planning efforts will be used to build a consensus in the region to support changes in land use to accommodate future population growth while maintaining the quality of life in the region.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

## Noise

### Mitigation Measures

1. As part of project-specific environmental review, the individual improvement project proponent or local jurisdiction shall be responsible for completing a noise and vibration analysis and study to determine the project-

specific notice and vibration construction and provide the mitigation measures that shall reduce the impacts to a level of less than significant in accordance with the applicable noise and vibration standards. Such noise and vibration analysis and study shall identify the impacts on land uses, facilities and activities of properties within the vicinity of the project and shall identify and provide the mitigation measures that shall reduce the impacts to a level of less than significant in accordance with the applicable noise and vibration standards. The project implementing agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to and during the construction. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures.

- Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies, and all agencies, districts, and entities that are responsible and oversee sensitive receptors to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the construction of the project and the mitigation of impacts associated with noise and vibration.

- Prior to commencing and during the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county policies, requirements, rules and regulations, and all plans, policies, requirements, rules and requirements of the agencies, districts, and entities that are responsible and oversee sensitive receptors with regards to noise and vibration.

- The individual improvement project proponent or local jurisdiction shall comply with all local sound control, vibration, and noise level policies, requirements, rules, regulations, and ordinances.

- The individual improvement project proponent or local jurisdiction shall limit the hours of construction to between 6:00 a.m. and 8:00 p.m. on Monday through Friday and between 7:00 a.m. and 8:00 p.m. on weekends. In the event that noise or vibration affects public sensitive receptors, specific hours of construction shall be agreed upon between the individual improvement project proponent or local jurisdiction and the entities that are responsible and oversee public sensitive receptors to minimize the noise and vibration impacts on sensitive receptors.

- Equipment and trucks used for construction shall utilize the best available noise and vibration control techniques (including mufflers, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds) in order to minimize construction noise and vibration impacts.

- Impact equipment (e.g., jackhammers, pavement breakers, and rock drills) used for individual improvement project construction shall be hydraulically or electrical powered wherever feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatically powered tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used where feasible to a reduction of 5 dBA. Quieter procedures shall be used such as drilling rather than impact equipment whenever feasible.

- The individual improvement project proponent or local jurisdiction shall ensure that stationary noise and vibration sources shall be located as far from sensitive receptors as possible. If they must be located near existing sensitive receptors, they shall be adequately muffled so that the noise level at the property line of sensitive receptors shall not exceed 65 dBA and there is no significant vibration within the structures of the sensitive receptors.

- The individual improvement project proponent or local jurisdiction shall designate a complaint coordinator responsible for responding to noise and vibration complaints received during the construction phase. The name and phone number of the complaint coordinator shall be conspicuously posted at construction areas and on all advanced notifications. Entities that are responsible and oversee sensitive receptors within vicinity of the project shall be given written notification of the dates and times of construction during which noise and vibration may occur in conjunction with the project. The compliant coordinator shall be responsible for taking steps required to resolve complaints, including periodic noise and vibration monitoring, if necessary.

- Noise generated from any rock-crushing or screening operations performed within 3,000 feet of any occupied residence and sensitive receptor shall be mitigated by the individual improvement project proponent or local jurisdiction by strategic placement of material stockpiles between the operation and the affected properties or by other means approved by the individual improvement project proponent local jurisdiction.

- The individual improvement project proponent or local jurisdiction shall direct contractors to implement appropriate additional noise and vibration mitigation measures including, but not limited to, changing the location of stationary construction equipment, shutting off idling equipment, rescheduling construction activity, notifying adjacent residents and entities that are responsible and oversee sensitive receptors within vicinity of the project in advance of construction work, and installing acoustic barriers around stationary construction noise sources to comply with local noise control requirements.

- The individual improvement project proponent or local jurisdiction shall implement use of portable barriers during construction of subsurface barriers, debris basins, and storm water drainage facilities.

- No pile-driving or blasting operations will be performed within 3,000 feet of an occupied residence and sensitive receptor on Sundays, legal holidays, or between the hours of 8:00 p.m. and 8:00 a.m. on other days. Any variance from this condition shall be obtained from the individual improvement project proponent or local jurisdiction and shall be approved by the local jurisdiction. In the event that such operations affect sensitive receptors, specific hours of construction shall be agreed upon between the individual improvement project proponent or local jurisdiction and the entities that are responsible and oversee sensitive receptors to minimize the noise and vibration impacts on sensitive receptors.

- Wherever possible, sonic or vibratory pile drivers shall be used instead of impact pile drivers, (sonic pile drivers are only effective in some soils). If sonic or vibratory pile drivers are not feasible, acoustical enclosures shall be provided as necessary to ensure that pile-driving noise does not exceed speech interference criterion at the closest sensitive receptor, and that the noise level at the property line of sensitive receptors shall not exceed 65 dBA and there is no significant vibration within the structures of the sensitive receptor.

- In residential areas, pile driving shall be limited to construction to between 6:00 a.m. and 8:00 p.m. on Monday through Friday and between 7:00 a.m. and 8:00 p.m. on weekends.

- Engine and pneumatic exhaust controls on pile drivers shall be required as necessary to ensure that exhaust noise from pile driver engines are minimized to the extent feasible.

- Where feasible, pile holes will be pre-drilled to reduce potential noise and vibration impacts.

2. As part of the appropriate environmental review of each project, a project specific noise evaluation shall be conducted and appropriate mitigation identified and implemented.

    - Project implementation agencies shall employ, where their jurisdictional authority permits, land use planning measures, such as zoning, restrictions on development, site design, and use of buffers to ensure that future development is compatible with adjacent transportation facilities.

    - Project implementation agencies shall, to the extent feasible and practicable, maximize the distance between noise-sensitive land uses and new roadway lanes, roadways, rail lines, transit centers, park-and-ride lots, and other new noise generating facilities.

    - Project implementation agencies shall construct sound reducing barriers between noise sources and noise-sensitive land uses. Sound barriers can be in the form of earth-berms or soundwalls. Constructing roadways so as appropriate and feasible that they are depressed below-grade of the existing sensitive land uses also creates an effective barrier between the roadway and sensitive receptors.

    - Project implementation agencies shall, to the extent feasible and practicable, improve the acoustical insulation of dwelling units where setbacks and sound barriers do not sufficiently reduce noise.

    - The project implementation agencies shall implement, to the extent feasible and practicable, speed limits and limits on hours of operation of rail and transit systems, where such limits may reduce noise impacts.

    - Passenger stations, central maintenance facilities, decentralized maintenance facilities, and electric substations should be located away from sensitive receptors.

3. Mitigation measures intended to reduce the noise impacts on sensitive receptors are part of the 2011 RTP. These include: site design, buffers, soundwalls, etc.

    Further reduction in noise impacts would be obtained through the implementation of the measures described in 3.11.1 and 3.11.2.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

## Population/Housing

### Mitigation Measures

1. The individual improvement project proponent or local jurisdiction shall identify and evaluate the impacts on population and job displacement as part of the appropriate improvement project-specific environmental review and shall identify mitigation measures to reduce the impacts to a level of less than significant. The project implementing agency or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures.

    - Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies, and all agencies, districts, and entities that are responsible and oversee sensitive receptors to identify and determine the policies, requirements, rules and regulations that may be applicable to the project and the mitigation of impacts following construction of the project in terms of the ability of local agencies to address growth, development, population and housing, and displacement of housing and jobs affected by the development affects of the project.

    - Following construction of the project, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county land use plans, policies, requirements, rules and regulations, and all plans, policies, requirements, rules and requirements of the agencies, districts, and entities that are responsible and oversee sensitive receptors applicable to the to the project and the mitigation of impacts of the project in terms of the ability of local agencies to address growth, development, population and housing, and displacement of housing and jobs affected by the development affects of the project.

    - For projects with the potential to displace homes or businesses, the individual improvement project proponent or local jurisdiction shall evaluate alternate route alignments and transportation facilities that minimize the displacement of homes and businesses. Potential impacts shall be minimized to the extent feasible. If possible, existing rights-of-way shall be used.

    - The individual improvement project proponent or local jurisdiction shall identify businesses and residences to be displaced. As required by law, relocation and assistance shall be identified and provided to displaced residents and businesses, in accordance with the federal Uniform Relocation and Real Property Acquisition Policies Act of 1970, the State of California Relocation Assistance Act, and any other applicable federal state city and County policies, rules, regulations, requirements and laws.

    - The individual improvement project proponent or local jurisdiction shall develop a construction schedule that minimizes potential neighborhood deterioration from protracted waiting periods between right-of-way acquisition and construction.

2. The individual improvement project proponent or local jurisdiction shall identify and evaluate the impacts associated with the disruption and division of a neighborhood or community as a part of the appropriate improvement project-specific environmental review and shall identify mitigation measures to reduce the impacts to a level of less than significant. The project implementing agency or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures.

- Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies, and all agencies, districts, and entities that are responsible and oversee sensitive receptors to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the project and the mitigation of impacts following construction of the project in terms of the impacts of projects associated with the disruption and division of neighborhoods and communities and the ability of local agencies to provide public services and facilities required after the disruption and divisions of the neighborhood or community.

- Following construction of the project, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county plans, policies, requirements, rules and regulations, and all plans, policies, requirements, rules and requirements of the agencies, districts, and entities that are responsible and oversee sensitive receptors applicable to the project and the mitigation of impacts of the project in terms of the impacts of projects associated with the disruption and division of neighborhoods and communities and the ability of local agencies to provide public services and facilities required after the disruption and divisions of the neighborhood or community.

- The individual improvement project proponent or local jurisdiction shall design new transportation facilities to protect access/egress to and from existing community public facilities. During the design phase of the individual improvement project, community amenities and public facilities shall be identified and access/egress to and from them shall be considered in the design of the individual improvement project.

- The individual improvement project proponent or local jurisdiction shall design roadway improvements, in a manner that minimizes barriers to pedestrians and bicyclists. During the design phase, pedestrian and bicycle routes shall be determined that permit easy connections to community public facilities nearby in order not to divide the communities.

- The individual improvement project proponent or local jurisdiction shall evaluate school pedestrian, bicycle, school district transportation, and private passenger transportation routes to school facilities and identify mitigation measures to provide for the safe, hazard free, and efficient routes to minimize the disruption to neighborhood and community schools.

3. The mitigation measures listed above for Impacts 3.12.1 and 3.12.2 would be applied as mitigation for this impact. In addition, the following measure would apply.

    - The individual improvement project proponent or local jurisdiction shall identify and evaluate the impacts associated with the direct and indirect growth inducing potential of individual projects as a part of the appropriate improvement project-specific environmental review and shall identify mitigation measures to reduce the impacts to a level of less-than-significant. Individual environmental documents shall quantify indirect impacts (growth that could be facilitated or induced) on public services, public facilities, and utilities and to the extent feasible shall identify mitigation measures to reduce the impacts to a level of less-than-significant. The project implementing agency or local jurisdiction shall amend its General Plan, area plan, specific plan and any other land use documents as appropriate and consistent with State statutes to reduce the impacts. The project implementing agency or local jurisdiction shall be responsible for ensuring adherence to this mitigation measure. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures.

        - Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable

city and county agencies, and all agencies, districts, and entities that are responsible and oversee the public services, public facilities and utilities to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the project and the mitigation of impacts following construction of the project in terms of the impacts of projects on public services, public facilities and utilities resulting from the direct or indirect growth inducing impacts of the project and the ability of local agencies to provide public services, public facilities and utilities required for the areas affected.

- Following construction of the project, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county agencies and all agencies, districts, and entities that are responsible and oversee the public services, public facilities and utilities to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the project and the mitigation of impacts following construction of the project in terms of the impacts of projects on public services, public facilities and utilities resulting from the direct or indirect growth inducing impacts of the project and the ability of local agencies to provide public services, public facilities and utilities required for the areas affected.

Responsibility for Implementation of Mitigation Measures:

MCTC and/or Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

As noted in the mitigation measure. During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

MCTC, Caltrans and/or local agencies.

## Public Utilities, Other Utilities & Services Systems

Mitigation Measures

1. As part of project-specific environmental review, the individual improvement project proponent or local jurisdiction shall be responsible for completing a police, fire, and medical services analysis and study to determine the project-specific impacts on police, fire and emergency services in the County and provide the mitigation measures that shall reduce the impacts to a level of less than significant. The project implementing agency or local jurisdiction will be responsible for ensuring adherence to the mitigation measures prior to and during constructions. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures.

    - Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the construction of the project and the mitigation of impacts associated with traffic delays and rerouting during construction.

- Prior to commencing and during the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county policies, requirements, and rules and regulations that may be applicable to the construction of the project and the mitigation of impacts associated with traffic delays and rerouting during construction.

- Prior to construction, the individual improvement project proponent or local jurisdiction shall ensure that all necessary local and state road and railroad encroachment permits are obtained. The individual improvement project proponent or local jurisdiction also shall comply with all applicable conditions of approval. As deemed necessary by the governing jurisdiction, the road encroachment permits shall require the contractor to prepare a traffic control plan in accordance with professional engineering standards prior to construction. Traffic control plans shall include the following requirements:

  - Identify all roadway locations where special construction techniques (e.g., directional drilling or night construction) will be used to minimize impacts to traffic flow.
  - Develop circulation and detour plans to minimize impacts to local street circulation. This may include the use of signing and flagging to guide vehicles through and/or around the construction zone.
  - Schedule truck trips outside of peak morning and evening commute hours.
  - Limit lane closures during peak hours to the extent possible.
  - Use haul routes, minimizing truck traffic on local roadways, to the extent possible.
  - Install traffic control devices as specified in the California Department of Transportation Manual of Traffic Controls for Construction and Maintenance Work Zones.
  - Develop and implement access and routing plans for highly sensitive land uses such as police and fire stations, and hospitals. Access plans shall be developed with the facility owner or administrator. To minimize disruption of emergency vehicle access, affected jurisdictions shall be asked to identify detours for emergency vehicles, which will then be posted by the contractor. The facility owner or operator shall be notified in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures.
  - Store construction materials only in designated areas.

- Projects requiring police protection, fire service, and emergency medical service shall coordinate with the local fire department and police department to ensure that the existing public services and utilities will be able to handle the increase in demand for their services. If the current levels of service at the individual improvement project site are found to be inadequate, infrastructure improvements and personnel requirements for the appropriate public service will be identified in each individual improvement project's CEQA documentation.

- The growth inducing potential of individual projects will be carefully evaluated so that the full implications of the Project are understood. Individual environmental documents shall quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities.

2. As part of project-specific environmental review, project implementation agencies will evaluate the impacts on demand for solid waste, wastewater, and potable water services in the County. Appropriate mitigation measures should be identified for all impacts. The project implementation agencies or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. MCTC will be provided with documentation indicating compliance to mitigation measures.

   - Projects requiring wastewater service, solid waste collection, or potable water service will coordinate with the local public works department to ensure that the existing public services and utilities would be able to handle the increase. If the current infrastructure servicing the individual improvement project site is found to

be inadequate, infrastructure improvements for the appropriate public service utility will be identified in each individual improvement project's CEQA documentation.

- Reclaimed water will be used for landscaping purposes instead of potable water wherever feasible.
- Each of the proposed projects will comply with applicable regulations related to solid waste disposal.
- The construction contractor will work with the County Recycling Coordinator to ensure that source reduction techniques and recycling measures are incorporated into individual improvement project construction.
- The amount of solid waste generated during construction will be estimated prior to construction, and appropriate disposal sites will be identified and utilized.

3. Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the construction of the project and the mitigation of impacts associated with soil accumulation. In addition, the individual improvement project proponent or local jurisdiction shall be responsible for completing a school district bus transportation routing and schedules analysis and study to determine the project-specific impacts on school district bus routing and schedules and provide the mitigation measures that shall reduce the impacts to a level of less-than-significant.

   - Prior to commencing and during the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county policies, requirements, rules and regulations, to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the construction of the project and the mitigation of impacts associated with soil accumulation.
   - As part of project-specific environmental review, the individual improvement project proponent or local jurisdiction shall evaluate the impacts resulting from soil accumulation during construction of the projects within the areas of construction and in areas outside of construction zones and mitigation measures shall be identified to reduce the impacts to a level of less than significant. The individual improvement project proponent or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures during construction.
   - Implement appropriate measures, including washing of construction vehicles undercarriages before leaving the construction site or increasing the use of street cleaning machines, as well as other activities as appropriate, to reduce the amount of soil on local roadways as a result of construction.

4. As part of project-specific environmental review, project implementation agencies will evaluate the impacts resulting from the potential for severing underground utility lines during construction of the projects. Appropriate mitigation measures will be identified for all impacts. The project implementation agencies or local jurisdiction will be responsible for ensuring adherence to mitigation measures. MCTC will be provided with documentation indicating compliance with mitigation measures.

5. Prior to construction, the implementing agency or contractor will identify the locations of existing utility lines. All known utility lines will be avoided during construction.

- The growth inducing potential of individual projects shall be carefully evaluated so that the full implications of the projects are understood. Individual environmental documents shall quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities to the extent feasible.

- The California Integrated Waste Management Board shall continue to enforce solid waste diversion mandates that are enacted by the Legislature.

- Local jurisdictions shall continue to adopt programs to comply with state solid waste diversion rate mandates and, where possible, shall encourage further recycling to exceed these rates.

- Local jurisdictions should implement or expand city or county-wide recycling and composting programs for residents and businesses. This could include extending the types of recycling services offered (e.g., to include food and green waste recycling) and providing public education and publicity about recycling services.

- Project implementation agencies shall coordinate regional approaches and strategic siting of waste management facilities.

- Project implementation agencies shall prioritize siting of new solid waste management facilities including recycling, composting, and conversion technology facilities in conjunction with existing waste management or material recovery facilities.

- Project implementation agencies shall increase programs to educate the public and increase awareness of reuse, recycling, composting, and green building benefits and raise consumer education issues at the county and city level, as well as at local school districts and education facilities.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

## Transportation/Traffic

Mitigation Measures

1. Implementation of street and highway improvement projects and programs generally will serve to improve traffic flows and reduce congestion and delay within Madera County. However, street and highway needs are constrained by limited funding sources that are necessary to implement additional projects along the regional transportation system. As indicated above, LOS deficiencies are projected to occur, even considering the wide range of financially constrained street and highway improvements identified in the 2011 RTP.

To address these and other transportation/circulation related impacts, the following mitigation measures are recommended:

- A number of local street and road and State Route segments along the regional street and highway system will experience deficient LOS conditions by 2035. Mitigation measures for these segments have not been identified or programmed in the 2011 RTP. Intersection improvements and lane additions would improve deficient levels of service to acceptable levels consistent with minimum LOS policies identified in the 2011 RTP; however, funding to address the improvements is not available or the costs to mitigate the deficiencies are prohibitive. MCTC shall coordinate efforts to identify appropriate strategies that would improve deficient levels of service along the affected streets and highways. MCTC shall continue to work with local agencies and Caltrans, District 06 to identify alternative improvements, associated cost estimates, and an implementation plan and schedule and during update of local general plans and other planning efforts. Various funding sources shall be analyzed as part of implementation plans and findings shall be incorporated into future RTPs.

- Local agencies shall update general, area, community and specific plans consistent with State statutes and shall prepare capital improvement programs to reflect the current status of future street and highway improvements. The timing of improvements shall also be reflected. These measures will help MCTC identify appropriate and available funding for planned street and highway improvements along the regional street and road system during development of future RTPs.

2. As part of project-specific environmental review, the individual improvement project proponent or local jurisdiction shall be responsible for completing an analysis and study to determine the project-specific impacts on affected local school districts, public transit agencies, emergency service providers, or other affected community service agencies to address potential impacts of a project on an agency's transportation program including potential hazards or unsafe conditions, re-routing requirements, and route scheduling and delays and provide the mitigation measures that shall reduce the impacts to a level of less-than-significant. The project implementing agency or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures prior to and during construction. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures.

   - Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies and applicable school districts responsible for school district bus transportation routing and schedules to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the construction of the project and the mitigation of impacts associated with traffic delays and rerouting during construction.

   - Prior to commencing and during the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county policies, requirements, rules and regulations, and applicable school districts responsible for school district bus transportation routing and schedules to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the construction of the project and the mitigation of impacts associated with traffic delays and rerouting during construction.

   - Prior to commencing and during the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall prepare in conjunction with local school districts, plans and programs to mitigate the impacts of the project on school district bus transportation, and to provide for safe

and hazard free pedestrian, bicycle and private vehicle routes and detours required during the construction of the project.

- The growth inducing potential of individual projects shall be carefully evaluated so that the full implications of the projects are understood. Individual environmental documents shall quantify indirect impacts (growth that could be facilitated or induced) on public services and utilities to the extent feasible. Lead and responsible agencies then will make any necessary adjustments to the applicable General Plan. Any such identified adjustment shall be communicated to MCTC.

Responsibility for Implementation of Mitigation Measures:

Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

Caltrans and local agencies.

## Energy & Energy Consumption

Mitigation Measures

1. The following mitigation measures shall be implemented by project implementation agencies to reduce the significant energy impacts of the proposed 2011 RTP. In addition, climate change mitigation measures referenced in Chapter 3, Section 3.5 will also contribute to the mitigation of energy consumption and energy conservation impacts.

    - Project implementation agencies shall review energy impacts as part of any CEQA-required project-level environmental analysis and specify appropriate mitigation measures for any identified energy impacts.

    - During the design and approval of transportation improvements implemented under the proposed 2011 RTP, the following energy efficiency measures shall be incorporated when applicable:

        - The design or purchase of any lighting fixtures including but not limited to lighting at transit stations, arterials or freeways, and parking structures/lots shall achieve energy reductions beyond an estimated baseline energy use for such lighting.
        - LED technology shall be used for all new or replaced traffic lights, rail signals, and other features compatible with LED technology.

    - Local agencies should consider various best practices and technological improvements that can reduce the consumption of fossil fuels such as:

        - Expanding light-duty vehicle retirement programs
        - Increasing commercial vehicle fleet modernization

- Implementing driver training modules on fuel consumption
- Replacing gasoline powered mowers with electric mowers
- Reducing idling from construction equipment
- Incentivizing alternative fuel vehicles and equipment
- Developing infrastructure for alternative fueled vehicles
- Implementing truck idling rules, devices, and truck-stop electrification
- Requiring electric truck refrigerator units
- Reducing locomotives fuel use
- Modernizing older off-road engines and equipment
- Encouraging freight mode shift
- Limit use and develop fleet rules for construction equipment
- Requiring zero-emission forklifts

- Local agencies should include energy analyses in environmental documentation and general plans with the goal of conserving energy through the wise and efficient use of energy. For any identified energy impacts, appropriate mitigation measures should be developed and monitored. MCTC recommends the use of Appendix F, Energy Conservation, of the *CEQA Guidelines.*

- Local agencies should streamline permitting and provide public information to facilitate accelerated construction of solar and wind power.

- Local agencies should adopt a "Green Building Program" to promote green building standards. Green buildings can reduce local environmental impacts, regional air pollutant emissions and global greenhouse gas emissions. Green building standards involve everything from energy efficiency, usage of renewable resources and reduced waste generation and water usage. For example, water-related energy use consumes 19 percent of the state's electricity. The residential sector accounts for 48 percent of both the electricity and natural gas consumption associated with urban water use. While interest in green buildings has been growing for some time, cost has been a main consideration as it may cost more up front to provide energy-efficient building components and systems. Initial costs can be a hurdle even when the installed systems will save money over the life of the building. Energy efficiency measures can reduce initial costs, for example, by reducing the need for over-sized air conditioners to keep buildings comfortable. Undertaking a more comprehensive design approach to building sustainability can also save initial costs through reuse of building materials and other means.

  A comprehensive study of the value of green building savings is the 2003 report to California's Sustainable Building Task Force. In the words of the report: "While the environmental and human health benefits of green building have been widely recognized, this comprehensive report confirms that minimal increases in upfront costs of about 2% to support green design would, on average, result in life cycle savings of 20% of total construction costs -- more than ten times the initial investment. For example, an initial upfront investment of up to $100,000 to incorporate green building features into a $5 million project would result in a savings of $1 million in today's dollars over the life of the building."

- Local governments should alter zoning to improve jobs/housing balance, create communities where people live closer to work, and bike, walk, and take transit as a substitute for personal auto travel. Creating walkable, transit oriented nodes would generally reduce energy use and greenhouse gas emissions. Residential energy use (electricity and natural gas) accounts for 14 percent of California's greenhouse gas emissions. It is estimated that households in transit-oriented developments drive 45 percent less than residents in auto-dependent neighborhoods. In addition, mixed land uses (i.e., residential developments near work places, restaurants, and shopping centers) with access to public transportation have been shown

to save consumers up to 512 gallons of gasoline per year. Furthermore, studies have shown that the type of housing (such as multi-family) and the size of a house have strong relationships to residential energy use. Residents of single-family detached housing consume over 20 percent more primary energy than those of multifamily housing and 9 percent more than those of single-family attached housing.

- MCTC shall work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers.

- Bid solicitations for construction of projects proposed in the 2011 RTP and subsequent RTP updates shall preference the use of alternative formulations of cement and asphalt with reduced GHG emissions to the extent that such cement and asphalt formulations are available at a reasonable cost in the marketplace. Solicitations shall also preference the recycling of construction waste and debris if market conditions permit.

- MCTC shall continue to develop, in coordination with the California Air Resources Board, a data and information collection and analysis system that provides an understanding of the energy demand and greenhouse gas emissions in the Madera region.

- All mitigation measures listed in Chapter 3, Section 3.5.1, are incorporated by reference and shall be implemented by implementing agencies to address energy conservation impacts.

Responsibility for Implementation of Mitigation Measures:

MCTC and/or Implementing Agencies (Caltrans and local agencies).

When Mitigation Measure is to be Implemented:

As noted in the mitigation measure. During project review by Caltrans and local agencies. Inspection during construction. At Sign-off by Caltrans and local agencies.

Responsibility for Monitoring Implementation:

MCTC, Caltrans and/or local agencies.

# Addendum to the MCTC 2011 RTP Final SEIR

- Chapter 3 of the Final SEIR: Add the following change to Chapter 3, Changes, Additions and Corrections to the Draft EIR:

  - Chapter 3, replace Section 3.3, with Attachment A.
  - Chapter 3, replace Section 3.5, with Attachment B.
  - Revise all table numbers in Chapter 3, Sections 3.6 through 3.15 to begin with Table 3-35.

# 3.3 AIR QUALITY

Madera County is located in one of the most polluted air basins in the country – the San Joaquin Valley Air Basin. The surrounding topography includes foothills and mountains to the east and west. These mountain ranges direct air circulation and dispersion patterns. Temperature inversions can trap air within the Valley, thereby preventing the vertical dispersal of air pollutants. In addition to topographic conditions, the local climate can also contribute to air quality problems. Climate in Madera County is classified as Mediterranean, with moist cool winters and dry warm summers.

Ozone, classified as a "regional" pollutant, often afflicts areas downwind of the original source of precursor emissions. Ozone can be easily transported by winds from a source area. Peak ozone levels tend to be higher in the southern portion of the Valley, as the prevailing summer winds sweep precursors downwind of northern source areas before concentrations peak. The separate designations reflect the fact that ozone precursor transport depends on daily meteorological conditions.

Other primary pollutants, carbon monoxide (CO), for example, may form high concentrations when wind speed is low. During the winter, Madera County experiences cold temperatures and calm conditions that increase the likelihood of a climate conducive to high CO concentrations.

Surface radiant cooling can also cause temperature inversions. On clear winter nights, the ground loses heat at a rapid rate, causing air in contact with it to cool. Once formed, radiation inversions are similar to subsidence inversions with respect to their effects on pollutant dilution. As a result, conditions in Madera County are conducive to the containment of air pollutants.

## Regulatory

Air quality in the County is addressed through the efforts of various federal, state, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, regulations, planning, policy-making, education, and a variety of programs. The agencies primarily responsible for improving the air quality within Madera County are discussed below, along with their individual responsibilities.

### Federal Regulations

- National Environmental Policy Act (NEPA)

  The National Environmental Policy Act (NEPA) provides general information on the effects of federally funded projects. The act was implemented by regulations included in the Code of Federal Regulations (40CFR6). The code requires careful consideration concerning environmental impacts of federal actions or plans, including projects that receive federal funds. The regulations address impacts on land uses and conflicts with state, regional, or local plans and policies, among others. They also require that projects requiring NEPA review seek to avoid or minimize adverse effects of proposed actions and to restore and enhance environmental quality as much as possible.

- Transportation Conformity Analysis

Transportation conformity requirements were added to the FCAA in the 1990 amendments, and the EPA adopted implementing regulations in 1997. See §176 of the FCAA (42 U.S.C. §7506) and 40 CFR Part 93, Subpart A. Transportation conformity serves much the same purpose as general conformity: it ensures that transportation plans, transportation improvement programs, and projects that are developed, funded, or approved by the United States Department of Transportation or that are recipients of funds under the Federal Transit Act or from the Federal Highway Administration (FHWA), conform to the SIP as approved or promulgated by EPA.

Currently, transportation conformity applies in nonattainment areas and maintenance areas. Under transportation conformity, a determination of conformity with the applicable SIP must be made by the agency responsible for the project, such as the Metropolitan Planning Organization, the Council of Governments, or a federal agency. The agency making the determination is also responsible for all the requirements relating to public participation. Generally, a project will be considered in conformance if it is in the transportation improvement plan and the transportation improvement plan is incorporated in the SIP. If an action is covered under transportation conformity, it does not need to be separately evaluated under general conformity.

- Transportation Control Measures

One particular aspect of the SIP development process is the consideration of potential control measures as a part of making progress towards clean air goals. While most SIP control measures are aimed at reducing emissions from stationary sources, some are typically also created to address mobile or transportation sources. These are known as transportation control measures (TCMs). TCM strategies are designed to reduce vehicle miles traveled and trips, or vehicle idling and associated air pollution. These goals are achieved by developing attractive and convenient alternatives to single-occupant vehicle use. Examples of TCMs include ridesharing programs, transportation infrastructure improvements such as adding bicycle and carpool lanes, and expansion of public transit.

## Federal Agencies

- U.S. Environmental Protection Agency (EPA)

The Federal Clean Air Bill, first adopted in 1967 and periodically amended since then, established federal ambient air quality standards. A 1987 amendment to the Bill set a deadline for the attainment of these standards. That deadline has since passed. The other Federal Clean Air Bill Amendments, passed in 1990, share responsibility with the state in reducing emissions from mobile sources. The U.S. Environmental Protection Agency (U.S. EPA) is responsible for enforcing the 1990 amendments.

The Federal Clean Air Act (FCAA) and the national ambient air quality standards identify levels of air quality for six “criteria” pollutants, which are considered the maximum levels of ambient air pollutants considered safe, with an adequate margin of safety, to protect public health and welfare. The six criteria pollutants include ozone, CO, nitrogen dioxide, sulfur dioxide, particulate matter 10 microns in size and smaller ($PM_{10}$), and lead.

The U.S. EPA requires each state to prepare and submit a State Implementation Plan (SIP) that describes how the state will achieve the federal standards by the specified dates, depending on the severity of the air quality

within the state or basin. Based on the provisions contained in the 1990 amendment, EPA designated the entire San Joaquin Valley as nonattainment for two pollutants: ozone and particle matter less than 10 microns in size or $PM_{10}$.

In 2004, the EPA reclassified the San Joaquin Valley ozone nonattainment area from its previous severe status to "extreme" at the request of the SJVAPCD Board. Madera County is considered to be in non-attainment of ozone and $PM_{2.5}$ standards.

State Regulations

- CARB Mobile-Source Regulation

The State of California is responsible for controlling emissions from the operation of motor vehicles in the state. Rather than mandating the use of specific technology or the reliance on a specific fuel, the CARB's motor vehicle standards specify the allowable grams of pollution per mile driven. In other words, the regulations focus on the reductions needed rather than on the manner in which they are achieved. Towards this end, the CARB has adopted regulations, which required auto manufacturers to phase in less polluting vehicles.

- California Clean Air Act

The California Clean Air Act (CCAA) was first signed into law in 1988. The CCAA provides a comprehensive framework for air quality planning and regulation, and spells out, in statute, the state's air quality goals, planning and regulatory strategies, and performance. The CCAA establishes more stringent ambient air quality standards than those included in the FCAA. CARB is the agency responsible for administering the CCAA. CARB established ambient air quality standards pursuant to the California Health and Safety Code (CH&SC) [§39606(b)], which are similar to the federal standards. The San Joaquin Valley Air Pollution Control District is one of 35 air quality management districts that have prepared air quality management plans to accomplish a five percent annual reduction in emissions documenting progress toward the state ambient air quality standards.

- Tanner Air Toxics Act

California regulates TACs primarily through the Tanner Air Toxics Act (AB 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and has adopted EPA's list of HAPs as TACs. Most recently, diesel PM was added to the CARB list of TACs. Once a TAC is identified, ARB then adopts an Airborne Toxics Control Measure (ATCM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate BACT to minimize emissions.

The AB 2588 requires that existing facilities that emit toxic substances above a specified level prepare a toxic-emission inventory, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures. CARB has adopted diesel exhaust control measures and more stringent emission standards for various on-road mobile sources of emissions, including transit buses and off-road diesel equipment (e.g., tractors, generators). In February 2000, CARB adopted a new public-transit bus-fleet rule and emission standards for new urban buses. These rules and standards provide for

(1) more stringent emission standards for some new urban bus engines, beginning with 2002 model year engines; (2) zero-emission bus demonstration and purchase requirements applicable to transit agencies; and (3) reporting requirements under which transit agencies must demonstrate compliance with the urban transit bus fleet rule. Upcoming milestones include the low-sulfur diesel-fuel requirement, and tighter emission standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide.

- California Environmental Quality Act (CEQA)

CEQA defines a significant impact on the environment as a substantial, or potentially substantial, adverse change in the physical conditions within the area affected by the project. Land use is a required impact assessment category under CEQA. CEQA documents generally evaluate land use in terms of compatibility with the existing land uses and consistency with local general plans and other local land use controls (zoning, specific plans, etc).

State Agencies

- California Air Resources Board (CARB)

In 1988, the State of California passed the California Clean Air Act (CCAA, State 1988 Statutes, Chapter 1568) that established more stringent state ambient air quality standards, and set forth a program for their achievement. State air basins are established by the California Air Resources Board (CARB). CARB implements state ambient air quality standards, as required in the State CCAA, and cooperate with the federal government in implementing pertinent sections of the federal Clean Air Bill, Amendments. Further, CARB has responsibility for controlling stationary and mobile source air pollutant emissions throughout the state.

Madera County is in the CARB-designated, SJVAB. A map of the SJVAB is provided in Figure 3-3. In addition to Madera County, the SJVAB includes Fresno, Kern, Kings, Merced, San Joaquin, Stanislaus, and Tulare Counties.

Applicable federal and state standards are provided in Table 3-2.

Regional Agencies

- San Joaquin Valley Air Pollution Control District (SJVAPCD)

The District is the agency responsible for monitoring and regulating air pollutant emissions from stationary, area, and indirect sources within Madera County and throughout the SJVAB. The District also has responsibility for monitoring air quality and setting and enforcing limits for source emissions. CARB is the agency with the legal responsibility for regulating mobile source emissions. The District is precluded from such activities under state law.

The District was formed in mid-1991 and prepared and adopted the San Joaquin Valley Air Quality Attainment Plan (AQAP), dated January 30, 1992, in response to the requirements of the State CCAA. The CCAA requires each non-attainment district to reduce pertinent air contaminants by at least five percent (5%) per year until new, more stringent, 1988 state air quality standards are met.


**FIGURE 3-3**
**MCTC 2011 RTP Draft SEIR**
**California Air Basins**

# TABLE 3-2

## Ambient Air Quality Standards

| Pollutant | Averaging Time | California Standards [1] | | Federal Standards [2] | | |
|---|---|---|---|---|---|---|
| | | Concentration [3] | Method [4] | Primary [3,5] | Secondary [3,6] | Method [7] |
| Ozone ($O_3$) | 1 Hour | 0.09 ppm (180 µg/m$^3$) | Ultraviolet Photometry | — | Same as Primary Standard | Ultraviolet Photometry |
| | 8 Hour | 0.070 ppm (137 µg/m$^3$) | | 0.075 ppm (147 µg/m$^3$) | | |
| Respirable Particulate Matter (PM10) | 24 Hour | 50 µg/m$^3$ | Gravimetric or Beta Attenuation | 150 µg/m$^3$ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 20 µg/m$^3$ | | — | | |
| Fine Particulate Matter (PM2.5) | 24 Hour | No Separate State Standard | | 35 µg/m$^3$ | Same as Primary Standard | Inertial Separation and Gravimetric Analysis |
| | Annual Arithmetic Mean | 12 µg/m$^3$ | Gravimetric or Beta Attenuation | 15.0 µg/m$^3$ | | |
| Carbon Monoxide (CO) | 8 Hour | 9.0 ppm (10mg/m$^3$) | Non-Dispersive Infrared Photometry (NDIR) | 9 ppm (10 mg/m$^3$) | None | Non-Dispersive Infrared Photometry (NDIR) |
| | 1 Hour | 20 ppm (23 mg/m$^3$) | | 35 ppm (40 mg/m$^3$) | | |
| | 8 Hour (Lake Tahoe) | 6 ppm (7 mg/m$^3$) | | — | — | — |
| Nitrogen Dioxide ($NO_2$)[8] | Annual Arithmetic Mean | 0.030 ppm (57 µg/m3) | Gas Phase Chemiluminescence | 0.053 ppm (100 µg/m$^3$) | Same as Primary Standard | Gas Phase Chemiluminescence |
| | 1 Hour | 0.18 ppm (339 µg/m$^3$) | | 0.100 ppm | 0.053 ppm (100 µg/m$^3$) | |
| Sulfur Dioxide ($SO_2$) | Annual Arithmetic Mean | — | Ultraviolet Fluorescence | 0.030 ppm (80 µg/m$^3$) | — | Spectrophotometry (Pararosaniline Method) |
| | 24 Hour | 0.04 ppm (105 µg/m$^3$) | | 0.14 ppm (365 µg/m$^3$) | — | |
| | 3 Hour | — | | — | 0.5 ppm (1300 µg/m$^3$) | |
| | 1 Hour | 0.25 ppm (655 µg/m$^3$) | | — | — | — |
| Lead[9] | 30 Day Average | 1.5 µg/m$^3$ | Atomic Absorption | — | — | — |
| | Calendar Quarter | — | | 1.5 µg/m$^3$ | Same as Primary Standard | High Volume Sampler and Atomic Absorption |
| | Rolling 3-Month Average[10] | — | | 0.15 µg/m$^3$ | | |
| Visibility Reducing Particles | 8 Hour | Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape. | | No Federal Standards | | |
| Sulfates | 24 Hour | 25 µg/m$^3$ | Ion Chromatography | | | |
| Hydrogen Sulfide | 1 Hour | 0.03 ppm (42 µg/m$^3$) | Ultraviolet Fluorescence | | | |
| Vinyl Chloride[9] | 24 Hour | 0.01 ppm (26 µg/m$^3$) | Gas Chromatography | | | |

See footnotes on next page ...

For more information please call ARB-PIO at (916) 322-2990 California Air Resources Board (01/27/10)

**This concentration was approved by the Air Resources Board on April 28, 2005 and is expected to become effective in early 2006.*

*Footnotes:*

1. *California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.*
2. *National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.*
3. *Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.*
4. *Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.*
5. *National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.*
6. *National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.*
7. *Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.*
8. *To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).*
9. *The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.*
10. *National lead standard, rolling 3-month average: final rule signed October 15, 2008*

Activities of the SJVAPCD include the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the FCAA and CCAA.

The SJVAPCD has prepared the *2007 Ozone Plan* to achieve Federal and State standards for improved air quality in the SJVAB regarding ozone. The *2007 Ozone Plan* provides a comprehensive list of regulatory and incentive-based measures to reduce emissions of ozone and particulate matter precursors throughout the SJVAB. The 2007 Ozone Plan calls for major advancements in pollution control technologies for mobile and stationary sources of air pollution. The *2007 Ozone Plan* calls for a 75-percent reduction in ozone-forming oxides of nitrogen emissions.

The SJVAPCD has also prepared the *2007 PM10 Maintenance Plan and Request for Redesignation* (2007 PM10 Plan). On April 24, 2006, the SJVAPCD submitted a Request for Determination of PM10 Attainment for the Basin to CARB. CARB concurred with the request and submitted the request to the EPA on May 8, 2006.

On October 30, 2006, the EPA issued a Final Rule determining that the Basin had attained the NAAQS for PM10. However, the EPA noted that the Final Rule did not constitute a redesignation to attainment until all of the FCAA requirements under Section 107(d)(3) were met.

The SJVAPCD has prepared the *2008 PM.2.5 Plan* to achieve Federal and State standards for improved air quality in the San Joaquin Valley Air Basin. The *2008 PM.2.5 Plan* provides a comprehensive list of regulatory and incentive based measures to reduce PM2.5.

In addition to the *2007 Ozone Plan, the 2008 PM2.5 Plan,* and the *2007 PM10 Plan*, the SJVAPCD prepared the *Guide for Assessing and Mitigation Air Quality Impacts* (GAMAQI). The GAMAQI is an advisory document that provides Lead Agencies, consultants, and project applicants with analysis guidance and uniform procedures for addressing air quality impacts in environmental documents. Local jurisdictions are not required to utilize the methodology outlined therein. This document describes the criteria that SJVAPCD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for determining whether or not projects would have significant adverse environmental impacts, identifies methodologies for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts. An update of the GAMAQI was approved on January 10, 2002, and is used as a guidance document for this analysis.

The SJVAPCD 2007 Ozone, 2007 $PM_{10}$, 2008 PM2.5 as well as the 2004 Revision to the California State Implementation Plan contain statewide technology controls mandated by the California Air Resources Board (ARB). A summary of the ARB mandated control measures applicable to the 2011 RTP can be found in the Draft MCTC 2011 Conformity Analysis for the 2011 Federal Transportation Improvement Program and the 2011 Regional Transportation Plan (Conformity Analysis). The Draft Conformity Analysis can be found at the following link: http://maderactc.org/pdf_files/RTP/Draft%20MCTC%202011%20Conformity%20Analysis.pdf

The SJVAPCD Plans identified above represent SJVAPCD's plan to achieve both state and federal air quality standards. The regulations and incentives contained in these documents must be legally enforceable and permanent. These plans break emissions reductions and compliance into different emissions source categories. For this EIR only on-road mobile sources are considered as 2011 RTP does not impact the implementation of any SJVAPCD regulations or incentives on other emissions source categories.

Each of the SJVAPCD plans (2007 Ozone Plan, 2008 $PM_{2.5}$ Plan, and 2007 PM10 Maintenance Plan, which relies on the 2003 $PM_{10}$ Plan for emissions reductions measures) identifies a "budget" for measuring progress toward achieving attainment of the national air quality standard. A "budget" is, in effect, an emissions "threshold" or "not to exceed value" for specific years in which progress toward attainment of the standard must be measured. These specific years can also be described as "budget years" and are established to ensure achievement of the "budget" to demonstrate continued progress toward attainment of the national air quality standard. The term "base year" also reflects a "threshold" or "not to exceed" value against which future emissions from the 2011 RTP are measured.

The United States Environmental Protection Agency defines specific years in which attainment of the federal standards must be reached, and therefore each of these SJVAPCD plans for which the San Joaquin Valley Air Basin is nonattainment contains different "budget years" in which progress must be made toward achievement of the federal standards. These years are documented below. Again the emissions budgets in Tables 3-3 through 3-5 below reflect "thresholds" or "not to exceed" values in the "budget years" for the identified pollutant in order to achieve attainment.

## TABLE 3-3
## On-Road Motor Vehicle Budgets from the 2007 Ozone Plan
## (Summer tons/day)

| County | 2011 | | 2014 | | 2017 | |
|---|---|---|---|---|---|---|
| | ROG | NOx | ROG | NOx | ROG | NOx |
| Madera | 3.7 | 12.2 | 3.1 | 9.8 | 2.6 | 7.8 |

Source: San Joaquin Valley Air Pollution Control District, "2007 Ozone Plan", 2007

## TABLE 3-4
## On-Road Motor Vehicle PM-10 Emissions Budgets
## (Tons per average annual day)

| County | 2020 | |
|---|---|---|
| | PM-10 | NOx |
| Madera | 4.7 | 6.5 |

Source: San Joaquin Valley Air Pollution Control District, "2007 PM10 Maintenance Plan", 2007

## TABLE 3-5
## On-Road Motor Vehicle PM2.5 Emissions Budgets
## (Tons per average annual day)

| County | 2012 | | 2014 | |
|---|---|---|---|---|
| | PM2.5 | NOx | PM2.5 | NOx |
| Madera | 0.5 | 11.4 | 0.3 | 6.7 |

Source: San Joaquin Valley Air Pollution Control District, "2008 PM.2.5 Plan", 2008

The SJVAPCD has adopted numerous rules and regulations to implement its air quality plans. Following, are significant rules that will apply to the proposed project.

- Regulation VIII – Fugitive PM10 Prohibitions

  Regulation VIII is comprised of District Rules 8011 through 8081, which are designed to reduce $PM_{10}$ emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, landfill operations, etc.

- Rule 8021 – Construction, Demolition, Excavation, and Other Earthmoving Activities

  District Rule 8021 requires owners or operators of construction projects to submit a Dust Control Plan to the District if at any time the project involves non-residential developments of five or more acres of disturbed surface area or moving, depositing, or relocating of more than 2,500 cubic yards per day of bulk materials on at least three days of the project. The proposed project will meet these criteria and will be required to submit a Dust Control Plan to the District in order to comply with this rule.

- Rule 4641 – Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations

  If asphalt paving will be used, then paving operations of the proposed project will be subject to Rule 4641. This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

San Joaquin Valley Air Basin Monitoring

The SJVAB consists of eight counties, from Madera County in the north to Kern County in the south. SJVAPCD and CARB maintain numerous air quality monitoring sites throughout each County in the Air Basin to measure ozone, PM2.5, and PM10. It is important to note that the federal ozone 1-hour standard was revoked by the EPA and is no longer applicable for federal standards. Data obtained from the monitoring sites throughout the SJVAB between 2006 and 2009 is summarized in Tables 3-6 through 3-8.

## TABLE 3-6
## SJVAB Ambient Air Quality Monitoring Data Summary - Ozone 2006-2009

| Year | Days > Standard | | | | 1-Hour Observations | | | 8-Hour Averages | | | | Year | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | State | | National | | | State | Nat'l | State | | National | | Coverage | |
| | 1-Hr | 8-Hr | 1-Hr | '08 8-Hr | Max. | D.V.[1] | D.V.[2] | Max. | D.V.[1] | Max. | '08 D.V.[2] | Min | Max |
| 2009 | 82 | 122 | *4* | 98 | 0.135 | 0.14 | *0.14* | 0.11 | 0.124 | 0.11 | 0.105 | 0 | 100 |
| 2008 | 95 | 150 | *19* | 127 | 0.157 | 0.15 | *0.136* | 0.132 | 0.124 | 0.132 | 0.108 | 65 | 100 |
| 2007 | 69 | 138 | *3* | 110 | 0.138 | 0.14 | *0.135* | 0.11 | 0.12 | 0.11 | 0.107 | 85 | 100 |
| 2006 | 90 | 141 | *18* | 120 | 0.141 | 0.14 | *0.135* | 0.122 | 0.117 | 0.121 | 0.11 | 58 | 100 |

Notes: All concentrations expressed in parts per million. The national 1-hour ozone standard was revoked in June 2005 and is no longer in effect. Statistics related to the revoked standard are shown in italics. D.V. [1] = State Designation Value . D.V. [2]= National Design Value.
Sources: California Air Resources Board (ADAM) Air Pollution Summaries, 2006, 2007, and 2008.

## TABLE 3-7
## SJVAB Ambient Air Quality Monitoring Data Summary - PM 2.5 2006-2009

| Year | Est. Days > Nat'l '06 Std. | Annual Average | | Nat'l Ann. Std. D.V.[1] | State Annual D.V.[2] | Nat'l '06 Std. 98th Percentile | Nat'l '06 24-Hr Std. D.V.[1] | High 24-Hour Average | | Year Coverage | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Nat'l | State | | | | | Nat'l | State | Min. | Max. |
| 2009 | 42.9 | 19.3 | 21.2 | 21.5 | 25 | 65.4 | 70 | 82.3 | 85.5 | 37 | 100 |
| 2008 | 66.7 | 23.5 | 21.2 | 21.5 | 25 | 72.3 | 70 | 100.3 | 118.8 | 11 | 100 |
| 2007 | 65.6 | 22 | 25.2 | 20.3 | 25 | 73 | 69 | 103.8 | 154 | 79 | 98 |
| 2006 | 38.7 | 19.3 | 21.6 | 18.9 | 22 | 64.7 | 64 | 87 | 88.1 | 83 | 100 |

Notes: All concentrations expressed in parts per million. State and national statistics may differ for the following reasons: State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria. D.V. [1] = State Designation Value . D.V. [2]= National Design Value

Sources: California Air Resources Board (ADAM) Air Pollution Summaries, 2006, 2007, and 2008.

## TABLE 3-8
## SJVAB Ambient Air Quality Monitoring Data Summary - PM 10 2006-2009

| Year | Est. Days > Std. | | Annual Average | | 3-Year Average | | High 24-Hr Average | | Year |
|---|---|---|---|---|---|---|---|---|---|
| | Nat'l | State | Nat'l | State | Nat'l | State | Nat'l | State | Coverage |
| 2009 | 1.9 | 123.4 | * | 46.5 | * | 56 | 423.8 | 139.5 | 100 |
| 2008 | 4.8 | 182.2 | 59.7 | 55.9 | 57 | 56 | 358.8 | 353.5 | 100 |
| 2007 | 1.4 | 145.1 | 54.8 | 48.5 | 51 | 56 | 172 | 135 | 100 |
| 2006 | 4.2 | 166.8 | 55.4 | 56.4 | 47 | 56 | 303.9 | 255 | 100 |

Notes: The national annual average PM10 standard was revoked in December 2006 and is no longer in effect. An exceedance is not necessarily a violation. Statistics may include data that are related to an exceptional event. State and national statistics may differ for the following reasons: State statistics are based on California approved samplers, whereas national statistics are based on samplers using federal reference or equivalent methods. State and national statistics may therefore be based on different samplers. National statistics are based on standard conditions. State criteria for ensuring that data are sufficiently complete for calculating valid annual averages are more stringent than the national criteria.
Sources: California Air Resources Board (ADAM) Air Pollution Summaries, 2006, 2007, and 2008.

Table 3-9 reflects the ambient air quality classifications for a monitoring site in Fresno, which is the closest monitoring site for Madera, and a monitoring site in Madera at the Pump Yard. Table 3-10 identifies the District's attainment status. As indicated, the SJVAB is nonattainment for Ozone (1 hour and 8 hour) and PM (2.5 microns in size). In accordance with the federal Clean Air Act, EPA uses the design value at the time of standard promulgation to assign nonattainment areas to one of several classes that reflect the severity of the nonattainment problem; classifications range from marginal nonattainment to extreme nonattainment. The Federal Clean Air Act contains provisions for changing the classifications using factors such as clean air progress rates and requests from States to move areas to a higher classification. On April 16, 2004 EPA issued a final rule classifying the SJVAB as extreme nonattainment for Ozone, effective May 17, 2004 (69 FR 20550).

## TABLE 3-9
## Maximum Pollutant Levels at Madera's Pump Yard Monitoring Station

| Pollutant | Time Averaging | 2006 Maximums | 2007 Maximums | 2008 Maximums | Standards National | Standards State |
|---|---|---|---|---|---|---|
| Ozone ($O_3$) | 1 hour | 0.113 ppm | 0.091 ppm | 0.120 ppm | - | 0.09 ppm |
| Ozone ($O_3$) | 8 hour | 0.095 ppm | 0.083 ppm | 0.107 ppm | 0.08 ppm | - |
| Carbon Monoxide (CO)[a] | 8 hour | 3.2 ppm | 2.6 ppm | 2.34 ppm | 9.0 ppm | 9.0 ppm |
| Nitrogen Dioxide ($NO_2$) | 1 hour | 0.051 ppm | 0.047 ppm | 0.053 ppm | - | .025 ppm |
| Nitrogen Dioxide ($NO_2$) | Annual Average | 0.011 ppm | 0.010 ppm | 0.010 ppm | 0.053 ppm | - |
| Particulates ($PM_{10}$)[a] | 24 hour | 117 mg/m$^3$ | 107 mg/m$^3$ | 77.7 mg/m$^3$ | 150 mg/m$^3$ | 50 mg/m$^3$ |
| Particulates ($PM_{10}$)[a] | Federal Annual Arithmetic Mean | 37.7 mg/m$^3$ | 32.0 mg/m$^3$ | 34.4 mg/m$^3$ | 50 mg/m$^3$ | 20 mg/m$^3$ |
| Particulates ($PM_{2.5}$)[a] | 24 hour | 71.0 mg/m$^3$ | 103.8 mg/m$^3$ | 79.5 mg/m$^3$ | 65 mg/m$^3$ | - |
| Particulates ($PM_{2.5}$)[a] | Federal Annual Arithmetic Mean | 16.7 mg/m$^3$ | 18.8 mg/m$^3$ | 17.3 mg/m$^3$ | 15 mg/m$^3$ | 12 mg/m$^3$ |

a. Fresno's 1st Street Monitoring Station
Source: CARB Website, 2010

## TABLE 3-10
## San Joaquin Valley Air Basin – District Attainment Status

| Pollutant | Designation/Classification | |
|---|---|---|
| | Federal Standards | State Standards |
| Ozone- 1 Hour | No Federal Standard | Non-attainment/Severe |
| Ozone - 8 Hour | Non-attainment | No State Standard |
| $PM_{10}$ | Attainment | Non-attainment |
| $PM_{2.5}$ | Non-attainment | Non-attainment |
| Carbon Monoxide | Unclassified/Attainment | Attainment |
| Nitrogen Dioxide | Unclassified/Attainment | Attainment |
| Sulfur Dioxide | Unclassified | Attainment |
| Lead Particulates | No Federal Standard | Attainment |

Source: CARB

Notes:

National Designation Categories

Non-Attainment Area: Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Unclassified/Attainment Area: Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant or meets the national primary or secondary ambient air quality standard for the pollutant.

State Designation Categories

Unclassified: A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or non-attainment.

Attainment: A pollutant is designated attainment if the State standard for that pollutant was not violated at any site in the area during a three-year period.

Non-attainment: A pollutant is designated non-attainment if there was at least one violation of a State standard for that pollutant in the area.

Non-Attainment/Transitional: A subcategory of the non-attainment designation. An area is designated non-attainment/transitional to signify that the area is close to attaining the standard for the pollutant.

## Environmental Setting

This section describes existing air quality within the San Joaquin Valley Air Basin and in Madera County, including the identification of air pollutant standards, meteorological and topological conditions affecting air quality, and current air quality conditions. Air quality is described in relation to ambient air quality standards for criteria pollutants such as, ozone, carbon monoxide, and particulate matter less than 10 microns in size ($PM_{10}$). A complete description of the current air quality requirements is provided in the 2011 RTP and FTIP Air Quality Conformity Finding. The Conformity Finding provides a review of the current status of air quality planning and implementation, including the status of the current State Implementation Plan (SIP), Rate of Progress (ROP) Plans, and the implementation of various transportation control measures (TCMs) that are committed to in the current SIP and are needed to "offset" nonattainment emission increases associated with the Project.

### Geographical Location

The SJVAB is comprised of eight counties: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Encompassing 24,840 square miles, the San Joaquin Valley is the second largest air basin in California. Cumulatively, counties within the Air Basin represent approximately 16 percent of the State's geographic area. The Air Basin is bordered by the Sierra Nevada Mountains on the east (8,000 to 14,492 feet in elevation), the Coastal Range on the west (4,500 feet in elevation), and the Tehachapi Mountains on the south (9,000 feet elevation). The San Joaquin Valley is open to the north extending to the Sacramento Valley Air Basin.

Figure 3-3 provides a map of California Air Basins. Air basins are geographic areas sharing a common "air shed." A description of the Air Basin in the County, as designated by CARB, is provided below.

For the purpose of regulating and monitoring air quality, Madera County is serviced together with the other seven counties in the SJVAB by the San Joaquin Valley Air Pollution Control District (SJVAPCD), which regulates and monitors air quality within the SJVAB.

### Topographic Conditions

Madera County is located within the San Joaquin Valley Air Basin [as determined by the California Air Resources Board (CARB)]. Exhibit 3-3 provides a map of the Air Basin. Air basins are geographic areas sharing a common "air shed." A description of the Air Basin in the County, as designated by CARB, is provided below. Air pollution is directly related to the region's topographic features, which impact air movement within the Basin.

Wind patterns within the SJVAB result from marine air that generally flows into the Basin from the San Joaquin River Delta. The Coastal Range hinders wind access into the Valley from the west, the Tehachapis prevent southerly passage of airflow, and the high Sierra Nevada Mountain Range provides a significant barrier to the east. These

topographic features result in weak airflow that becomes restricted vertically by high barometric pressure over the Valley. As a result, the SJVAB is highly susceptible to pollutant accumulation over time. Most of the surrounding mountains are above the normal height of summer inversion layers (1,500-3,000 feet).

## Climatic Conditions

In addition to topographic conditions, the local climate can also contribute to air quality problems. Light winds and atmospheric stability provide frequent opportunities for pollutants to accumulate in the atmosphere. Wind speed and direction also play an important role in the dispersion and transport of air pollutants. Wind at the surface and aloft can disperse pollution by mixing vertically and by transporting it to other locations.

Ozone is classified as a "regional" pollutant due in part to the time required for ozone formation. Ozone, however, is not a directly emitted pollutant. Ozone is formed when its precursors, nitrogen oxides ($NO_X$) and volatile organic compounds (VOC), react in the presence of sunlight. Ozone precursors can be easily transported by winds from a source area before ozone concentrations peak. In addition, temperature and solar radiation are important factors in the chemistry of ozone formation because ozone is formed in a photochemical reaction requiring sunlight. Generally, higher temperatures create greater amounts of ozone, since reaction rates increase with temperature. However, extremely hot temperatures can lift or break the inversion layer.

Localized pollutants, carbon monoxide (CO) for example, may form high concentrations when wind speed is low. Temperature inversions can also be caused by surface radiant cooling. On clear winter nights, the ground loses heat at a rapid rate, causing air in contact with it to cool. Once formed, radiation inversions are similar to subsidence inversions with respect to their effects on pollutant dilution. A description of specific climatic factors in the Air Basin is provided below.

Climate in the San Joaquin Valley is Mediterranean with moist cool winters and dry warm summers. Precipitation is confined primarily to the winter months. The Madera County portion of the SJVAB had an average annual rainfall over a 30-year period of approximately 14 inches on the Valley floor. During summer months, wind speed and direction data indicate that winds usually originate at the north end of the Valley and flow in a southerly direction through the Tehachapi Pass into the Mojave Air Basin. These prevailing winds, known as "up-valley winds", originate with coastal breezes that enter the San Joaquin Valley through breaks in the coastal ranges, particularly though the Carquinez Straits in the San Francisco Bay Area and the Sacramento Valley Area; however, sources of air pollution, including stationary, mobile and area sources within the central and southern portions of the San Joaquin Valley, are considered to be a greater influence under most conditions. Peak ozone levels tend to be higher in the southernmost portion of the San Joaquin Valley, as the prevailing summer winds sweep precursors downwind of northern source areas.

During winter months, wind speed and direction data indicate that wind occasionally originates from the south end of the Valley and flows in a northerly direction. Also during the winter, the San Joaquin Valley experiences light variable winds, less than ten miles per hour (mph). Low wind speeds, combined with low inversion layers during the winter, create a climate conducive to high CO concentrations.

Wind speed and direction also change throughout the day. During the day, northerly winds prevail. However, in the late evening through the early morning, wind flow reverses direction due to the effects of cooler drainage wind from surrounding mountains. The interruption of northerly wind, including the evening and morning transition between the two wind flow patterns, is known as an "eddy". This adds to the complexity of regional wind flow and pollutant transport within the SJVAB.

## Other Air Quality Determinants

In addition to climatic conditions (wind, lack of rain, etc.), air pollution can be caused by human/socioeconomic conditions. Air pollution in the SJVAB can be directly attributed to human activities, which cause air pollutant emissions. Human causes of air pollution in the Valley consist of population growth, urbanization (gas-fired appliances, residential wood heaters, etc.), mobile sources (i.e., cars, trucks, airplanes, trains, etc.), oil production, and agriculture. These are called anthropogenic, or human-caused, sources of emissions. The most significant factors, which are accelerating the decline of air quality in the SJVAB, are the Valley's rapid population growth and its associated increases in traffic, urbanization, and industrial activity.

Carbon monoxide emissions overwhelmingly come from mobile sources in the San Joaquin Valley; on-road vehicles contribute 65 percent, while other mobile vehicles, such as trains, planes, and off-road vehicles, contribute another 17 percent. The Air District is the agency empowered to regulate air pollutant emissions. The Air District regulates air quality through its permit authority for most types of stationary emission sources and through its planning and review activities for other sources.

Motor vehicles account for significant portions of regional gaseous and particulate emissions. Local large employers such as industrial plants can also generate substantial regional gaseous and particulate emissions. In addition, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.).

Ozone is the result of a photochemical reaction between Oxides of nitrogen ($NO_x$) and Reactive Organic Gases (ROG). Mobile sources contribute 64 percent of all $NO_x$ emitted from anthropogenic sources. In addition, mobile sources contribute 53 percent of all the ROG emitted from sources within the San Joaquin Valley.

The principal factors that affect air quality in and around Madera County are:

- The sink effect, climatic subsidence and temperature inversions and low wind speeds
- Automobile and truck travel
- Increases in mobile and stationary pollutants generated by local urban growth

Automobiles, trucks, buses and other vehicles using hydrocarbon fuels release exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

Other sources may not seem to fit into any one of the major categories or they may seem to fit in a number of them. These could include agricultural uses, dirt roads, animal shelters; animal feed lots, chemical plants and industrial waste disposal, which may be a source of dust, odors, or other pollutants. For Madera County, this category includes several agriculturally related activities, such as plowing, harvesting, dusting with herbicides and pesticides and other related activities. Finally, industrial contaminants and their potential to produce various effects depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Madera County consist of agricultural production and processing operations, wine production, and marketing operations.

The primary contributors of $PM_{10}$ emissions in the San Joaquin Valley are fugitive windblown dust from "open" fields (38%) and road dust, both paved and unpaved (38%). Farming activities only contribute 14 percent of the $PM_{10}$.

## Air Quality Standards

The Federal Clean Air Act (CAA), first adopted in 1963, and periodically amended since then, established National Ambient Air Quality Standards (NAAQS). A set of 1977 amendments determined a deadline for the attainment of these standards. That deadline has since passed. Other CAA amendments, passed in 1990, share responsibility with the State in reducing emissions from mobile sources.

In 1988, the State of California passed the California Clean Air Act [(CCAA), State 1988 Statutes, Chapter 1568], which set forth a program for achieving more stringent California Ambient Air Quality Standards. The California Air Resources Board (ARB) implements State ambient air quality standards, as required in the CCAA, and cooperates with the federal government in implementing pertinent sections of the CAA Amendments (FCAAA). Further, CARB regulates vehicular emissions throughout the State. The Air District regulates stationary sources, as well as some mobile sources. Attainment of the more stringent State $PM_{10}$ Air Quality Standards is not currently required.

The United States Environmental Protection Agency (EPA) uses six "criteria pollutants" as indicators of air quality, and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS).

The Air District operates regional air quality monitoring networks that provide information on average concentrations of pollutants for which State or federal agencies have established ambient air quality standards. Descriptions of the six pollutants of importance in Madera County follow.

- Ozone (1-hour and 8-hour)

  The most severe air quality problem in the Air Basin is the high level of ozone. Ozone occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. Here, ground level, or "bad" ozone, is an air pollutant that damages human health, vegetation, and many common materials. It is a key ingredient of urban smog. The troposphere extends to a level about 10 miles up, where it meets the second layer, the stratosphere. The stratospheric, or "good" ozone layer, extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays.

  "Bad" ozone is what is known as a photochemical pollutant. It needs reactive organic gases (ROG), $NO_x$, and sunlight. ROG and $NO_x$ are emitted from various sources throughout Madera County. In order to reduce ozone concentrations, it is necessary to control the emissions of these ozone precursors.

  Significant ozone formation generally requires an adequate amount of precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. High ozone concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

  Ozone is a regional air pollutant. It is generated over a large area and is transported and spread by wind. Ozone, the primary constituent of smog, is the most complex, difficult to control, and pervasive of the criteria pollutants. Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Ozone is created by sunlight acting on other air pollutants (called precursors), specifically $NO_x$ and ROG. Sources of precursor gases to the photochemical reaction that form ozone number in the thousands. Common sources include consumer products, gasoline vapors, chemical solvents, and combustion products of various fuels. Originating from gas stations, motor vehicles, large industrial facilities, and small businesses such as bakeries and dry cleaners, the ozone-forming chemical reactions often take place in another location, catalyzed by sunlight and heat. High ozone concentrations can form over large regions when emissions from motor vehicles

and stationary sources are carried hundreds of miles from their origins. Approximately 50 million people lived in counties with air quality levels above the EPA's health-based national air quality standard in 1994. The highest levels of ozone were recorded in Los Angeles, closely followed by the San Joaquin Valley. High levels also persist in other heavily populated areas, including the Texas Gulf Coast and much of the Northeast.

While the ozone in the upper atmosphere absorbs harmful ultraviolet light, ground-level ozone is damaging to the tissues of plants, animals, and humans, as well as to a wide variety of inanimate materials such as plastics, metals, fabrics, rubber, and paints. Societal costs from ozone damage include increased medical costs, the loss of human and animal life, accelerated replacement of industrial equipment, and reduced crop yields.

*Health Effects*

While ozone in the upper atmosphere protects the earth from harmful ultraviolet radiation, high concentrations of ground-level ozone can adversely affect the human respiratory system. Many respiratory ailments, as well as cardiovascular disease, are aggravated by exposure to high ozone levels. Ozone also damages natural ecosystems, such as: forests and foothill communities; agricultural crops; and some man-made materials, such as rubber, paint, and plastic. High levels of ozone may negatively affect immune systems, making people more susceptible to respiratory illnesses, including bronchitis and pneumonia. Ozone accelerates aging and exacerbates pre-existing asthma and bronchitis and, in cases with high concentrations, can lead to the development of asthma in active children. Active people, both children and adults, appear to be more at risk from ozone exposure than those with a low level of activity. Additionally, the elderly and those with respiratory disease are also considered sensitive populations for ozone.

People who work or play outdoors are at a greater risk for harmful health effects from ozone. Children and adolescents are also at greater risk because they are more likely than adults to spend time engaged in vigorous activities. Research indicates that children under 12 years of age spend nearly twice as much time outdoors daily than adults. Teenagers spend at least twice as much time as adults in active sports and outdoor activities. In addition, children inhale more air per pound of body weight than adults, and they breathe more rapidly than adults. Children are less likely than adults to notice their own symptoms and avoid harmful exposures.

Ozone is a powerful oxidant—it can be compared to household bleach, which can kill living cells (such as germs or human skin cells) upon contact. Ozone can damage the respiratory tract, causing inflammation and irritation, and it can induce symptoms such as coughing, chest tightness, shortness of breath, and worsening of asthmatic symptoms. Ozone in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. Exposure to levels of ozone above the current ambient air quality standard leads to lung inflammation and lung tissue damage and a reduction in the amount of air inhaled into the lungs.

The standards for Ozone are not being met in the SJVAB for federal and state standards.

- Suspended PM ($PM_{10}$ and $PM_{2.5}$)

Particulate matter pollution consists of very small liquid and solid particles that remain suspended in the air for long periods. Some particles are large or concentrated enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Particulate matter is a mixture of materials that can include smoke, soot, dust, salt, acids, and metals. Particulate matter is emitted from stationary and mobile sources, including diesel trucks and other motor vehicles; power plants; industrial processes; wood-burning stoves and fireplaces; wildfires; dust from roads, construction, landfills, and agriculture; and fugitive windblown dust. $PM_{10}$ refers to particles less than or equal to 10 microns in aerodynamic diameter. $PM_{2.5}$ refers to particles

less than or equal to 2.5 microns in aerodynamic diameter and are a subset of $PM_{10}$. Particulates of concern are those that are 10 microns or less in diameter. These are small enough to be inhaled, pass through the respiratory system and lodge in the lungs, possibly leading to adverse health effects.

In the western United States, there are sources of $PM_{10}$ in both urban and rural areas. Because particles originate from a variety of sources, their chemical and physical compositions vary widely. The composition of $PM_{10}$ and $PM_{2.5}$ can also vary greatly with time, location, the sources of the material and meteorological conditions. Dust, sand, salt spray, metallic and mineral particles, pollen, smoke, mist, and acid fumes are the main components of $PM_{10}$ and $PM_{2.5}$. In addition to those listed previously, secondary particles can also be formed as precipitates from chemical and photochemical reactions of gaseous sulfur dioxide ($SO_2$) and $NO_x$ in the atmosphere to create sulfates ($SO_4$) and nitrates $NO_3$. Secondary particles are of greatest concern during the winter months where low inversion layers tend to trap the precursors of secondary particulates.

The CARB 2008 PM2.5 Plan builds upon the aggressive emission reduction strategy adopted in the 2007 Ozone Plan and strives to bring the valley into attainment status for the 1997 NAAQS for $PM_{2.5}$. The 2008 $PM_{2.5}$ Plan indicates that all planned reductions (from the 2007 Ozone Plan and state controls) plus significant reductions from new measures will be needed to attain the annual standard.

The following new controls considered in the 2008 $PM_{2.5}$ Plan include

- Tighter restrictions on residential wood burning and space heating
- More stringent limits on $PM_{2.5}$, $SO_2$, and $NO_x$ emissions from industrial sources
- Measures to reduce emissions from prescribed burning and agricultural burning
- More effective work practices to control $PM_{2.5}$ in fugitive dust

The control strategy in this plan would also bring the valley closer to attainment status for the 2006 daily $PM_{2.5}$ standard. The district presented the draft 2008 $PM_{2.5}$ Plan to the District Governing Board on April 17, 2008, following a 30-day public comment period. This plan was delivered to the EPA in April 2008.

*Health Effects*

$PM_{10}$ and $PM_{2.5}$ particles are small enough—about one-seventh the thickness of a human hair, or smaller—to be inhaled and lodged in the deepest parts of the lung where they evade the respiratory system's natural defenses. Health problems begin as the body reacts to these foreign particles. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis, and respiratory illnesses in children. Recent mortality studies have shown a statistically significant direct association between mortality and daily concentrations of particulate matter in the air. Non-health-related effects include reduced visibility and soiling of buildings. $PM_{10}$ can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. $PM_{10}$ and $PM_{2.5}$ can aggravate respiratory disease and cause lung damage, cancer, and premature death.

Although particulate matter can cause health problems for everyone, certain people are especially vulnerable to adverse health effects of $PM_{10}$. These "sensitive populations" include children, the elderly, exercising adults, and those suffering from chronic lung disease such as asthma or bronchitis. Of greatest concern are recent studies that link $PM_{10}$ exposure to the premature death of people who already have heart and lung disease, especially the elderly. Acidic $PM_{10}$ can also damage manmade materials and is a major cause of reduced visibility in many

parts of the United States.
The standards for $PM_{10}$ are being met in the SJVAB for federal standards but are not being met for state standards. The standards for $PM_{2.5}$ are not being met in the SJVAB for federal and state standards.

- Carbon Monoxide (CO)

Carbon monoxide (CO) is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. CO is an odorless, colorless, poisonous gas that is highly reactive. CO is a byproduct of motor vehicle exhaust, contributes more than two thirds of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. These emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO.

*Health Effects*

CO enters the bloodstream and binds more readily to hemoglobin than oxygen, reducing the oxygen-carrying capacity of blood and thus reducing oxygen delivery to organs and tissues. The health threat from CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected but only at higher levels of exposure. At high concentrations, CO can cause heart difficulties in people with chronic diseases and can impair mental abilities. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, poor learning ability, difficulty performing complex tasks, and in prolonged, enclosed exposure, death.

The adverse health effects associated with exposure to ambient and indoor concentrations of CO are related to the concentration of carboxyhemoglobin (COHb) in the blood. Health effects observed may include an early onset of cardiovascular disease; behavioral impairment; decreased exercise performance of young, healthy men; reduced birth weight; sudden infant death syndrome (SIDS); and increased daily mortality rate.

Most of the studies evaluating adverse health effects of CO on the central nervous system examine high-level poisoning. Such poisoning results in symptoms ranging from common flu and cold symptoms (shortness of breath on mild exertion, mild headaches, and nausea) to unconsciousness and death.

The standards for Carbon Monoxide are being met in the SJVAB for federal standards.

- Nitrogen Dioxide ($NO_2$)

Nitrogen oxides ($NO_x$) is a family of highly reactive gases that are primary precursors to the formation of ground-level ozone and react in the atmosphere to form acid rain. $NO_x$ is emitted from combustion processes in which fuel is burned at high temperatures, principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. A brownish gas, $NO_x$ is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates.

*Health Effects*

$NO_x$ is an ozone precursor that combines with Reactive Organic Gases (ROG) to form ozone. See the ozone section above for a discussion of the health effects of ozone.

Direct inhalation of $NO_x$ can also cause a wide range of health effects. $NO_x$ can irritate the lungs, cause lung damage, and lower resistance to respiratory infections such as influenza. Short-term exposures (e.g., less than 3 hours) to low levels of nitrogen dioxide ($NO_2$) may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. These exposures may also increase respiratory illnesses in children. Long-term exposures to $NO_2$ may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. Other health effects associated with $NO_x$ are an increase in the incidence of chronic bronchitis and lung irritation. Chronic exposure to $NO_2$ may lead to eye and mucus membrane aggravation, along with pulmonary dysfunction. $NO_x$ can cause fading of textile dyes and additives, deterioration of cotton and nylon, and corrosion of metals due to production of particulate nitrates. Airborne $NO_x$ can also impair visibility. $NO_x$ is a major component of acid deposition in California. $NO_x$ may affect both terrestrial and aquatic ecosystems. $NO_x$ in the air is a potentially significant contributor to a number of environmental effects such as acid rain and eutrophication in coastal waters. Eutrophication occurs when a body of water suffers an increase in nutrients that reduce the amount of oxygen in the water, producing an environment that is destructive to fish and other animal life.

$NO_2$ is toxic to various animals as well as to humans. Its toxicity relates to its ability to combine with water to form nitric acid in the eye, lung, mucus membranes, and skin. Studies of the health impacts of $NO_2$ include experimental studies on animals, controlled laboratory studies on humans, and observational studies.

In animals, long-term exposure to $NO_x$ increases susceptibility to respiratory infections, lowering their resistance to such diseases as pneumonia and influenza. Laboratory studies show susceptible humans, such as asthmatics, exposed to high concentrations of $NO_2$, can suffer lung irritation and, potentially, lung damage. Epidemiological studies have also shown associations between $NO_2$ concentrations and daily mortality from respiratory and cardiovascular causes as well as hospital admissions for respiratory conditions.

$NO_x$ contributes to a wide range of environmental effects both directly and when combined with other precursors in acid rain and ozone. Increased nitrogen inputs to terrestrial and wetland systems can lead to changes in plant species composition and diversity. Similarly, direct nitrogen inputs to aquatic ecosystems such as those found in estuarine and coastal waters can lead to eutrophication as discussed above. Nitrogen, alone or in acid rain, also can acidify soils and surface waters. Acidification of soils causes the loss of essential plant nutrients and increased levels of soluble aluminum, which is toxic to plants. Acidification of surface waters creates conditions of low pH and levels of aluminum that are toxic to fish and other aquatic organisms.

The standards for Nitrogen Dioxide are being met in the SJVAB for federal and state standards.

- Sulfur Dioxide ($SO_2$)

The major source of sulfur dioxide ($SO_2$) is the combustion of high-sulfur fuels for electricity generation, petroleum refining and shipping. High concentrations of $SO_2$ can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated $SO_2$ levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of $SO_2$, in conjunction with high levels of PM, include

aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. $SO_2$ also is a major precursor to $PM_{2.5}$, which is a significant health concern and a main contributor to poor visibility. In humid atmospheres, sulfur oxides can react with vapor to produce sulfuric acid, a component of acid rain.

The standards for $SO_2$ are being met in the SJVAB.

- Lead (Pb)

Lead, a naturally occurring metal, can be a constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. Lead was used until recently to increase the octane rating in automobile fuel. Since the 1980s, lead has been phased out in gasoline, reduced in drinking water, reduced in industrial air pollution, and banned or limited in consumer products. Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels; however, the use of leaded fuel has been mostly phased out. Since this has occurred the ambient concentrations of lead have dropped dramatically.

Exposure to lead occurs mainly through inhalation of air and ingestion of lead in food, water, soil, or dust. It accumulates in the blood, bones, and soft tissues and can adversely affect the kidneys, liver, nervous system, and other organs. Excessive exposure to lead may cause neurological impairments such as seizures, mental retardation, and behavioral disorders. Even at low doses, lead exposure is associated with damage to the nervous systems of fetuses and young children. Effects on the nervous systems of children are one of the primary health risk concerns from lead. In high concentrations, children can even suffer irreversible brain damage and death. Children 6 years old and under are most at risk, because their bodies are growing quickly.

The standards for Lead are being met in the SJVAB for state standards.

Toxic Air Contaminants (TACs)

In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated despite the absence of criteria documents. The identification, regulation and monitoring of TACs is relatively recent compared to that for criteria pollutants. Unlike criteria pollutants, TACs are regulated on the basis of risk rather than specification of safe levels of contamination.

Existing air quality concerns within Madera County and the entire SJVAB are related to increases of regional criteria air pollutants (e.g., ozone and particulate matter), exposure to toxic air contaminants, odors, and increases in greenhouse gas emissions contributing to climate change. The primary source of ozone (smog) pollution is motor vehicles. Particulate matter is caused by dust, primarily dust generated from construction and grading activities, and smoke which is emitted from fireplaces, wood-burning stoves, and agricultural burning.

- Odors

Typically odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities

of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another.

It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.
Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air.

When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

- Sensitive Receptors

A sensitive receptor is a location where human populations, especially children, seniors, and sick persons, are present and where there is a reasonable expectation of continuous human exposure to pollutants. Examples of sensitive receptors include residences, hospitals and schools.

## Existing TCMs and Air Quality Mitigation

Until the passage of the CCAA, the primary role of air districts in California was the control of stationary sources of pollution such as industrial processes and equipment. With the passage of the FCAA and CCAA, air districts were required to implement transportation control measures (TCMs) and were encouraged to adopt indirect source control programs to reduce mobile source emissions. These mandates created the necessity for the District to work closely with cities and counties and with regional transportation planning agencies (RTPAs) to develop new programs.

A description of the various TCMs that have been incorporated into the Air District AQAP, Rate of Progress (ROP) Plans, and the SJVAPCD TCM Program, or have been identified as necessary to provide for positive air quality conformity findings, is included in the latest Air Quality Conformity Finding for the 2011 RTP and Federal Transportation Improvement Program (FTIP), dated October 2009. The Conformity Finding includes a complete description of each TCM contained in the current SIP, the SJVAPCD AQAP, the TCM Program, and in the ROP Plans.

Madera County and its two incorporated cities, private business, and government offices implement some of these programs including traffic flow improvements, public transit, park and ride lots, bicycling programs, and alternate work schedules. Central Valley Ridesharing provides rideshare programs in Madera County and is administered by Fresno COG. It also provides ride matching within the four counties of Fresno, Kings, Madera, and Tulare. [1]

A complete description of the current air quality requirements is provided in the 2011 RTP and the latest Air Quality Conformity Findings are included on the MCTC website at www.maderactc.org.

[1] MCTC – 2011 Regional Transportation Plan (RTP)

## Air Quality Management

Until the passage of the CCAA, the primary role of air districts in California was the control of stationary sources of pollution such as industrial processes and equipment. With the passage of the FCAA and CCAA, air districts were required to implement transportation control measures (TCMs) and were encouraged to adopt indirect source control programs to reduce mobile source emissions. These mandates created the necessity for the Air District to work closely with cities and counties and with regional transportation planning agencies (RTPAs) to develop new programs.

A description of various TCMs incorporated into the Air District Air Quality Attainment Plan (AQAP), Rate of Progress (ROP) Plans, and the SJVAPCD TCM Program, together with TCMs that have been identified as necessary to provide for positive air quality conformity findings is included in 2011 RTP Air Quality Conformity Determination. The Conformity Determination includes a complete description of each TCM contained in the current SIP, the SJVAPCD AQAP, the TCM Program, and in the ROP Plans.

Responsibility for managing air quality in California is becoming increasingly regionalized. Air districts have the primary responsibility to control air pollution from all sources other than emissions directly from motor vehicles, which are the responsibility of EPA and CARB. Air districts regulate air quality through their permit authority for most types of stationary emission sources and through their planning and review activities for other sources. Further, air districts adopt and enforce rules and regulations to achieve State and federal ambient air quality standards and enforce applicable State and federal law. The CCAA requires each nonattainment district to reduce pertinent air contaminants by at least five percent per year until State Quality Standards are met.

## Air Pollution Sources

The four major sources of air pollutant emissions in the SJVAB include industrial plants, motor vehicles, construction activities, and agricultural activities. Industrial plants account for significant portions of regional gaseous and particulate emissions. Motor vehicles, including those from large employers, generate substantial regional gaseous and particulate emissions. Finally, construction and agricultural activities can generate significant temporary gaseous and particulate emissions (dust, ash, smoke, etc.). In addition to these primary sources of air pollution, urban areas upwind from Madera County, including areas north and west of the San Joaquin Valley, can cause or generate emissions that are transported into Madera County. All four of the major pollutant sources affect ambient air quality throughout the Air Basin.

- Motor Vehicles

  Automobiles, trucks, buses and other vehicles using hydrocarbon fuels release exhaust products into the air. Each vehicle by itself does not release large quantities; however, when considered as a group, the cumulative effect is significant.

- Agricultural and Other Miscellaneous Activities

  Other sources may not seem to fit into any one of the major categories or they may seem to fit in a number of them. These could include agricultural uses, dirt roads, animal shelters, animal feed lots, chemical plants and industrial waste disposal, which may be a source of dust, odors, or other pollutants. For Madera County, this category includes several agriculturally related activities, such as plowing, harvesting, dusting with herbicides and pesticides and other related activities.

- Industrial Plants

  Industrial contaminants and their potential to produce various effects depend on the size and type of industry, pollution controls, local topography, and meteorological conditions. Major sources of industrial emissions in Madera County consist of agricultural production and processing operations, wine production, and marketing operations.

## Environmental Impacts, Mitigation Measures, and Significance After Mitigation

### Methodology

The impact assessment for air quality focuses on potential effects the Project might have on air quality within the Madera region. The assessment is not site or project-specific but is a regional analysis.

### Criteria for Significance

The CEQA Guidelines establish that a significant impact would be expected to occur if the project would:

- Conflict with or obstruct with implementation of an applicable air quality plan
- Violate any air quality standard or contribute to an existing or projected air quality violation
- Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard
- Expose sensitive receptors to substantial pollutant concentrations
- Create objectionable odors affecting a substantial number of people

Development of the Project would generate air pollutant emissions from a wide variety of stationary and mobile sources. Stationary source emissions, such as Particulate Matter, would be generated by transportation facility construction activities. Mobile source emissions would be generated by motor vehicle travel associated with construction activities and use of the proposed individual improvement projects. This section of the Air Quality Assessment addresses and analyzes the regional or area-wide and the localized air quality impacts associated with the Project. A discussion of significance criteria and an assessment of construction emissions are presented below based on the methodologies recommended in the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts*.

### Short-Term Construction Impacts

#### Impact 3.3.1

#### Project Construction Impacts on Air Quality

Construction activities could increase short-term air emissions. This could be considered a less than significant impact.

Short-term impacts could result from the following construction-related sources:

- Construction equipment emissions
- Dust from grading and earthmoving operations
- Emissions from workers' vehicles traveling to and from construction sites

As individual transportation improvements are constructed, the activity at individual construction sites will involve grading and other earth-moving operations and the use of diesel and gasoline-powered construction equipment. These could generate exhaust emissions of carbon monoxide and nitrogen dioxide at the individual construction sites. Where asphalt is used, volatile organic compounds (VOC) could be released from asphalt when it is applied to the roadways' surfaces. If an individual construction site is located near existing homes or other sensitive receptors, such emissions could have the potential to result in significant short-term impacts at that particular location.
The Air District has developed thresholds of significance for individual construction projects. Project-level analysis conducted for CEQA purposes should estimate construction emissions for each individual improvement project based on the equipment used, vehicle miles traveled, and time allowed to complete the individual improvement project. Mitigation measures to reduce air quality impacts should be established in project-specific environmental documents. Some of the larger projects could have the potential to exceed the significance thresholds established by the District, creating significant short-term impacts. These impacts could occur in localized areas depending on the construction site locations, and could impact land uses, facilities and activities that may be occurring on these properties within vicinity of the projects requiring mitigation

Since the Project proposes more highway and arterial projects than the No Project Alternative, short-term construction emissions could be greater. However, construction-related impacts are expected to be temporary in nature and can generally be reduced to a less than significant level through the use of mitigation measures and through compliance with applicable existing city, county, state, and District regulations for reducing construction-related emissions. Therefore, the increase in construction activities proposed by the Project is expected to constitute a less than significant impact on a programmatic level. Nonetheless, individual projects may exceed the emissions thresholds, which could constitute project-level significant impacts. Individual projects shall be required to implement mitigation measures to reduce construction emissions as determined by the applicable analysis of such air quality project construction impacts.

Mitigation Measures

All mitigation measures shall be included in project-level analysis, as appropriate. The individual improvement project proponent or local jurisdiction shall be responsible for completing an air quality analysis and study to determine the project-specific air quality construction impacts and identify and provide the mitigation measures that shall reduce the impacts to a level of less than significant in accordance with the applicable air quality standards. Such air quality analysis and study shall identify the impacts on land uses, facilities and activities of properties within the vicinity of the project and shall identify and provide the mitigation measures that shall reduce the impacts to a level of less than significant in accordance with the applicable air quality standards. The individual improvement project proponent or local jurisdiction shall be responsible for ensuring adherence to the mitigation measures prior to and during the construction of the project. MCTC will be provided with documentation indicating compliance with all project-specific mitigation measures.

- Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies, and all agencies, districts, and entities that are responsible and oversee sensitive receptors to identify

and determine the plans, policies, requirements, rules and regulations that may be applicable to the construction of the project and the mitigation of impacts associated with air quality.

- Prior to commencing and during the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county policies, requirements, rules and regulations, and all plans, policies, requirements, rules and requirements of the agencies, districts, and entities that are responsible and oversee sensitive receptors with regards to air quality.

- Project implementation agencies shall ensure implementation of mitigation measures to reduce $PM_{10}$ and NOx emissions from construction sites, including:

  - Maintain on-site truck loading zones
  - Configure on-site construction parking to minimize traffic interference and to ensure emergency vehicle access
  - Provide temporary traffic control during all phases of construction activities to improve traffic flow
  - Use best efforts to minimize truck idling to not more than two minutes during construction
  - Apply non-toxic soil stabilizers (according to manufacturers' specifications) to all inactive construction areas.
  - During construction, replace ground cover in disturbed areas as quickly as possible
  - During construction, enclose, cover, water twice daily or apply non-toxic soil binders (according to manufacturers' specifications) to exposed piles with 5 percent or greater silt content and to all unpaved parking or staging areas or unpaved road surfaces
  - During the period of construction, install wheel washers where vehicles enter and exit unpaved roads onto paved roads, or wash off trucks and any equipment leaving the site each trip
  - During the period of construction, assure that traffic speeds on all unpaved roads be reduced to 15 mph or less
  - Pave all construction access roads at least 100 feet on to the site from permanent roadways
  - Cover all haul trucks

- The individual improvement project proponent or local jurisdiction shall address Regulation VIII under the San Joaquin Valley Air District for all construction sites and will constitute sufficient mitigation to reduce PM10 impacts to a level considered less-than significant.

Significance After Mitigation

Less than significant.

Impact 3.3.2

Point Source Impacts

Traffic conditions at some individual locations may lead to occasional localized carbon monoxide concentrations.

The proposed Project will improve traffic flows and reduce congestion system-wide, reducing the potential for carbon monoxide "hot spots" that can occur from exhaust of idling cars waiting to clear a heavily congested intersection or crossing. The Project is intended to reduce congested conditions throughout the system that is faced with a challenge to accommodate additional traffic generated by an increase in population projected by the Year 2035.

While the proposed improvements will respond to this challenge by accommodating additional traffic and reducing congestion (brought by that additional traffic) system-wide, exhaust emissions from cars at localized areas may, at certain times, create a potential for carbon monoxide concentrations, or hot spots, to develop under adverse atmospheric conditions that prevent a rapid dispersion of carbon monoxide. Currently, the Air Basin is in attainment of federal and State standards for carbon monoxide, and the carbon monoxide emissions are not a serious problem in the Basin. Nonetheless, because there is a potential for exhaust emissions from cars at localized areas to create an occasional hot spot, the following mitigation measure is proposed.

Mitigation Measures

- Prior to commencing the construction activities on individual projects, the individual improvement project proponent or local jurisdiction shall communicate with applicable federal, state and applicable city and county agencies, and all agencies, districts, and entities that are responsible and oversee sensitive receptors to identify and determine the plans, policies, requirements, rules and regulations that may be applicable to the on-going use and operation of the project and the mitigation of impacts.

- Prior to commencing on individual projects, the individual improvement project proponent or local jurisdiction shall comply with all applicable federal, state and applicable city and county policies, requirements, rules and regulations; and all plans, policies, requirements, rules and requirements of the agencies, districts, and entities that are responsible and oversee sensitive receptors, and all mitigation measures with regards to addressing air quality impacts.

- At those projects, facilities, and intersection locations near sensitive receptors where carbon monoxide concentrations may exceed federal and State standards based upon individual air quality impact assessments for individual projects, the individual improvement project proponent or local jurisdiction shall reduce or alleviate these concentrations by improving traffic flows through improved signalization, restriping, addition of traffic lanes, and other improvements identified as part of the environmental review of the project and the applicable mitigation measures.

Significance After Mitigation

The Project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion, which will reduce the potential for forming carbon monoxide hot spots. At some locations where instances of congested conditions may occur near sensitive receptors, implementation of identified mitigation measures is anticipated to ensure improved traffic flows such that the potential for creating a hot spot will be reduced to a less than significant level.

Impact 3.3.3

Long-Term - Conflict with, or Obstruct, the Applicable Air Quality Plan, Cause a Violation of Air Quality Standards, Contribute Substantially to an Existing Air Quality Violation, or Result in a Cumulatively Considerable Net Increase of a Criteria Pollutant in a Non-Attainment Area.

The following analysis is a summary of the Conformity Analysis for the 2011 Federal Transportation Improvement Program (FTIP) and the 2011 Regional Transportation Plan (RTP). The complete Air Quality Conformity Analysis is available on MCTC's website at:

http://maderactc.org/pdf_files/RTP/Draft%20MCTC%202011%20Conformity%20Analysis.pdf

- Federal Air Quality Standards

  The Clean Air Act Section 176(c) (42 U.S.C. 7506(c)) and U.S. Environmental Protection Agency (EPA) transportation conformity regulations (40 CFR 93 Subpart A) require that each new RTP and TIP be demonstrated to conform to the State Implementation Plan (SIP) before the RTP and TIP are approved by the MPO or accepted by the U.S. Department of Transportation (DOT). The conformity analysis is a federal requirement designed to demonstrate compliance with the national ambient air quality standards. However, because the San Joaquin Valley State Implementation Plan (SIP) for CO, $PM_{10}$, $PM_{2.5}$ and Ozone address attainment of both the state and federal standards, for these pollutants, demonstrating conformity to the federal standards is also an indication of progress toward attainment of the state standards. Compliance with the state air quality standards is provided on the pages following this federal conformity discussion.

- Conformity Requirements

  The Federal transportation conformity regulations (40 Code of Federal Regulations Parts 51 and 93) specify criteria and procedures for conformity determinations for transportation plans, programs, and projects and their respective amendments. The Federal transportation conformity regulation was first promulgated in 1993 by the U.S. EPA, following the passage of amendments to the Federal Clean Air Act in 1990. The Federal transportation conformity regulation has been revised several times since its initial release to reflect both EPA rule changes and court opinions.

  The conformity regulation applies nationwide to "all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan" (40 CFR 93.102). Currently, the San Joaquin Valley (or portions thereof) is designated as nonattainment with respect to Federal air quality standards for ozone, and particulate matter under 2.5 microns in diameter ($PM_{2.5}$); and has a maintenance plan for particulate matter under 10 microns in diameter ($PM_{10}$), as well as a maintenance plan for carbon monoxide (CO) for the urbanized/metropolitan areas of Kern, Fresno, Stanislaus and San Joaquin Counties. Therefore, transportation plans and programs for the nonattainment areas for the Madera County area must satisfy the requirements of the Federal transportation conformity regulation.

Under the transportation conformity regulation, the principal criteria for a determination of conformity for transportation plans and programs are:

- The TIP and RTP must pass an emissions budget test using a budget that has been found to be adequate by EPA for transportation conformity purposes, or an interim emission test;
- The latest planning assumptions and emission models specified for use in conformity determinations must be employed;
- The TIP and RTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans; and
- Interagency and public consultation.

On-going interagency consultation is conducted through the San Joaquin Valley Interagency Consultation Group to ensure Valley-wide coordination, communication and compliance with Federal and California Clean Air Act requirements. Each of the eight Valley MPOs and the San Joaquin Valley Unified Air Pollution Control District (Air District) are represented. The Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the U.S. EPA, the California Air Resources Board (CARB) and Caltrans are also represented on the committee. The final determination of conformity for the TIP and RTP is the responsibility of FHWA, and FTA within the U.S. DOT.

- Madera County Conformity Tests

The conformity tests specified in the Federal transportation conformity regulations are: (1) the emissions budget test, and (2) the interim emission test. For the emissions budget test, predicted emissions for the TIP/RTP must be less than or equal to the motor vehicle emissions budget specified in the approved air quality implementation plan or the emissions budget found to be adequate for transportation conformity purposes. If there is no approved air quality plan for a pollutant for which the region is in nonattainment or no emission budget has been found to be adequate for transportation conformity purposes, the interim emission test applies. The Air Quality Conformity summarizes the applicable air quality implementation plans and conformity tests for ozone, $PM_{10}$, and $PM_{2.5}$.

Each of the SJVAPCD plans (2007 Ozone Plan, 2008 PM2.5 Plan, and 2007 $PM_{10}$ Maintenance Plan, which relies on the 2003 $PM_{10}$ Plan for emissions reductions measures) identifies a "budget" for measuring progress toward achieving attainment of the national air quality standard. A "budget" is, in effect, an emissions "threshold" or "not to exceed value" for specific years in which progress toward attainment of the standard must be measured. These specific years can also be described as “budget years" and are established to ensure achievement of the "budget" to demonstrate continued progress toward attainment of the national air quality standard. The term "base year" also reflects a "threshold" or "not to exceed" value against which future emissions from the 2011 RTP are measured.

The conformity regulation (Section 93.118[b] and [d]) requires documentation of the "budget years" for which consistency with motor vehicle emission "budgets" must be shown. In addition, any interpolation performed to meet tests for "budget years" in which specific analysis is not required need to be documented. For the selection of the analysis years, the conformity regulation requires: (1) that if the attainment year is in the time span of the transportation plan, it must be modeled; (2) the last year forecast in the transportation plan must be an analysis year; and (3) analysis years may not be more than ten years apart. In addition, the conformity regulation requires that conformity must be demonstrated for each "budget year." It is important to note, that although the conformity regulation requires modeling of several analysis years in addition to the “budget years," those additional analysis years must demonstrate that emissions in those years are less than the applicable motor

vehicle emissions "budget." For example the 2011 this analysis models Ozone motor vehicle emissions from the 2011 RTP in the years 2011, 2014, 2017, 2023, 2025, and 2035. As Table 3-11 below shows, 2011, 2014, and 2017 are “budget years" and 2023 is the year of attainment. As described above, Ozone emissions for the 2025 and 2035 analysis years must be less than or equal to the 2017 "budget" to demonstrate compliance with the SJVAPCD 2008 Ozone Plan.

Section 93.118(b)(2) clarifies that when a maintenance plan has been submitted, conformity must be demonstrated for the last year of the maintenance plan and any other years for which the maintenance plan establishes budgets in the time frame of the transportation plan. Section 93.118(d)(2) indicates that a regional emissions analysis may be performed for any years, the attainment year, and the last year of the plan’s forecast. Other years may be determined by interpolating between the years for which the regional emissions analysis is performed.

## TABLE 3-11
## Emission Budget Years By Pollutant

| Pollutant | Budget Years[1] | Attainment/ Maintenance Year | Intermediate Years | RTP Horizon Year |
|---|---|---|---|---|
| Ozone | 2011/2014/2017 | 2023[2] | 2025 | 2035 |
| PM-10 | NA | 2020 | 2025 | 2035 |
| PM2.5 | 2012 | 2014 | 2017/2025 | 2035 |

[1] Budget years that are not in the time frame of the transportation plan are not included as analysis years (e.g., CO 2003 and 2010, Ozone 2008, PM-10 2005, PM2.5 2009), although they may be used to demonstrate conformity.
[2] The attainment year for Serious 8-hour Ozone areas is 2013; however, the 2007 Ozone Plan requests reclassification to Extreme which has an attainment year of 2023.
Source: San Joaquin Valley Air Pollution Control District, 2007

Section 93.118(d)(2) indicates that the regional emissions analysis may be performed for any years in the time frame of the transportation plan provided they are not more than ten years apart and provided the analysis is performed for the attainment year (if it is in the time frame of the transportation plan) and the last year of the plan’s forecast period. Emissions in years for which consistency with motor vehicle emissions budgets must be demonstrated, as required in paragraph (b) of this section (i.e., each budget year), may be determined by interpolating between the years for which the regional emissions analysis is performed.

For $PM_{2.5}$, the attainment year is 2014 for both the 1997 and 2006 Standards. On March 8, 2005, EPA issued Guidance for Determining the “Attainment Year” for Transportation Conformity in new 8-hour ozone and $PM_{2.5}$ nonattainment areas (EPA, 2005b). Per FCAA section 172(a)(2), all $PM_{2.5}$ nonattainment areas will have an initial maximum statutory attainment date of April 5, 2010. However, the submitted 2008 $PM_{2.5}$ Plan shows that the San Joaquin Valley $PM_{2.5}$ nonattainment area can attain the annual $PM_{2.5}$ NAAQS in 2014. In addition, the attainment year for the 2006 $PM_{2.5}$ areas will be 2014.

- Ozone Precursors

  The regional emissions analysis and forecasts for ozone precursors (ROG and $NO_X$) are summarized in Table 3-12. The summary of emissions forecasts is derived from outputs of the EMFAC 2007 Version 2.3 model[2] performed by MCTC staff during the preparation of the Air Quality Conformity. As indicated above, the words "budget" refers to the emissions "threshold" or "not to exceed value" for “budget years" in order demonstrate continued progress toward attainment of the state air quality standard.

- Particulate Matter

  The regional emissions analysis and forecasts for particulate matter ($PM_{10}$ and $PM_{2.5}$) are summarized in Table 3-12. The summary of emissions forecasts is derived from outputs of the EMFAC 2007 Version 2.3 model performed by MCTC staff during the preparation of the Air Quality Conformity. As indicated above, the words "budget" refers to the emissions "threshold" or "not to exceed value" for “budget years" in order demonstrate continued progress toward attainment of the state air quality standard. The words" base year" in the tables below also reflects a "threshold" or "not to exceed" value against which future emissions from the 2011 RTP are measured.

- Results of the Conformity Analysis

A regional emissions analysis was conducted for the years 2011, 2012, 2014, 2017, 2018, 2020, 2023, 2025 and 2035 for each applicable pollutant. All analyses were conducted using the latest planning assumptions and emissions models. The major conclusions of the MCTC Conformity Analysis are:

- For ozone, the total regional on-road vehicle-related emissions (ROG and $NO_X$) associated with implementation of the 2011 FTIP and the 2011 RTP for all years tested are projected to be less than the adequate emissions budgets specified in the 2007 Ozone Plan. The conformity tests for ozone are therefore satisfied.

[2] Note that EMFAC 2007 does not include any reductions in criteria pollutants that may be achieved by implementation of the Pavley GHG Emissions Standards. Although the Pavley GHG emissions standards limit only GHGs, it is likely that concomitant reductions in GHGs will occur. However, because there are not regulatory reductions of other criteria pollutants mandated, the reductions cannot be quantitatively assessed.

# TABLE 3-12
## Conformity Results for RTP Projects
## 2011 Conformity Results Summary – Madera

| Pollutant | Scenario | Emissions Total | | | DID YOU PASS? | |
|---|---|---|---|---|---|---|
| | | ROG (tons/day) | NOx (tons/day) | | ROG | NOx |
| Ozone | 2011 Budget | 3.7 | 12.2 | | | |
| | 2011 | 3.7 | 12.2 | | YES | YES |
| | | | | | | |
| | 2014 Budget | 3.1 | 9.7 | | | |
| | 2014 | 3.0 | 9.6 | | YES | YES |
| | | | | | | |
| | 2017 Budget | 2.6 | 7.7 | | | |
| | 2017 | 2.5 | 7.2 | | YES | YES |
| | 2023 | 2.2 | 5.7 | | YES | YES |
| | 2025 | 2.1 | 5.5 | | YES | YES |
| | 2035 | 1.8 | 4.7 | | YES | YES |
| | | | | | | |
| | | | | | | |
| PM-10 | | PM-10 (tons/day) | NOx (tons/day) | | PM-10 | NOx |
| | 2020 Budget | 4.7 | 6.5 | | | |
| | 2020 | 4.6 | 6.5 | | YES | YES |
| | | | | | | |
| | Adjusted 2020 Budget | 5.1 | 5.9 | | | |
| | 2025 | 5.1 | 5.7 | | YES | YES |
| | | | | | | |
| | Adjusted 2020 Budget | 5.8 | 4.9 | | | |
| | 2035 | 5.8 | 4.8 | | YES | YES |
| | | | | | | |
| 1997 PM2.5 24-Hour & Annual Standards and 2006 24-Hour Standard | | PM2.5 (tons/day) | NOx (tons/day) | | PM2.5 | NOx |
| | 2012 Budget | 0.5 | 11.4 | | | |
| | 2012 | 0.5 | 11.4 | | YES | YES |
| | 2014 | 0.5 | 9.7 | | YES | YES |
| | 2017 | 0.4 | 7.3 | | YES | YES |
| | 2025 | 0.4 | 5.5 | | YES | YES |
| | 2035 | 0.4 | 4.6 | | YES | YES |

- For $PM_{10}$, the total regional vehicle-related emissions ($PM_{10}$ and $NO_X$) associated with implementation of the 2011 FTIP and the 2011 RTP for all years tested are either (1) projected to be less than the approved emissions budgets, or (2) less than the emission budgets using the approved $PM_{10}$ and $NO_X$ trading mechanism for transportation conformity purposes from the 2007 $PM_{10}$ Maintenance Plan. The conformity tests for $PM_{10}$ are therefore satisfied.

- For $PM_{2.5}$, the total regional on-road vehicle-related emissions associated with implementation of the 2011 FTIP and the 2011 RTP for the analysis years are projected to be less than the adequate emission budgets specified in the 2008 $PM_{2.5}$ Plan. The conformity tests for $PM_{2.5}$ for both the 1997 and 2006 standards are therefore satisfied.

Based on the conformity analysis, the 2011 FTIP and the 2011 RTP conform to the applicable State Implementation Plan (SIP) and all applicable sections of the EPA's Transportation Conformity Rule.

- State Air Quality Standards

The San Joaquin Valley Air Pollution Control District is one of 35 air quality management districts that have prepared air quality management plans to accomplish a five percent annual reduction in emissions documenting progress toward achievement of the state ambient air quality standards. The SJVAPCD air quality management plans document required emissions reductions from all emissions sources, mobile and stationary. For this analysis, only on-road mobile source emissions are considered, as the 2011 RTP does not impact the implementation of any SJVAPCD regulations or incentives on other emissions source categories. As such, this analysis will not show the entire five percent reductions required by each of the SJVAPCD plans (for each applicable pollutant), but, will show the on-road mobile source share of the five percent per year reductions resulting from each of the SJVAPCD Plans. Required reductions from all other emissions sources can be found in the applicable SJVAPCD Plan.

The 2011 RTP demonstrates compliance with the list of comprehensive regulatory and incentive based measures contained in each plan by demonstrating that motor vehicle emissions resulting from the 2011 RTP are less than specified motor vehicle emissions "budgets" contained in the applicable SJVAPCD plan (2007 Ozone Plan, 2008 $PM_{2.5}$ Plan, and 2007 PM10 Maintenance Plan, which relies on the 2003 PM10 Plan for emissions reductions measures). To document compliance with the state air quality standards, each of these SJVAPCD plans identifies specific years in which progress toward attainment of the standard must be measured. These years are described as "budget" years because each of these SJVAPCD plans identifies motor vehicle emission "budgets" in which 2011 RTP motor vehicle emissions cannot exceed in order to ensure continued progress toward attainment of the state standard. For on-road mobile sources, the SJVAPCD plans identify the same emissions reduction strategies for both state and federal standards.

The SJVAPCD 2007 $PM_{10}$ Maintenance Plan which relies on the 2003 $PM_{10}$ Plan for emissions reductions measures allows trading from the motor vehicle emissions "budget" for the $PM_{10}$ precursor NOx to the motor vehicle emissions budget for primary $PM_{10}$ using a 1.5 to 1 ratio. The trading mechanism allows the agencies responsible for demonstrating transportation conformity in the San Joaquin Valley to supplement the 2005 budget for $PM_{10}$ with a portion of the 2005 budget for NOx, and use these adjusted motor vehicle emissions budgets for $PM_{10}$ and NOx to demonstrate transportation conformity with the $PM_{10}$ Maintenance Plan for analysis years after 2005. The approved $PM_{10}$ trading mechanism recognizes NOx precursor emissions result in the formation of $PM_{10}$ emissions at a rate of 1 ton of $PM_{10}$ for every 1.5 tons of NOx.

The trading mechanism is approved for analysis years after 2005. To ensure that the trading mechanism does not impact the ability to meet the NOx "budget" contained in the PM10 Maintenance Plan, the NOx emission reductions available to supplement the PM-10 motor vehicle emissions "budget" shall only be those remaining after the NOx motor vehicle emissions "budget" has been met. For example in 2035, PM10 emissions equal 5.8 tons per day and NOx emissions equal 4.8 tons per day. Because 2035 NOx emissions are less than the 2020 NOx emissions "budget" (6.5 tons per day) from the SJVAPCD 2007 PM10 Maintenance Plan, emissions trading, as approved in the PM10 plan is allowable. Trading between the PM10 emissions budget and the NOx emissions budget occurs utilizing the difference between the applicable NOx budget, which in this case is the 2020 "budget", and the actual NOx emissions resulting from the 2011 RTP. In 2035, the difference between the 2020 NOx budget and the 2035 NOx emissions is 1.7 tons per day. The 2020 NOx budget is a "not to exceed" number from the SIP, while the 2035 value is an actual modeled estimate. Emission trading as approved in the PM10 Plan utilizes a 1.5 ton of NOx for every 1 ton of PM10 emissions remaining between the applicable NOx budget and the actual NOx emissions. Because the analysis demonstrates that PM10 precursor NOx emissions are significantly less than the emissions budgets, it is likely that PM10 emissions resulting from the presence of the PM 10 precursor NOx will not form in 2035. This results in the ability to "trade" approximately 1.7 tons of NOx (which again is reflective of the difference between the 2020 "budget" and the 2035 PM10 emissions resulting from the 2011 RTP) for 1.1 tons of PM10 in 2035 because the formation of PM10 emissions resulting from precursor NOx emissions has been decreased.

Documentation of this can be found in the 2011 Conformity Analysis for the 2011 RTP and the 2011 FTIP, which was released for public comment concurrent to the 2011 RTP and 2011 RTP EIR.

Similar to the analysis documenting compliance with federal standards, the term "budget" after scenario year represents a not to exceed value. The term base year after a scenario year in the tables below also reflects a not to exceed value against which future emissions from the 2011 RTP are measured.

For this analysis, only on-road mobile sources are considered as the 2011 RTP does not impact the implementation of any SJVAPCD regulations or incentives on other emissions source categories.

- Results of the Analysis

  As shown in Tables 3-13 through 3-15, the total emissions in each scenario year for each pollutant is less than the emissions "budget" as established in the applicable SJVAPCD Plan. As previously noted, the emissions "budget" for each criteria pollutant is a "threshold" or "not to exceed" value for emissions. These tables demonstrate that the 2011 RTP contributes to positive progress toward the attainment of state ambient air quality standards. These tables also demonstrate that the 2011 RTP is consistent with the SJVAPCD plans, including their regulations and incentives relative to motor vehicle emissions budgets.

## TABLE 3-13
## Ozone, ROG, and NOX Emissions Test (Summer Tons per Day)

| | Emissions (Tons/Day) | | %Below Budget | | % Reduction/Year | |
|---|---|---|---|---|---|---|
| | ROG | NOX | ROG | NOX | ROG | NOX |
| 2011 Budget | 3.7 | 12.2 | N/A | N/A | N/A | N/A |
| 2011 | 3.7 | 12.2 | 0.00% | 0.00% | - | - |
| 2014 Budget | 3.1 | 9.7 | N/A | N/A | N/A | N/A |
| 2014 | 3.0 | 9.6 | 2.58% | 1.34% | 6.13% | 7.19% |
| 2017 Budget | 2.6 | 7.7 | N/A | N/A | N/A | N/A |
| 2017 | 2.5 | 7.2 | 5.77% | 6.23% | 6.29% | 8.19% |
| 2023 | 2.2 | 5.7 | 16.92% | 25.45% | 1.97% | 3.42% |
| 2025 | 2.1 | 5.5 | 18.08% | 28.05% | 0.69% | 1.74% |
| 2035 | 1.8 | 4.7 | 30.77% | 39.35% | 1.55% | 1.57% |

Source: MCTC, 2010

## TABLE 3-14
## PM10 Emissions (Annual Tons per Day)

| | Emissions (Tons/Day) | | %Below Budget | | % Reduction/Year | |
|---|---|---|---|---|---|---|
| | PM-10 | NOX | PM-10 | NOX | PM-10 | NOX |
| 2020 Budget | 4.7 | 6.5 | N/A | N/A | N/A | N/A |
| 2020 | 4.6 | 6.5 | 2.1% | 0.0% | - | - |
| Adjusted 2020 Budget | 5.1 | 5.9 | N/A | N/A | N/A | N/A |
| 2025 | 5.1 | 5.7 | 0.0% | 3.4% | -2.2% | 2.5% |
| Adjusted 2020 Budget | 5.8 | 4.9 | N/A | N/A | N/A | N/A |
| **2035** | 5.8 | 4.8 | 0.0% | 2.0% | -1.4% | 1.6% |

Source: MCTC, 2010

## TABLE 3-15
## PM2.5 Emissions - 1997 PM2.5 24-Hour & Annual Standards and 2006 24-Hour Standard

| | Emissions (Tons/Day) | | %Below Budget | | % Reduction/Year | |
|---|---|---|---|---|---|---|
| | PM-2.5 | NOX | PM-2.5 | NOX | PM-2.5 | NOX |
| 2012 Budget | 0.5 | 11.4 | N/A | N/A | N/A | N/A |
| 2012 | 0.5 | 11.4 | 0.00% | 0.00% | - | - |
| 2014 | 0.5 | 9.7 | 0.00% | 14.91% | 0.00% | 7.46% |
| 2017 | 0.4 | 7.3 | 20.00% | 35.96% | 6.67% | 8.25% |
| 2025 | 0.4 | 5.5 | 20.00% | 51.75% | 0.00% | 3.08% |
| 2035 | 0.4 | 4.6 | 20.00% | 59.65% | 0.00% | 1.64% |

Source: MCTC, 2010

Significance After Mitigation

The project will result in beneficial effects of system-wide improvement in traffic flows and reduced congestion, which would reduce the potential for increased air emissions. The SJVAPCD 2007 Ozone Plan, 2007 $PM_{10}$ Maintenance Plan, and the 2008 $PM_{2.5}$ Plan all document the SJVAPCD's plans to achieve the state ambient air quality standards, and as such, compliance with the regulations and incentives contained in the SJVAPCD plans results in compliance with the state ambient air quality standards. Based on the air quality analysis, the 2011 RTP conforms to the applicable SJVAPCD plans (2007 Ozone Plan, 2007 $PM_{10}$ Maintenance Plan, and the 2008 $PM_{2.5}$ Plan) and demonstrates progress toward attainment with the state ambient air quality standards for $PM_{10}$, $PM_{2.5}$ and Ozone. As a result, implementation of the 2011 RTP would result in a ***less than significant*** impact to PM10, PM2.5, and Ozone. While the 2011 RTP does contribute to an ongoing violation, it does not impede the above referenced plans and regulations. It is understood that the air quality in the Madera County needs significant improvement. To that end, this EIR identifies all feasible mitigation measures to improve air quality and will not create a new violation or worsen existing violations.

Impact 3.3.4

Create Objectionable Odors Affecting a Substantial Number of People

Implementation of the RTP would not directly create or generate objectionable odors. Persons residing in the immediate vicinity of proposed improvements may be subject to temporary odors typically associated with roadway construction activities (diesel exhaust, hot asphalt, etc.). However, any odors generated by construction activities would be minor and would be short and temporary in duration. This is considered a ***less than significant*** impact.

Impact 3.3.5

Contribute Substantially to, or Result in a Cumulatively Considerable Net Increase of Mobile Source Air Toxics

- Mobile Source Air Toxics (MSAT) Background

  Controlling air toxic emissions became a national priority with the passage of the Federal Clean Air Act Amendments (FCAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007) and identified a group of 93 compounds emitted from mobile sources. In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment. These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter.

  - National MSAT Trends

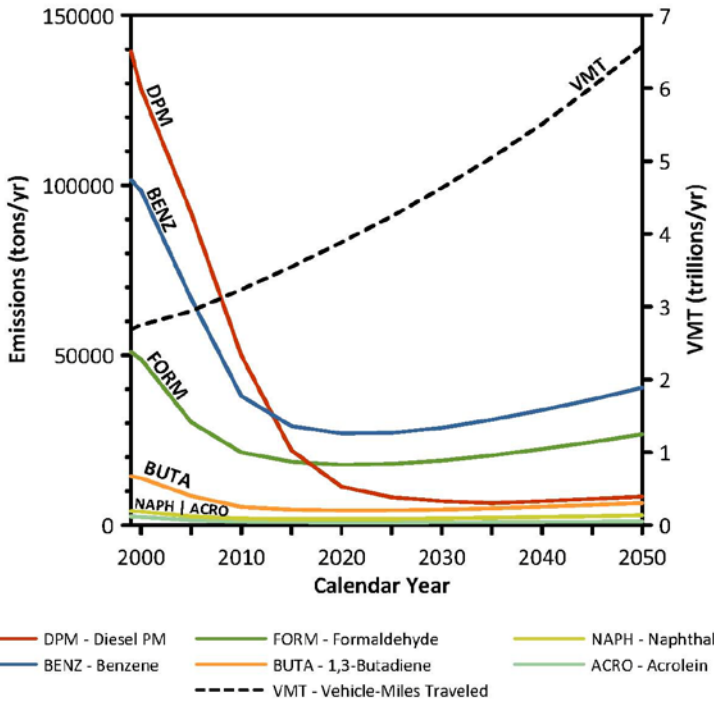
    The 2007 EPA rule requires controls that will dramatically decrease Mobile Source Air Toxics (MSAT) emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (VMT) increases by 145 percent, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in the chart on the following page.

  - Local MSAT Trends (Monitoring in Madera County)

    Estimation of Risk: CARB monitors toxics throughout California, including one site in Fresno County: First Street. The First Street Site in Fresno County is the closest monitoring site to Madera County. Data obtained from this monitoring site between 1989 and 2008 is shown in Tables 3-20 through 3-29. The estimated risks shown in CARB's annual toxics summaries in the tables below are estimated chronic cancer risk (acute risks and non-cancer risks are not shown) resulting from the inhalation pathway. These risks are expressed in terms of expected cancer cases per million population based on exposure to the annual mean concentration over 70 years. They are calculated using unit risk factors provided to the Air Resources Board by the California Office of Environmental Health Hazard Assessment.

    Based on monitoring results in Tables 3-16 through 3-25, toxic emissions are declining except for formaldehyde. It should be noted that the closest monitoring site for Madera County is located in Fresno County; specifically within the City of Fresno or over 30 miles from the Madera County line. As a result, an accurate estimate of formaldehyde in Madera County may be different than those shown in Table 3-18. To address this issue, MCTC will work with the SJVAPCD to address the potential impact or identify appropriate monitoring specific to Madera County. In addition, a mitigation measure has been added to address project level impacts.

**NATIONAL MSAT EMISSION TRENDS 1999 – 2050
FOR VEHICLES OPERATING ON ROADWAYS
USING EPA's MOBILE6.2 MODEL**




Note: (1) Annual emissions of polycyclic organic matter are projected to be 561 tons/yr for 1999, decreasing to 373 tons/yr for 2050.
(2) Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors

# TABLE 3-16
## City of Fresno – First Street Monitoring Site
## (1, 3, Butadiene Measurements)

| Year | Minimum | Median | Mean | 90th Percentile | Max. | Stan Dev. | Number of Observations | Detection Limit | Estimated Risk |
|---|---|---|---|---|---|---|---|---|---|
| 2008 | 0.02 | 0.04 | 0.071 | 0.16 | 0.27 | 0.069 | 31 | 0.04 | 27 |
| 2007 | 0.02 | 0.02 | 0.086 | 0.26 | 0.35 | 0.105 | 29 | 0.04 | 32 |
| 2006 | 0.02 | 0.05 | 0.082 | 0.21 | 0.3 | 0.085 | 31 | 0.04 | 31 |
| 2005 | 0.02 | 0.07 | 0.101 | 0.29 | 0.47 | 0.117 | 34 | 0.04 | 38 |
| 2004 | 0.02 | 0.02 | 0.098 | 0.26 | 0.39 | 0.106 | 30 | 0.04 | 37 |
| 2003 | 0.02 | 0.06 | 0.127 | 0.3 | 0.58 | 0.151 | 31 | 0.04 | 48 |
| 2002 | 0.02 | 0.07 | 0.194 | 0.47 | 1 | 0.225 | 31 | 0.04 | 73 |
| 2001 | 0.02 | 0.1 | 0.182 | 0.42 | 0.9 | 0.226 | 30 | 0.04 | 68 |
| 2000 | 0.02 | 0.09 | 0.195 | 0.62 | 1 | 0.285 | 30 | 0.04 | 73 |
| 1999 | 0.02 | 0.15 | 0.214 | 0.46 | 0.84 | 0.225 | 31 | 0.04 | 80 |
| 1998 | 0.02 | 0.15 | 0.265 | 0.78 | 1 | 0.295 | 31 | 0.04 | 100 |
| 1997 | 0.02 | 0.14 | 0.233 | 0.71 | 1 | 0.268 | 31 | 0.04 | 87 |
| 1996 | 0.02 | 0.13 | 0.234 | 0.49 | 1 | 0.23 | 31 | 0.04 | 88 |
| 1995 | 0.02 | 0.17 | 0.3 | 0.78 | 1.4 | 0.34 | 30 | 0.04 | 113 |
| 1994 | 0.02 | 0.22 | 0.356 | 0.79 | 1.8 | 0.38 | 31 | 0.04 | 134 |
| 1993 | 0.02 | 0.2 | 0.342 | 0.84 | 1.4 | 0.347 | 30 | 0.04 | 129 |
| 1992 | 0.02 | 0.16 | 0.262 | 0.61 | 0.93 | 0.268 | 30 | 0.04 | 99 |
| 1991 | 0.02 | 0.19 | 0.459 | 1.21 | 1.7 | 0.509 | 30 | 0.04 | 173 |
| 1990 | 0.02 | 0.14 | * | 1.04 | 1.6 | 0.466 | 24 | 0.04 | * |
| 1989 | * | * | * | * | * | * | 0 | * | * |

Source: California Air Resources Board, 2010

## TABLE 3-17
## City of Fresno – First Street Monitoring Site
## (Benzene Measurements)

| Year | Minimum | Median | Mean | 90th Percentile | Max. | Stan Dev. | Number of Observations | Detection Limit | Estimated Risk |
|---|---|---|---|---|---|---|---|---|---|
| 2008 | 0.09 | 0.24 | 0.356 | 0.72 | 1 | 0.265 | 31 | 0.05 | 33 |
| 2007 | 0.06 | 0.24 | 0.374 | 1.02 | 1.2 | 0.367 | 29 | 0.05 | 35 |
| 2006 | 0.05 | 0.27 | 0.387 | 1 | 1.4 | 0.342 | 31 | 0.05 | 36 |
| 2005 | 0.07 | 0.32 | 0.408 | 1.03 | 1.5 | 0.375 | 34 | 0.05 | 38 |
| 2004 | 0.07 | 0.22 | 0.403 | 0.78 | 1.4 | 0.35 | 30 | 0.05 | 37 |
| 2003 | 0.1 | 0.31 | 0.546 | 1.2 | 1.8 | 0.498 | 31 | 0.05 | 51 |
| 2002 | 0.08 | 0.27 | 0.631 | 1.5 | 2.2 | 0.574 | 31 | 0.05 | 58 |
| 2001 | 0.08 | 0.4 | 0.61 | 1.26 | 3.1 | 0.672 | 30 | 0.05 | 56 |
| 2000 | 0.1 | 0.5 | 0.73 | 1.9 | 3.1 | 0.86 | 30 | 0.2 | 68 |
| 1999 | 0.1 | 0.5 | 0.8 | 1.7 | 2.9 | 0.73 | 31 | 0.2 | 74 |
| 1998 | 0.1 | 0.5 | 0.83 | 2.3 | 2.8 | 0.83 | 31 | 0.2 | 76 |
| 1997 | 0.1 | 0.5 | 1 | 2.4 | 5.8 | 1.19 | 31 | 0.2 | 92 |
| 1996 | 0.25 | 0.25 | 0.79 | 1.5 | 3.1 | 0.7 | 33 | 0.5 | 73 |
| 1995 | 0.25 | 1 | 1.24 | 2.4 | 4.5 | 1.11 | 30 | 0.5 | 115 |
| 1994 | 0.25 | 1 | 1.44 | 3.1 | 7.6 | 1.55 | 31 | 0.5 | 133 |
| 1993 | 0.25 | 1.2 | 1.35 | 3.6 | 4.4 | 1.26 | 30 | 0.5 | 125 |
| 1992 | 0.25 | 1 | 1.34 | 2.8 | 3.8 | 1.05 | 30 | 0.5 | 124 |
| 1991 | 0.25 | 1.6 | 2.42 | 5.4 | 7.3 | 2.04 | 30 | 0.5 | 224 |
| 1990 | 0.25 | 1.3 | * | 5.2 | 5.4 | 1.78 | 24 | 0.5 | * |
| 1989 | * | * | * | * | * | * | 0 | * | * |

Source: California Air Resources Board, 2010

## TABLE 3-18
## City of Fresno – First Street Monitoring Site
## (Formaldehyde Measurements)

| Year | Minimum | Median | Mean | 90th Percentile | Max. | Stan Dev. | Number of Observations | Detection Limit | Estimated Risk |
|---|---|---|---|---|---|---|---|---|---|
| 2008 | 0.7 | 2.9 | 3.13 | 5.1 | 6.8 | 1.65 | 30 | 0.1 | 23 |
| 2007 | 0.6 | 2.8 | 2.88 | 4.8 | 7.9 | 1.53 | 30 | 0.1 | 21 |
| 2006 | 0.6 | 3.2 | 3.41 | 5.5 | 8.8 | 1.9 | 31 | 0.1 | 25 |
| 2005 | 0.7 | 2.5 | 3 | 6 | 6.9 | 1.88 | 33 | 0.1 | 22 |
| 2004 | 1 | 2.2 | 2.57 | 3.9 | 5 | 1.15 | 31 | 0.1 | 19 |
| 2003 | 0.7 | 3.9 | 3.72 | 6 | 8 | 1.94 | 33 | 0.1 | 27 |
| 2002 | 1.1 | 3.5 | 4.16 | 5.6 | 18 | 3.2 | 32 | 0.1 | 31 |
| 2001 | 1.2 | 3.3 | 4.32 | 5.4 | 26 | 4.43 | 30 | 0.1 | 32 |
| 2000 | 0.9 | 2.6 | 3.56 | 6.4 | 7.9 | 1.92 | 28 | 0.1 | 26 |
| 1999 | 0.05 | 3.6 | * | 7.2 | 8.8 | 2.26 | 24 | 0.1 | * |
| 1998 | 0.05 | 3.4 | 3.42 | 5.9 | 7.2 | 1.91 | 27 | 0.1 | 25 |
| 1997 | 0.9 | 3.6 | * | 5.6 | 6.4 | 1.47 | 18 | 0.1 | * |
| 1996 | 0.5 | 3.4 | * | 7.8 | 8.4 | 2.26 | 22 | 0.1 | * |
| 1995 | 0.4 | 2.3 | 2.41 | 4.1 | 8.3 | 1.79 | 31 | 0.1 | 18 |
| 1994 | 0.2 | 1.8 | 2.01 | 4 | 7.4 | 1.61 | 31 | 0.1 | 15 |
| 1993 | 0.6 | 1.3 | 1.64 | 3.4 | 4.5 | 1.16 | 26 | 0.1 | 12 |
| 1992 | 0.5 | 1.5 | * | 4.3 | 5.3 | 1.57 | 21 | 0.1 | * |
| 1991 | 0.4 | 1.9 | 2.32 | 4.9 | 7.7 | 1.88 | 27 | 0.1 | 17 |
| 1990 | 0.05 | 1.3 | * | 5.4 | 9 | 2.32 | 23 | 0.1 | * |
| 1989 | * | * | * | * | * | * | 0 | * | * |

Source: California Air Resources Board, 2010

## TABLE 3-19
## City of Fresno – First Street Monitoring Site
## (Acrolein Measurements)

| Year | Minimum | Median | Mean | 90th Percentile | Max. | Stan Dev. | Number of Observations | Detection Limit |
|---|---|---|---|---|---|---|---|---|
| 2008 | 0.4 | 0.5 | 0.57 | 0.8 | 1.1 | 0.18 | 31 | 0.3 |
| 2007 | 0.15 | 0.4 | 0.51 | 0.8 | 2.2 | 0.38 | 29 | 0.3 |
| 2006 | 0.15 | 0.5 | 0.49 | 0.8 | 1.1 | 0.23 | 31 | 0.3 |
| 2005 | 0.15 | 0.4 | 0.41 | 0.6 | 0.9 | 0.21 | 34 | 0.3 |
| 2004 | 0.15 | 0.5 | 0.54 | 0.8 | 1.6 | 0.29 | 29 | 0.3 |
| 2003 | 0.15 | 0.7 | * | 1.1 | 1.4 | 0.33 | 15 | 0.3 |

Source: California Air Resources Board, 2010

## TABLE 3-20
## City of Fresno – First Street Monitoring Site
## (Benzo(a)pyrene-10)

| Year | Minimum | Median | Mean | 90th Percentile | Max. | Stan Dev. | Number of Observations | Detection Limit | Estimated Risk |
|---|---|---|---|---|---|---|---|---|---|
| 2005 | 0.13 | * | * | * | 0.63 | 0.198 | 5 | 0.05 | * |
| 2004 | 0.025 | 0.025 | 0.21 | 0.63 | 2 | 0.415 | 30 | 0.05 | 0.2 |
| 2003 | 0.025 | 0.025 | 0.414 | 1.2 | 2.9 | 0.795 | 31 | 0.05 | 0.5 |
| 2002 | 0.025 | 0.025 | 0.466 | 1.52 | 2.7 | 0.729 | 30 | 0.05 | 0.5 |
| 2001 | 0.025 | 0.11 | 0.501 | 1 | 4.3 | 1.1 | 31 | 0.05 | 0.6 |
| 2000 | 0.025 | 0.025 | 0.491 | 1.15 | 4.6 | 1.08 | 30 | 0.05 | 0.5 |
| 1999 | 0.025 | 0.025 | 0.533 | 2.02 | 4.1 | 1.1 | 30 | 0.05 | 0.6 |
| 1998 | 0.025 | 0.06 | 0.618 | 2.4 | 4.3 | 1.18 | 31 | 0.05 | 0.7 |
| 1997 | 0.025 | 0.06 | 0.562 | 1.59 | 4.6 | 1.04 | 30 | 0.05 | 0.6 |
| 1996 | 0.025 | 0.025 | 0.515 | 2.6 | 3 | 1.02 | 24 | 0.05 | 0.6 |
| 1995 | 0.025 | 0.1 | 0.533 | 1.21 | 3.6 | 0.964 | 24 | 0.05 | 0.6 |
| 1994 | 0.025 | 0.51 | * | 2.61 | 5.5 | 1.5 | 14 | 0.05 | * |
| 1993 | 0.025 | 0.1 | 1.24 | 4.17 | 6.2 | 1.93 | 24 | 0.05 | 1 |
| 1992 | 0.025 | 0.08 | 0.624 | 2.19 | 4.7 | 1.18 | 24 | 0.05 | 0.7 |
| 1991 | 0.025 | 0.18 | 0.885 | 3.81 | 4.8 | 1.53 | 24 | 0.05 | 1 |
| 1990 | 0.025 | 0.07 | * | 1.52 | 23 | 5.38 | 18 | 0.05 | * |
| 1989 | * | * | * | * | * | * | 0 | * | * |

Source: California Air Resources Board, 2010

## TABLE 3-21
## City of Fresno – First Street Monitoring Site
## (Benzo(b)fluoranthene-10)

| Year | Minimum | Median | Mean | 90th Percentile | Max. | Stan Dev. | Number of Observations | Detection Limit | Estimated Risk |
|---|---|---|---|---|---|---|---|---|---|
| 2005 | 0.22 | * | * | * | 0.63 | 0.159 | 5 | 0.05 | * |
| 2004 | 0.025 | 0.025 | 0.258 | 0.81 | 2.3 | 0.469 | 30 | 0.05 | 0.03 |
| 2003 | 0.025 | 0.07 | 0.436 | 1.1 | 3 | 0.732 | 31 | 0.05 | 0.05 |
| 2002 | 0.025 | 0.025 | 0.508 | 1.31 | 3 | 0.774 | 30 | 0.05 | 0.06 |
| 2001 | 0.025 | 0.14 | 0.579 | 1.3 | 5.2 | 1.18 | 31 | 0.05 | 0.06 |
| 2000 | 0.025 | 0.08 | 0.551 | 1.27 | 4.5 | 1.15 | 30 | 0.05 | 0.06 |
| 1999 | 0.025 | 0.09 | 0.584 | 2.23 | 4.2 | 1.12 | 30 | 0.05 | 0.06 |
| 1998 | 0.025 | 0.12 | 0.621 | 2.4 | 3.8 | 1.01 | 31 | 0.05 | 0.07 |
| 1997 | 0.025 | 0.1 | 0.722 | 1.69 | 7.1 | 1.43 | 30 | 0.05 | 0.08 |
| 1996 | 0.025 | 0.09 | 0.489 | 2.06 | 2.8 | 0.877 | 24 | 0.05 | 0.05 |
| 1995 | 0.025 | 0.15 | 0.538 | 1.07 | 3 | 0.825 | 24 | 0.05 | 0.06 |
| 1994 | 0.1 | 0.77 | * | 3.1 | 5.5 | 1.51 | 14 | 0.05 | * |
| 1993 | 0.025 | 0.16 | 1.29 | 4.12 | 5.1 | 1.73 | 24 | 0.05 | 0.1 |
| 1992 | 0.025 | 0.14 | 0.718 | 2.41 | 5.2 | 1.26 | 24 | 0.05 | 0.08 |
| 1991 | 0.06 | 0.26 | 0.999 | 3.54 | 5.1 | 1.51 | 24 | 0.05 | 0.1 |
| 1990 | 0.05 | 0.15 | * | 1.77 | 22 | 5.12 | 18 | 0.05 | * |
| 1989 | * | * | * | * | * | * | 0 | * | * |

Source: California Air Resources Board, 2010

## TABLE 3-22
## City of Fresno – First Street Monitoring Site
## (Benzo(g, h, i)perylene-10)

| Year | Minimum | Median | Mean | 90th Percentile | Max. | Stan Dev. | Number of Observations | Detection Limit |
|---|---|---|---|---|---|---|---|---|
| 2005 | 0.33 | * | * | * | 0.91 | 0.239 | 5 | 0.05 |
| 2004 | 0.025 | 0.11 | 0.442 | 1.11 | 3.9 | 0.812 | 30 | 0.05 |
| 2003 | 0.025 | 0.1 | 0.618 | 1.6 | 3.9 | 1.03 | 31 | 0.05 |
| 2002 | 0.025 | 0.11 | 0.629 | 1.92 | 2.8 | 0.815 | 30 | 0.05 |
| 2001 | 0.025 | 0.23 | 0.72 | 1.7 | 5.8 | 1.25 | 31 | 0.05 |
| 2000 | 0.025 | 0.16 | 0.738 | 1.77 | 5.3 | 1.34 | 30 | 0.05 |
| 1999 | 0.025 | 0.15 | 0.783 | 2.68 | 4.8 | 1.32 | 30 | 0.05 |
| 1998 | 0.025 | 0.26 | 0.718 | 2.2 | 4.1 | 1.11 | 31 | 0.05 |
| 1997 | 0.025 | 0.24 | 1.1 | 2.34 | 9.2 | 1.92 | 30 | 0.05 |
| 1996 | 0.025 | 0.21 | 0.657 | 2.28 | 3.7 | 1.02 | 24 | 0.05 |
| 1995 | 0.025 | 0.33 | 0.911 | 2.42 | 3.8 | 1.1 | 24 | 0.05 |
| 1994 | 0.27 | 1.4 | * | 4.52 | 6 | 1.78 | 14 | 0.05 |
| 1993 | 0.1 | 0.33 | 1.82 | 5.35 | 6.6 | 2.24 | 24 | 0.05 |
| 1992 | 0.025 | 0.23 | 0.904 | 2.75 | 5.2 | 1.36 | 24 | 0.05 |
| 1991 | 0.07 | 0.48 | 1.49 | 5.42 | 6.9 | 2.13 | 24 | 0.05 |
| 1990 | 0.11 | * | * | * | 15 | 4.96 | 8 | 0.05 |
| 1989 | * | * | * | * | * | * | 0 | * |

Source: California Air Resources Board, 2010

## TABLE 3-23
## City of Fresno – First Street Monitoring Site
## (Benzo(k)fluoranthene-10)

| Year | Minimum | Median | Mean | 90th Percentile | Max. | Stan Dev. | Number of Observations | Detection Limit | Estimated Risk |
|---|---|---|---|---|---|---|---|---|---|
| 2005 | 0.1 | * | * | * | 0.26 | 0.065 | 5 | 0.05 | * |
| 2004 | 0.025 | 0.025 | 0.117 | 0.34 | 1 | 0.202 | 30 | 0.05 | 0.01 |
| 2003 | 0.025 | 0.025 | 0.209 | 0.5 | 1.5 | 0.354 | 31 | 0.05 | 0.02 |
| 2002 | 0.025 | 0.025 | 0.227 | 0.64 | 1.3 | 0.333 | 30 | 0.05 | 0.02 |
| 2001 | 0.025 | 0.06 | 0.249 | 0.49 | 2.1 | 0.495 | 31 | 0.05 | 0.03 |
| 2000 | 0.025 | 0.025 | 0.234 | 0.54 | 1.9 | 0.485 | 30 | 0.05 | 0.03 |
| 1999 | 0.025 | 0.025 | 0.25 | 0.95 | 1.8 | 0.481 | 30 | 0.05 | 0.03 |
| 1998 | 0.025 | 0.025 | 0.266 | 1.1 | 1.6 | 0.452 | 31 | 0.05 | 0.03 |
| 1997 | 0.025 | 0.025 | 0.27 | 0.69 | 2.2 | 0.482 | 30 | 0.05 | 0.03 |
| 1996 | 0.025 | 0.025 | 0.21 | 0.88 | 1.2 | 0.38 | 24 | 0.05 | 0.02 |
| 1995 | 0.025 | 0.06 | 0.251 | 0.52 | 1.5 | 0.402 | 24 | 0.05 | 0.03 |
| 1994 | 0.025 | 0.31 | * | 1.28 | 2.2 | 0.614 | 14 | 0.05 | * |
| 1993 | 0.025 | 0.07 | 0.563 | 1.74 | 2.4 | 0.789 | 24 | 0.05 | 0.06 |
| 1992 | 0.025 | 0.05 | 0.313 | 1.1 | 2.3 | 0.57 | 24 | 0.05 | 0.03 |
| 1991 | 0.025 | 0.1 | 0.395 | 1.42 | 2.3 | 0.658 | 24 | 0.05 | 0.04 |
| 1990 | 0.025 | 0.025 | * | 0.83 | 9.6 | 2.24 | 18 | 0.05 | * |
| 1989 | * | * | * | * | * | * | 0 | * | * |

Source: California Air Resources Board, 2010

## TABLE 3-24
## City of Fresno – First Street Monitoring Site
## (Dbenz(a, h)anthracene-10)

| Year | Minimum | Median | Mean | 90th Percentile | Max. | Stan Dev. | Number of Observations | Detection Limit | Estimated Risk |
|---|---|---|---|---|---|---|---|---|---|
| 2005 | 0.025 | * | * | * | 0.11 | 0.035 | 5 | 0.05 | * |
| 2004 | 0.025 | 0.025 | 0.049 | 0.1 | 0.34 | 0.062 | 30 | 0.05 | 0.02 |
| 2003 | 0.025 | 0.025 | 0.075 | 0.23 | 0.41 | 0.104 | 31 | 0.05 | 0.03 |
| 2002 | 0.025 | 0.025 | 0.086 | 0.25 | 0.34 | 0.097 | 30 | 0.05 | 0.03 |
| 2001 | 0.025 | 0.025 | 0.08 | 0.23 | 0.58 | 0.136 | 31 | 0.05 | 0.03 |
| 2000 | 0.025 | 0.025 | 0.073 | 0.15 | 0.62 | 0.129 | 30 | 0.05 | 0.03 |
| 1999 | 0.025 | 0.025 | 0.078 | 0.25 | 0.73 | 0.145 | 30 | 0.05 | 0.03 |
| 1998 | 0.025 | 0.025 | 0.059 | 0.15 | 0.39 | 0.076 | 31 | 0.05 | 0.02 |
| 1997 | 0.025 | 0.025 | 0.066 | 0.13 | 0.52 | 0.101 | 30 | 0.05 | 0.03 |
| 1996 | 0.025 | 0.025 | 0.046 | 0.12 | 0.21 | 0.049 | 24 | 0.05 | 0.02 |
| 1995 | 0.025 | 0.025 | 0.045 | 0.07 | 0.21 | 0.051 | 24 | 0.05 | 0.02 |
| 1994 | 0.025 | 0.05 | * | 0.19 | 0.35 | 0.094 | 14 | 0.05 | * |
| 1993 | 0.025 | 0.025 | 0.119 | 0.34 | 0.43 | 0.135 | 24 | 0.05 | 0.05 |
| 1992 | 0.025 | 0.025 | 0.067 | 0.17 | 0.33 | 0.082 | 24 | 0.05 | 0.03 |
| 1991 | 0.025 | 0.025 | 0.133 | 0.36 | 0.72 | 0.179 | 24 | 0.05 | 0.05 |
| 1990 | 0.06 | * | * | * | 6.6 | 2.27 | 8 | 0.05 | * |
| 1989 | * | * | * | * | * | * | 0 | * | * |

Source: California Air Resources Board, 2010

## TABLE 3-25
## City of Fresno – First Street Monitoring Site
## (Indeno(1,2,3-cd)pyrene-10)

| Year | Minimum | Median | Mean | 90th Percentile | Max. | Stan Dev. | Number of Observations | Detection Limit | Estimated Risk |
|---|---|---|---|---|---|---|---|---|---|
| 2005 | 0.25 | * | * | * | 0.75 | 0.196 | 5 | 0.05 | * |
| 2004 | 0.025 | 0.025 | 0.27 | 0.87 | 2 | 0.442 | 30 | 0.05 | 0.03 |
| 2003 | 0.025 | 0.06 | 0.43 | 1.2 | 2.6 | 0.665 | 31 | 0.05 | 0.05 |
| 2002 | 0.025 | 0.025 | 0.515 | 1.31 | 2.8 | 0.766 | 30 | 0.05 | 0.06 |
| 2001 | 0.025 | 0.21 | 0.625 | 1.5 | 4.9 | 1.18 | 31 | 0.05 | 0.07 |
| 2000 | 0.025 | 0.09 | 0.585 | 1.56 | 4.3 | 1.12 | 30 | 0.05 | 0.06 |
| 1999 | 0.025 | 0.11 | 0.619 | 2.5 | 4.1 | 1.12 | 30 | 0.05 | 0.07 |
| 1998 | 0.025 | 0.16 | 0.698 | 2.7 | 4 | 1.09 | 31 | 0.05 | 0.08 |
| 1997 | 0.025 | 0.11 | 0.697 | 1.78 | 6.2 | 1.27 | 30 | 0.05 | 0.08 |
| 1996 | 0.025 | 0.1 | 0.509 | 2.14 | 2.9 | 0.871 | 24 | 0.05 | 0.06 |
| 1995 | 0.025 | 0.18 | 0.618 | 1.47 | 3.1 | 0.857 | 24 | 0.05 | 0.07 |
| 1994 | 0.13 | 0.79 | * | 2.58 | 4.7 | 1.26 | 14 | 0.05 | * |
| 1993 | 0.06 | 0.17 | 1.24 | 3.77 | 4.9 | 1.64 | 24 | 0.05 | 0.1 |
| 1992 | 0.025 | 0.16 | 0.809 | 2.78 | 5.6 | 1.37 | 24 | 0.05 | 0.09 |
| 1991 | 0.05 | 0.4 | 1.1 | 3.53 | 4.8 | 1.5 | 24 | 0.05 | 0.1 |
| 1990 | 0.025 | * | * | * | 26 | 8.83 | 8 | 0.05 | * |
| 1989 | * | * | * | * | * | * | 0 | * | * |

Source: California Air Resources Board, 2010

- Diesel Particulate Emissions

Diesel Particulate emissions were quantified for the San Joaquin Valley portions of State Route 99 (SR-99) and Interstate 5 (I-5) to determine the impacts of diesel particulate matter ($PM_{10}$ and $PM_{2.5}$) on the residents of the San Joaquin Valley. Future project emissions were compared to existing baseline emissions to determine if diesel particulate emissions increase over time as a result of the 2011 RTP.

The 2035 annual average daily traffic (AADT) projections for trucks travelling the I-5 and SR-99 corridors were developed using Caltrans truck traffic counts on the SR-99 and I-5 corridors from 2000 through 2008. To develop a "worst case" emissions estimate, vehicle miles of travel associated with the 2035 truck projections were developed by multiplying the length of SR-99 or I-5 by the highest truck volume segment (SR-99 Kern County JCT. RTE. 58 WEST, JCT. RTE. 178 EAST (Leg A): 32,450 Truck AADT and I-5 San Joaquin County I-5

Jct. Rte 205 West (Leg A): 42,240 Truck AADT) in 2008. This approach is deemed conservative, as all other I-5 and SR-99 segments have truck volumes less than or equal to the highest segment respectively. This approach assumes the highest truck volumes occur across all segments of SR-99 and I-5 in the San Joaquin Valley.

As all trucks are not diesel and do not emit diesel particulate, EMFAC2007 was utilized to determine which percentage of trucks from the Caltrans traffic counts for truck AADT were diesel. EMFAC2007 emissions rates were then utilized to quantify diesel particulate running exhaust emissions on the I-5 and SR-99 corridor respectively for the base year and the 2035 project. Table 3-26 shows the results of the analysis.

## TABLE 3-26
## Running Emissions Summary
## (Diesel PM)

| SR-99 Emissions (Tons/day) | | |
|---|---|---|
| | 2010 | 2035 |
| Diesel PM10 | 1.290558 | 0.501899 |
| Diesel PM2.5 | 1.161864 | 0.411517 |
| VMT per day | 3630872 | 5496425 |
| **I-5 Diesel Emissions (Tons/day)** | | |
| | 2010 | 2035 |
| Diesel PM10 | 2.902829 | 0.496579 |
| Diesel PM2.5 | 2.61336 | 0.407155 |
| VMT per day | 3258028 | 5438169 |

Source: MCTC, 2010

Mitigation Measure

The following mitigation measure is presented to ensure that MSAT assessments are performed on a project-level, and to ensure that the most current tools and techniques are used for assessing the health risks of MSATs.

- As air toxics research continues, MCTC should utilize the tools and techniques that are developed for assessing health outcomes as a result of lifetime MSAT exposure. The potential health risks posed by MSAT exposure should continue to be factored into project-level decision-making in the context of environmental review. Specifically, at the project level, local agencies shall require or perform air toxic risk assessments to determine mobile source air toxic impacts.

Significance After Mitigation

The results from the diesel PM emissions summary for Madera County show that the 2011 RTP design year emission levels will continue trending downward through the 2035 RTP horizon year. In addition, the U.S. EPA has published an MSAT assessment that demonstrates a national decreasing trend for MSATs including, acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. California maintains stricter standards for clean fuels and emissions compared to the national standards, therefore it is expected that MSAT trends in California will decrease consistent with or more than the U.S. EPA's national projections. Implementation of the proposed project will have a ***less than significant*** impact.

# 3.5 CLIMATE CHANGE

This section includes a discussion of global climate change, its causes and the contribution of human activities, as well as a summary of existing greenhouse gas emissions. This section also describes the criteria for determining the significance of climate change impacts, and estimates the likely greenhouse gas emissions that would result from vehicular traffic and other emission sources related to the project. Where appropriate, mitigation measures are recommended to reduce project-related impacts.

## Environmental Setting

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Global Climate Change (GCC) means a shift in the climate of the earth as a whole that occurs naturally as in the case of the ice age. According to the California Air Resources Board (CARB), the climate change that is occurring today differs from previous climate changes in both time and scale.

Gases that catch heat in the atmosphere are regularly called greenhouse gases (GHGs). The Earth's surface temperature would be about 61 degrees Fahrenheit colder than it is currently if it were not for the innate heat trapping effect of GHGs. The buildup of these gases in the earth's atmosphere is considered the source of the observed increase in the earth's temperature (global warming). Some greenhouse gases such as carbon dioxide occur naturally in nature and are emitted to the atmosphere through natural processes and as well as through some anthropocentric activities. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities.

Since the Industrial Revolution (circa 1750), global concentrations of carbon dioxide ($CO_2$) have risen about 36%, chiefly due to the burning of fossil fuels. Questions remain about the amount of warming that will occur, how rapidly it will occur, and how the warming will affect the rest of the climate system, including weather events.

The United Nations Intergovernmental Panel on Climate Change constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The Panel concluded that a stabilization of GHGs at 400 to 450 parts per million (ppm) $CO_2$ equivalent concentration is required to keep global mean warming below 3.6º Fahrenheit (2º Celsius). This is presumed necessary to avoid dangerous climate change (Association of Environmental Professionals, 2007).

State law defines greenhouse gases as any of the following compounds: carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride ($SF_6$) (California Health and Safety Code Section 38505(g).) $CO_2$, followed by $CH_4$ and $N_2O$, are the most common GHGs that result from human activity. The characteristics of state defined GHGs are described below:

- Carbon dioxide – $CO_2$ results from fossil fuel combustion in stationary and mobile sources. It contributes to the greenhouse effect, but not to stratospheric ozone depletion. In 2004, $CO_2$ accounted for approximately 84 percent of total GHG emissions in the State (CEC, 2006);

- Methane – $CH_4$ can also be divided into anthropogenic (i.e., resulting from human activities and/or processes) and natural sources. Anthropogenic sources include rice agriculture, livestock, landfills, and waste treatment, some biomass burning, and fossil fuel combustion. Natural sources are wetlands, oceans, forests, fire, termites

and geological sources. Anthropogenic sources currently account for more than 60 percent of the total global emissions; and

- Other regulated GHGs include Nitrous Oxide ($N_20$), Sulfur Hexafluoride ($SF_6$), Hydrofluorocarbons (HFC), and Perfluorocarbons (PFC) - These gases all possess heat-trapping characteristics that are greater than $CO_2$. Emission sources of nitrous oxide gases include, but are not limited to, waste combustion, waste water treatment, fossil fuel combustion, and fertilizer production. Because the volume of emissions is small, the net effect of nitrous oxide emissions relative to $CO_2$ or CH4 is relatively small. $SF_6$, HFC, and PFC emissions occur at even lower rates.

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as $CO_2$, methane, and $N_2O$, some gases, like HFCs, PFCs, and $SF_6$ are completely new to the atmosphere.

Certain other gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change over the long-term. Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

Globally, climate change has the potential to impact numerous environmental resources through potential, though uncertain, impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of about 0.2°C (0.36° Fahrenheit) per decade is projected, and there are identifiable signs that global warming is taking place, including substantial ice loss in the Arctic.

However, the understanding of GHG emissions, particulate matter, and aerosols on global climate trends remains uncertain. In addition to uncertainties about the extent to which human activity rather than solar or volcanic activity is responsible for increasing warming, there is also evidence that some human activity has cooling, rather than warming, effects, as discussed in detail in numerous publications by the International Panel on Climate Change (IPCC), namely “Climate Change 2001, The Scientific Basis”(2001).

Climate change modeling shows that further warming could occur, which would induce additional changes in the global climate system during the current century. GHGs have the potential to affect the environment because such emissions are believed to contribute cumulatively to global climate change. Although GHG emissions from one single project will not by themselves cause global climate change, it is thought that GHG emissions from multiple projects, past, present and future throughout the world may collectively result in a cumulative impact with respect to global climate change. It is speculated that global climate change could contribute to rising sea levels, which can inundate low-lying areas; impact rainfall and snowfall, which could change water supply; affect habitat, which could affect biological resources, along with other unknown effects.

The consumption of nonrenewable energy (primarily gasoline and diesel fuel) associated with construction activities and the operation of passenger, public transit, and commercial vehicles results in GHG emissions that cause global climate change. In addition, alternative fuels like natural gas including CNG and liquefied natural gas (LNG), ethanol, and electricity (unless derived from solar, wind, nuclear, or another energy source that does not produce carbon emissions) also result in GHG emissions and contribute to global climate change.

Changes in California's climate and ecosystems are occurring at a time when the State's population is expected to increase from 34 to 59 million by 2040, according to the California Energy Commission (CEC). As such, the number of people potentially affected by climate change, as well as the amount of anthropogenic GHG emissions expected under a "business as usual" scenario, is expected to increase. Climate models indicate that temperatures in California may rise by 4.7°F to 10.5°F by the end of the century if GHG emissions continue to proceed at a medium or high rate (CEC, 2006). Lower emission rates would reduce the projected warming to 3.0°F to 5.6° Fahrenheit. Almost all climate scenarios include a continuing trend of warming through the end of the century given the amounts of GHGs already released, and the difficulties associated with reducing emissions to a level that would stabilize the climate. Total GHG emissions in California have been approximated by CARB, which found that 468 MMT of $CO_2E$ GHG emissions were produced in California in 2004. CARB also found transportation to be the source of 38 percent of the State's GHG emissions, followed by electricity generation at 25 percent and industrial sources at 20 percent.

The IPCC was established by the World Meteorological Organization and United Nations Environment Programme to assess scientific, technical, and socioeconomic information to further understand climate change, its potential impacts, and options for adaptation and mitigation. The IPCC predicts substantial increases in temperatures globally of between 1.1 to 6.4 degrees Celsius, depending on the scenario studied. This may impact California's natural environment in the following ways:

- Rising sea levels along the California coastline, particularly in the San Francisco Bay Area and within the San Joaquin Delta because of ocean expansion;
- Extreme-heat conditions, such as heat waves and very high temperatures, which could last longer and become more frequent;
- An increase in heat-related human deaths, infectious diseases, and a higher risk of respiratory problems caused by deteriorating air quality;
- Reduced snow pack and stream flow in the Sierra Nevada mountains, affecting winter recreation and water supplies;
- Potential increases in the severity of winter storms, affecting peak stream flows and flooding;
- Changes in growing season conditions that could affect California agriculture, causing variations in crop quality and yield;
- Changes in the distribution of plant and wildlife species because of changes in temperature, competition from colonizing species, changes in hydrologic cycles, changes in sea levels, and other climate-related effects;
- Increases in the number of days conducive to ozone formation by 25 to 85 percent (depending on the future temperature scenario) in high ozone areas of Los Angeles and the San Joaquin Valley by the end of the 21st century; and
- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.

The State of California GHG Inventory performed by CARB compiled statewide human sources of GHG emissions. It includes estimates for carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and

perfluorocarbons. The current inventory covers the years 1990 to 2004, and is summarized in Table 3-30. When accounting for GHGs, all types of GHG emissions are expressed in terms of $CO_2$ equivalents ($CO_2E$) and are typically quantified in metric tons (MT) or millions of metric tons (MMT). Data sources used to calculate this GHG inventory include California state and federal agencies, international organizations, and industry associations. The calculation methodologies are consistent with guidance from the IPCC. The 1990 emissions level is the sum total of sources from all sectors and categories in the inventory. The inventory is divided into seven broad sectors and categories. These sectors include: agriculture; commercial; electricity generation; forestry; industrial; residential; and transportation. Emissions of carbon dioxide and nitrous oxide are byproducts of fossil fuel combustion, among other sources. Methane, a highly potent GHG, results from off-gassing associated with agricultural practices and landfills, among other sources. Sinks of carbon dioxide include uptake by vegetation and dissolution into the ocean.

## TABLE 3-30
## State of California GHG Inventory (1990-2004)

| SECTOR | TOTAL 1990 EMISSIONS (MMT $CO_2E^2$) | PERCENT OF TOTAL 1990 EMISSIONS | TOTAL 2004 EMISSIONS ($MMTCO_2E$) | PERCENT OF TOTAL 2004 EMISSIONS |
|---|---|---|---|---|
| Agriculture | 23.4 | 5% | 27.9 | 6% |
| Commercial | 14.4 | 3% | 12.8 | 3% |
| Electricity Generation | 110.6 | 26% | 119.8 | 25% |
| Forestry | 0.2 | <1% | 0.2 | <1% |
| Industrial | 103.0 | 24% | 96.2 | 20% |
| Residential | 29.7 | 7% | 29.1 | 6% |
| Transportation | 150.7 | 35% | 182.4 | 38% |
| Forestry Sinks (Absorption) | (6.7) | | (4.7) | |
| Total | 432 | 100% | 468 | 100% |

[1]Source: Staff Report – California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit, California Air Resources Board, November 16, 2007.
[2]MMT $CO_2E$ refers to million metric tons of $CO_2$ equivalent emissions.

### Regulatory

#### Federal

In 1988, the United Nations established the Intergovernmental Panel on Climate Change to assess the impacts of global warming and to develop strategies that nations could apply to curb global climate change. In 1992, the United States joined other countries around the world in signing the United Nations Framework Convention on Climate Change treaty with the goal of controlling greenhouse gas emissions.

As a result, the Climate Change Action Plan was developed to address reduction of greenhouse gases in the United States. The plan is comprised of more than 50 voluntary programs. Additionally, the Montreal Protocol was first signed in 1987 and considerably amended in 1990 and 1992. The Montreal Protocol instructs that the production and consumption of compounds that deplete ozone in the stratosphere--chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform--were to be phased out by 2000 (2005 for methyl chloroform).

Recently, in *Massachusetts v. EPA* (April 2, 2007), the U.S. Supreme Court held that GHGs fall within the Clean Air Act's definition of an "air pollutant" and directed the U. S. Environmental Protection Agency (EPA) to deem whether GHGs are affecting climate change. The EPA must regulate GHG emissions from automobiles under the Federal Clean Air Act (FCAA) if it is determined GHGs do affect climate change. Currently, the EPA has not yet begun rule-making proceedings to judge whether GHGs are contributing to climate change. In addition, Congress has enlarged the corporate average fuel economy (CAFE) of the U.S. automotive fleet. In December 2007, President George W. Bush signed a bill increasing the minimum average miles per gallon for cars, sport utility vehicles and light trucks to 35 miles per gallon by 2020. This rise in CAFE standards will result in a significant reduction in GHG emissions from automobiles, the largest single emitting GHG group in California.

On April 17, 2009, EPA issued its proposed endangerment finding for GHG emissions. EPA is proposing to find that greenhouse gases in the atmosphere endanger the public health and welfare of current and future generations. Concentrations of greenhouse gases are at unprecedented levels compared to the recent and distant past. EPA has stated that these high atmospheric levels are the unambiguous result of human emissions, and are very likely the cause of the observed increase in average temperatures and other climatic changes. The effects of climate change observed to date and projected to occur in the future – including but not limited to the increased likelihood of more frequent and intense heat waves, more wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea level rise, more intense storms, harm to water resources, harm to agriculture, and harm to wildlife and ecosystems – are effects on public health and welfare within the policies of the FCAA.

The U.S. EPA annually publishes the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* for estimating sources of GHGs that is generally consistent with the IPCC methodology developed in its *Guidelines for National Greenhouse Gas Inventories*.

- Energy Policy and Conservation Act

  The Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the U.S. would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the Act, the National Highway Traffic and Safety Administration, as a part of the U.S. Department of Transportation (USDOT), is responsible for establishing additional vehicle standards and for revising existing standards.

  Since 1990, the fuel economy standard for new passenger cars has been 27.5 mpg. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 mpg. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is determined on the basis of each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the U.S. The Corporate Average Fuel Economy (CAFE) program, which is administered by EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. Based on the information generated under the CAFE program, the USDOT is authorized to assess penalties for noncompliance.

- Energy Policy Act of 1992 (EPAct)

  The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light duty AFVs capable of running on alternative

fuels each year. In addition, financial incentives are included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

- Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act provides for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

- Federal Climate Change Policy

According to the EPA, "the United States government has established a comprehensive policy to address climate change" that includes slowing the growth of emissions; strengthening science, technology, and institutions; and enhancing international cooperation. To implement this policy, "the Federal government is using voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science." The federal government's goal is to reduce the GHG intensity (a measurement of GHG emissions per unit of economic activity) of the American economy by 18 percent over the 10-year period from 2002 to 2012. In addition, the EPA administers multiple programs that encourage voluntary GHG reductions, including "ENERGY STAR", "Climate Leaders", and Methane Voluntary Programs. In addition, there are other adopted federal plans, policies, regulations, or laws directly regulating GHG emissions.

On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the FCAA:

- Endangerment Finding: The EPA Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO2), methane (CH4), nitrous oxide ($N_2O$), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride ($SF_6$)--in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The EPA Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action was a prerequisite to finalizing the EPA's proposed greenhouse gas emission standards for light-duty vehicles. On May 7, 2010, the EPA and the Secretary of Transportation promulgated a joint final rule representing the first substantive federal action to limit emissions of greenhouse gases ("GHGs"). 75 Fed. Reg. 25324 (May 7, 2010). The rule ("GHG Mobile Source Rule") establishes emissions standards for passenger cars and light trucks under section 202 of the Clean Air Act, 42 U.S.C. § 7521, and corporate average fuel efficiency ("CAFE") standards under the Energy Policy and Conservation Act. The standards apply to 2012 and later model year vehicles and will require that fuel efficiency increase and GHG emissions decrease through 2016, by which time the projected combined car and truck fleet will need to achieve the equivalent of 35.5 miles per gallon.

State

Various statewide and local initiatives to reduce California's contribution to GHG emissions have raised awareness that, even though the various contributors to, and consequences of, global climate change are not yet fully understood, global climate change is occurring. Every nation emits GHGs; therefore, global cooperation will be required to reduce the rate of GHG emissions, Currently no state regulations have been adopted in California that establish ambient air quality standards for GHGs; however, California has passed legislation directing CARB to develop actions to reduce GHG emissions.

- California Strategy to Reduce Petroleum Dependence (AB 2076)

  The strategy, *Reducing California's Petroleum Dependence*, was adopted by the CEC and CARB in 2003. The strategy recommends that California reduce on-road gasoline and diesel fuel demand to 15 percent below 2003 demand levels by 2020 and maintain that level for the foreseeable future; the Governor and Legislature work to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks, and sport utility vehicles (SUVs); and increase the use of non- petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

- Assembly Bill 1493 (Pavley)

  California Assembly Bill 1493 (Pavley) enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce greenhouse gases emitted by passenger vehicles and light duty trucks. Regulations adopted by CARB would apply to 2009 and later model year vehicles. CARB estimated that the regulation would reduce climate change emissions from light duty passenger vehicles by an estimated 18 percent in 2020 and by 27 percent in 2030 (AEP 2007). In 2005, the CARB requested a waiver from EPA to enforce the regulation, as required under the Clean Air Act. Despite the fact that no waiver had ever been denied over a 40-year period, the then Administrator of the EPA sent Governor Schwarzenegger a letter in December 2007, indicating he had denied the waiver. On March 6, 2008, the waiver denial was formally issued in the *Federal Register*. Governor Schwarzenegger and several other states immediately filed suit against the federal government to reverse that decision. On January 21, 2009, CARB requested that EPA reconsider denial of the waiver. EPA scheduled a re-hearing on March 5, 2009. On June 30, 2009, EPA granted a waiver of Clean Air Act preemption to California for its greenhouse gas emission standards for motor vehicles beginning with the 2009 model year.

- Executive Order S-3-05

  Governor Schwarzenegger established Executive Order S-3-05 in 2005. This Executive Order set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

  - By 2010, reduce GHG emissions to 2000 levels;
  - By 2020, reduce GHG emissions to 1990 levels; and
  - By 2050, reduce GHG emissions to 80 percent below 1990 levels.

  The executive order directed the Secretary of the California Environmental Protection Agency (Cal/EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the Governor and Legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat

these impacts. To comply with the Executive Order, the Cal/EPA Secretary created the Climate Action Team (CAT), made up of members from various State agencies and commissions. The team released its first report in March 2006, which proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through State incentive and regulatory programs.

- Assembly Bill 32 (California Global Warming Solutions Act of 2006)

  California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500 - 38599), which established regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and established a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished by enforcing a statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

  AB 32 requires CARB to adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrived at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state reduces GHG emissions sufficient to meet the cap. AB 32 also includes guidance on instituting emissions reductions in an economically efficient manner, along with conditions to ensure that businesses and consumers are not unfairly affected by the reductions. Using these criteria to reduce statewide GHG emissions to 1990 levels by 2020 would represent an approximate 25 to 30 percent reduction in current emissions levels. However, CARB has discretionary authority to seek greater reductions in more significant and growing GHG sectors, such as transportation, as compared to other sectors that are not anticipated to significantly increase emissions. Under AB 32, CARB must adopt regulations by January 1, 2011 to achieve reductions in GHGs to meet the 1990 emission cap by 2020.

- Assembly Bill 1007

  Assembly Bill 1007, (Pavley, Chapter 371, Statutes of 2005) directed the CEC to prepare a plan to increase the use of alternative fuels in California. As a result, the CEC prepared the State Alternative Fuels Plan in consultation with the state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

- Bioenergy Action Plan – Executive Order #S-06-06

  Executive Order #S-06-06 establishes targets for the use and production of biofuels and biopower and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The executive order establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20

percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The executive order also calls for the state to meet a target for use of biomass electricity.

- Executive Order S-1-07

Executive Order S-1-07, which was signed by Governor Schwarzenegger in 2007, proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020. This order also directs CARB to determine whether this Low Carbon Fuel Standard (LCFS) could be adopted as a discrete early-action measure to meet the mandates in AB 32. On April 23, 2009, CARB approved the proposed regulation to implement the LCFS. The LCFS will reduce GHG emissions from the transportation sector in California by about 16 MMT in 2020, and is designed to reduce California's dependence on petroleum, create a lasting market for clean transportation technology, as well as stimulate the production and use of alternative, low-carbon fuels. The LCFS is designed to provide a durable framework that uses market mechanisms to spur the steady introduction of lower carbon fuels. This framework establishes performance standards that fuel producers and importers must meet each year beginning in 2011. One standard is established for gasoline and the alternative fuels that can replace it. A second similar standard is set for diesel fuel and its replacements.

The standards are "back-loaded" meaning that more reductions are required in the last five years than the first five years. This schedule allows for the development of advanced fuels that are lower in carbon than today's fuels and the market penetration of plug-in hybrid electric vehicles, battery electric vehicles, fuel cell vehicles, and flexible fuel vehicles. It is anticipated that compliance with the LCFS will be based on a combination of strategies involving lower carbon fuels and more efficient, advanced-technology vehicles.

- Climate Action Program at Caltrans

The California Department of Transportation, Business, Transportation, and Housing Agency, prepared a Climate Action Program in response to new regulatory directives. The goal of the Climate Action Program is to promote clean and energy efficient transportation, and provide guidance for mainstreaming energy and climate change issues into business operations. The overall approach to lower fuel consumption and $CO_2$ from transportation is twofold: (1) reduce congestion and improve efficiency of transportation systems through smart land use, operational improvements, and Intelligent Transportation Systems; and (2) institutionalize energy efficiency and GHG emission reduction measures and technology into planning, project development, operations, and maintenance of transportation facilities, fleets, buildings, and equipment.

The reasoning underlying the Climate Action Program is the conclusion that "the most effective approach to addressing GHG reduction, in the short-to-medium term, is strong technology policy and market mechanisms to encourage innovations. Rapid development and availability of alternative fuels and vehicles, increased efficiency in new cars and trucks (light and heavy duty), and super clean fuels are the most direct approach to reducing GHG emissions from motor vehicles (emission performance standards and fuel or carbon performance standards)."

- Senate Bill 97

SB 97, signed August 2007 (Chapter 185, Statutes of 2007; PRC Sections 21083.05 and 21097), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to CARB guidelines for

the feasible mitigation of GHG emissions (or the effects of GHG emissions), as required by CEQA, by July 1, 2009. The Resources Agency was required to certify and adopt those guidelines by January 1, 2010. SB 97 also removed, both retroactively and prospectively, the legitimacy of litigation alleging inadequate CEQA analysis of effects of GHG emissions in the environmental review of projects funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006 or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1B or 1E). This provision was repealed by operation of law on January 1, 2010; at that time, any such projects that remain unapproved would no longer be protected against litigation claims of failure to adequately address climate change issues. In the future, this bill will only protect a handful of public agencies from CEQA challenges on certain types of projects, and only for a few years' time.

As set forth more fully below, in June 2008, OPR published a technical advisory recommending that CEQA lead agencies make a good-faith effort to estimate the quantity of GHG emissions that would be generated by a proposed project. Specifically, based on available information, CEQA lead agencies should estimate the emissions associated with project-related vehicular traffic, energy consumption, water usage, and construction activities to determine whether project-level or cumulative impacts could occur, and should mitigate the impacts where feasible (Governor's Office of Planning and Research, 2008). OPR requested CARB technical staff to recommend a method for setting CEQA thresholds of significance, as described in Section 15064.7 of *CEQA Guidelines* that will encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the State.

Senate Bill 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the State CEQA Guidelines for addressing greenhouse gas emissions. OPR prepared its recommended amendments to the State CEQA Guidelines to provide guidance to public agencies regarding the analysis and mitigation of greenhouse gas emissions and the effects of greenhouse gas emissions in draft CEQA documents. The Amendments became effective on March 18, 2010.

- Senate Bill 375

SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy (APS) that will prescribe land use allocation in that MPO's Regional Transportation Plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or APS for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding programmed after January 1, 2012.

This law also extends the minimum time period for the regional housing needs allocation cycle from five years to eight years for local governments located within an MPO that meets certain requirements. City or county land use policies (including general plans) are not required to be consistent with the Regional Transportation Plan (and associated SCS or APS). However, new provisions of CEQA would incentivize (through streamlining and other provisions) qualified projects that are consistent with an approved SCS or APS, categorized as "transit priority projects."

- California Climate Action Registry General Reporting Protocol

  The California Climate Action Registry (CCAR) was established in 2001 by SB 1771 and SB 527 (Chapter 1018, Statutes of 2000, and Chapter 769, Statutes of 2001, respectively) as a nonprofit voluntary registry for GHG emissions. The purpose of the CCAR is to help companies and organizations with operations in the State to establish GHG emissions baselines against which any future GHG emissions reduction requirements may be applied. CCAR has developed a general protocol and additional industry-specific protocols that provide guidance on how to inventory GHG emissions for participation in the registry.

  This protocol provides the principles, approach, methodology, and procedures required for participation in CCAR. It is designed to support the complete, transparent, and accurate reporting of an organization's GHG emissions inventory in a fashion that minimizes the reporting burden and maximizes the benefits associated with understanding the connection between fossil fuel consumption, electricity use, and GHG emissions in a quantifiable manner. The most updated version of this protocol was prepared in April 2008. All cabinet-level state agencies and departments have joined the CCAR. Membership in the CCAR means that all members of the Governor's Cabinet will be reporting their GHG emissions on a yearly basis.

- California Code of Regulations Title 24

  Although not originally intended to reduce greenhouse gas emissions, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The GHG emission inventory was based on Title 24 standards as of October 2005; however, Title 24 has been updated as of 2008. Energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in greenhouse gas emissions. Therefore, increased energy efficiency results in decreased greenhouse gas emissions.

- CAPCOA January 2008 CEQA and Climate Change

  In January 2008, the California Air Pollution Control Officers Association (CAPCOA) issued a "white paper" on evaluating GHG emissions under CEQA. The CAPCOA white paper strategies are not guidelines and have not been adopted by any regulatory agency; rather, the paper is offered as a resource to assist lead agencies in considering climate change in environmental documents.

  The CAPCOA white paper addresses what constitutes new emissions, how baseline emissions should be established, what should be considered cumulatively considerable under CEQA, what a business as usual (BAU) scenario means, and whether an analysis should include life-cycle emissions. The CAPCOA white paper also contains a Climate Change Significance Criteria Flow Chart that proposes a tiered approach to determining significance under CEQA. The flow chart would consider a proposed plan's impact to be less than significant if a General Plan for the project area exists that is in compliance with AB 32 (showing that GHG emissions for 2020 would be less than 1990 emissions for the plan area). The flow chart would consider a proposed project's impact to be significant unless one of the following can be demonstrated:

- The project is exempt under SB 97;
- The project is on the "Green List" (or a list of projects that are deemed a positive contribution to California efforts to reduce GHG emissions); A General Plan for the project area exists that is in compliance with AB 32; and/or
- GHG emissions are analyzed and mitigated to less-than-significant.

The CAPCOA white paper considers GHG impacts to be exclusively cumulative impacts.

- CARB Climate Change Proposed Scoping Plan

On December 11, 2008, CARB adopted its Scoping Plan, which functions as a roadmap of CARB's plans to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB has estimated that the 1990 GHG emissions level was 427 MMT net $CO_2e$ (CARB 2007b). CARB estimates that a reduction of 173 MMT net $CO_2e$ emissions below BAU would be required by 2020 to meet the 1990 levels (CARB, 2007b). This amounts to a 15 percent reduction from today's levels, and a 30 percent reduction from projected BAU levels in 2020 (CARB, 2008a).

CARB's Scoping Plan calculates 2020 BAU emissions as those expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors, i.e. transportation, electrical power, commercial and residential, industrial etc. CARB used three-year average emissions, by sector, for 2002-2004 to forecast emissions to 2020. At the time CARB's Scoping Plan process was initiated, 2004 was the most recent year for which actual data was available. The measures described in CARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32. CARB's Scoping Plan also breaks down the amount of GHG emissions reductions CARB recommends for each emissions sector of the state's GHG inventory. CARB's Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 $MMTCO_2E$);
- The LCFS (15.0 MMT $CO_2E$);
- Energy efficiency measures in buildings and appliances, and the widespread development of combined heat and power systems (26.3 MMT $CO_2E$); and
- A renewable portfolio standard for electricity production (21.3 MMT $CO_2E$).

CARB has identified a GHG reduction target of 5 MMT (of the 174 MMT total) for local land use changes (Table 2 of CARB's Scoping Plan), by Implementation of Reduction Strategy T-3 regarding Regional Transportation-Related GHG Targets. Additional land use reductions may be achieved as SB 375 is implemented. CARB's Scoping Plan states that successful implementation of the plan relies on local governments' land use, planning, and urban growth decisions because local governments have primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions. CARB further acknowledges that decisions on how land is used will have large effects on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. CARB's Scoping Plan does not include any direct discussion about GHG emissions generated by construction activity. The measures approved by the Board are being developed to be in place by 2012. CARB's Scoping Plan expands the list of nine Discrete Early Action Measures to a list of 39 Recommended Actions contained in Appendices C and E of CARB's Scoping Plan.

- OPR June 2008 Technical Advisory on CEQA and Climate Change

  SB 97 directs the Governor's Office of Planning and Research (OPR) to develop guidelines for the mitigation of GHG emissions or the effects of GHG emissions under CEQA. OPR is required to prepare and transmit these guidelines by July 1, 2009 for certification and adoption by January 1, 2010. In the interim, a June 2008 Technical Advisory provides informal guidance for public agencies as they address the issue of climate change in their CEQA documents. The June 2008 Technical Advisory offers recommendations for identifying GHG emissions, determining significance under CEQA, and mitigating impacts.

  The Advisory states that lead agencies under CEQA should develop their own approach to performing a climate change analysis for projects that generate GHG emissions. It also states that the lead agency should assess whether project emissions are individually or cumulatively significant, and implement strategies to avoid, reduce, or otherwise mitigate the impacts of those emissions when impacts are potentially significant. However, CARB's subsequently released draft thresholds acknowledge that the GHG analysis should be on a cumulative basis as GHG is a global phenomenon. Regional agencies can attempt to reduce GHG emissions through their planning processes. For example, regional transportation planning agencies can adopt plans and programs that address congestion relief and reduce VMT.

  In April 2009, OPR published its proposed revisions to CEQA to address GHG emissions. The amendments to CEQA indicate the following:

  - Climate action plans and other greenhouse gas reduction plans can be used to determine whether a project has significant impacts, based upon its compliance with the plan;

  - Local governments are encouraged to quantify the greenhouse gas emissions of proposed projects, noting that they have the freedom to select the models and methodologies that best meet their needs and circumstances. The section also recommends consideration of several qualitative factors that may be used in the determination of significance, such as the extent to which the given project complies with state, regional, or local GHG reduction plans and policies. OPR does not set or dictate specific thresholds of significance. Consistent with existing CEQA Guidelines, OPR encourages local governments to develop and publish their own thresholds of significance for GHG impacts assessment;

  - When creating their own thresholds of significance, local governments may consider the thresholds of significance adopted or recommended by other public agencies, or recommended by experts;

  - New amendments include guidelines for determining methods to mitigate the effects of greenhouse gas emissions can be found in Appendix F of the CEQA Guidelines;

  - OPR is clear to state that "to qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project; general compliance with a plan, by itself, is not mitigation;" and

  - OPR emphasizes the advantages of analyzing GHG impacts on an institutional, programmatic level. OPR therefore approves tiering of environmental analyses and highlights some benefits of such an approach.

- OPR January 8, 2009 Preliminary Draft CEQA Guideline Amendments for GHG Emissions

  In January 2009, OPR released preliminary proposed amendments to the *CEQA Guidelines* regarding GHG emissions. No significance threshold was included in the draft and the guidelines afford the customary

deference provided to lead agencies in their analysis and methodologies. The introductory preface to the amendments recommended that CARB set state-wide thresholds of significance. CARB released draft thresholds, as referenced below. OPR emphasized the necessity of having a consistent threshold available to analyze projects, and the analyses should be performed based on the best available information. For example, if a lead agency determines that GHGs may be generated by a proposed project, the agency is responsible for quantifying estimated GHG emissions by type and source. The guidelines provide the following recommendations for determining the significance of GHG emissions under draft Section 15064.4:

a. The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in Section 15064. A lead agency should make a good-faith effort, based on available information, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

    1. Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; or
    2. Rely on a qualitative analysis or performance based standards.

b. A lead agency may consider the following when assessing the significance of impacts from greenhouse gas emissions on the environment:

    1. The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting;
    2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
    3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. Such regulations or requirements must be adopted by the relevant public agency through a public review process and must include specific requirements that reduce or mitigate the project's incremental contribution of greenhouse gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

The amendments reiterated that the analysis of GHG impacts is cumulative. Section 15130 (f) provides that an EIR shall analyze GHG emissions resulting from a proposed project when the incremental contribution of those emissions may be cumulatively considerable. On April 13, 2009, OPR submitted its proposed amendments to the State *CEQA Guidelines* for GHG emissions to the Secretary for Natural Resources, as required by Senate Bill 97 (Chapter 185, 2007). The Natural Resources Agency conducted formal rulemaking in 2009, prior to certifying and adopting the amendments, as required by Senate Bill 97. On December 30, 2009, the Resources Agency approved the new GHG guidelines as amendments to the existing CEQA guidelines. The revised guidelines took effect on March 18, 2010.

- CARB Preliminary Draft Staff Proposal, October 2008

Separate from CARB's Scoping Plan approved in December 2008, CARB issued a Staff Proposal in October 2008, as its first step toward developing recommended statewide interim thresholds of significance for GHGs

that may be adopted by local agencies for their own use. The proposal does not attempt to address every type of project that may be subject to CEQA, but instead focuses on common project types that, collectively, are responsible for substantial GHG emissions – specifically, industrial, residential, and commercial projects. CARB is developing thresholds in these sectors to advance climate objectives, streamline project review, and encourage consistency and uniformity in the CEQA analysis of GHG emissions throughout the state. These draft thresholds are under revision in response to voluminous comments received. Finalized thresholds are expected sometime in 2010.

CARB staff's objective in this proposal is to develop a threshold of significance that would require the vast majority (approximately 90 percent statewide) of GHG emissions from new industrial projects to be subject to CEQA's requirement to impose feasible mitigation. CARB believes this can be accomplished with a threshold that allows small projects to be considered insignificant. CARB staff used existing data for the industrial sector to derive a proposed hybrid threshold. The threshold consists of a quantitative threshold of 7,000 metric tons of $CO_2E$ per year (MT/year $CO_2E$) for operational emissions (excluding transportation), and performance standards for construction and transportation emissions. These performance standards have not yet been developed.

Regional

- San Joaquin Valley Air Pollution Control District

To assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project specific greenhouse gas emissions (GHG) on global climate change, the San Joaquin Valley Air Pollution Control District (SJVAPCD) has adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*. The guidance and policy rely on the use of performance based standards, otherwise known as Best Performance Standards (BPS) to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA. Use of BPS is a method of streamlining the CEQA process of determining significance and is not a required emission reduction measure. Projects implementing BPS would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project would have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project related impacts on global climate change.

## Environmental Impacts, Mitigation Measures and Significance After Mitigation

### Criteria for Significance

As with any environmental impact, lead agencies must determine what constitutes a significant impact. In the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a "significant impact", individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice. The potential effects of a project may be individually limited but cumulatively significant. Lead agencies should not dismiss a proposed project's direct and/or indirect climate change impacts without careful consideration, supported by substantial evidence. Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment. CEQA authorizes reliance on previously approved plans and mitigation

programs that have adequately analyzed and mitigated GHG emissions to a less than significant level as a means to avoid or substantially reduce the cumulative impact of a project, encourages reliance on other Environmental Impact Reports that discuss greenhouse gases, and tiering from them. The preliminary draft amendments OPR issued included an introductory letter in which OPR indicated that it intends to rely on CARB to recommend a method for setting significance thresholds.

As described previously, the State Legislature and the global scientific community have found that global climate change poses significant adverse effects to the environment of California and the entire world. To mitigate these adverse effects the State Legislature enacted AB 32 which requires statewide GHG reductions to 1990 levels by 2020.

AB 32 and S-3-05 target the reduction of statewide emissions. It should be made clear that AB 32 and S-3-05 do not specify that the emissions reductions should be achieved through uniform reduction by geographic location or by emission source characteristics. Consistency with AB 32 will be used to assess significance with respect to greenhouse gas (GHG) emissions.

## Methodology

Climate change is a significant global cumulative impact that could also have a substantial effect on the natural environment of California and Madera County. The potential contribution of the 2011 RTP to this cumulative impact is discussed below.

State action on climate change is mandated by AB 32. MCTC, along with other regional planning agencies throughout the State, will be monitoring the progress of State agencies in developing approaches to address GHG emissions. As agreed-upon approaches for project-level CEQA analysis and for transportation planning are established, MCTC expects that climate change will be a key environmental consideration in future regional transportation planning. Both MCTC and responsible agencies implementing projects outlined in the 2011 RTP will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32.

Although the MPOs do not have land use authority to implement more compact and energy efficient land use, or limit growth, the eight San Joaquin Valley Councils of Governments or County Transportation Commissions are working on a significant project called the San Joaquin Valley Blueprint. The process has led to a preferred land use scenario separate from the local government general plan process. The agencies are now working collectively on a Blueprint Implementation Plan including a ToolKit that will be available to local agencies throughout the Valley as they review development projects and prepare land use plans and policies.

The SJVAPCD provides a methodology for addressing Greenhouse Gas Emission for Stationary Sources and for Development projects in *Addressing Greenhouse Gas Emissions under the California Environmental Quality Act*. The methodology relies on the use of performance based standards that would be applicable to projects that result in increased GHG emissions. The SJVAPCD notes that the use of performance based standards is not a method of mitigating emissions, rather it is a method of determining significance of project specific GHG emission impacts using established specifications or project design elements: Best Performance Standards (BPS).

In the SJVAPCD's *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* it states that projects implementing Best Performance Standards in accordance with the guidance would be determined to have a less than significant individual and cumulative impact on global climate change and would not require project specific quantification of GHG emissions. Projects exempt from the requirements of CEQA,

and projects complying with an approved GHG emission reduction plan or mitigation program would also be determined to have a less than significant individual or cumulative impact. Projects not implementing BPS would require quantification of project specific GHG emissions. To be determined to have a less than significant individual and cumulative impact on global climate changes, such projects must be determined to have reduced or mitigated GHG emissions by 29%, consistent with GHG emission reduction targets established in ARB's AB 32 Scoping Plan. Furthermore, quantification of GHG emissions would be expected for all projects for which the lead agency has determined that an Environmental Impact Report (EIR) is required, regardless of whether the project incorporates Best Performance Standards.

While this methodology is deemed appropriate for project-level analysis and could apply to the project-level analysis for individual RTP projects as they are designed and reviewed, it is not a methodology for program-level analysis. The SJVAPCD does not include a methodology recommendation for program-level analysis. Instead, this analysis quantifies the green house gas emission associated with the 2011 RTP. It should be noted that this GHG analysis does not look at GHG emission sources that are non-transportation related (i.e. industrial, commercial, etc.).

Neither CEQA nor the CEQA Guidelines mention or provide any methodology for analysis of "greenhouse gases," including $CO_2$, nor do they provide any significance thresholds. However, the air quality model used to predict emissions rates of the criteria pollutants (EMFAC) is capable of modeling the emissions of $CO_2$, and MCTC analyzed $CO_2$ emissions and fuel-consumption impacts from on-road travel resulting from the proposed RTP. The county-wide levels of GHGs associated with on-road vehicle travel are estimated based on the population estimates adopted by MCTC in 2009. These population estimates were developed considering the economic downturn.

The impact assessment for GHG emissions focuses on potential effects the project (2011 RTP) might have on GHG emissions within the Madera Region. The assessment is not site or individual improvement project-specific but is a regional analysis.

Impact 3.5.1 - Increased Transportation GHG Emissions May Contribute to Climate Change

The ultimate sources of increased transportation emissions in Madera County are population and employment growth, which will increase with or without projects referenced in the 2011 RTP. MCTC does not implement land use policy in Madera County; rather, this is under the jurisdiction of the County and the various cities. Decisions about the place, pace, and scale of growth and development are reflected in the general plans and project approvals adopted by the local agencies. The 2011 RTP is designed to complement, rather than change, the plans adopted by the local agencies. Thus, the ultimate effect of the 2011 RTP on transportation emissions is not to increase the amount of travel per se, but rather to influence where and how travel occurs within and through the County.

MCTC's ability to address and mitigate climate change impacts is limited primarily to policy and funding decisions related to planned roadway and alternative transportation improvements. As described above, the combustion of fossil fuels during vehicle operations is one of the primary sources of GHG emissions in California. GHG emissions also result from the carbon dioxide, methane, and nitrous oxide that are released during the combustion of gasoline and diesel fuel in construction equipment, vehicles, buses, trucks, and trains; and the use of natural gas to power transit buses and other vehicles. As discussed previously, historical and current global GHG emissions are known by the State and the global scientific community to be causing global climate change, and future increases in GHG emissions associated with the proposed RTP could exacerbate climate change and contribute to the significant adverse environmental effects described previously. Furthermore, increased GHG emissions associated with the proposed RTP could impact implementation of the State's mandatory requirement under AB 32 to reduce statewide GHG emissions to 1990 levels by 2020.

## CO2 Emissions

Emissions associated with the 2011 RTP can be divided into two categories: passenger transportation associated with light duty trucks and automobiles (LDTA), and goods movement by truck. Consistency with AB 32 will be evaluated by reviewing the Scoping Plan[1] and evaluating whether the actions in the 2011 RTP will in any way impede implementation of the Scoping Plan. This will be done individually for the LDTA category and the Goods Movement category. The Goods Movement category within the 2011 RTP comprises emissions associated with goods movement in trucks. The Goods Movement category in the Scoping Plan also includes transportation of goods by vessels, but those categories are not impacted by the 2011 RTP.

- Light Duty Trucks and Autos: For LDTA, there are three measures listed in the Scoping Plan. They are:
  1. Low Carbon Fuel Standard (LCFS)
  2. Pavley Greenhouse Gas Vehicle Standards
  3. Regional Transportation-Related GHG Targets

  The 2011 RTP will not impact the implementation of the LCFS and the Pavley fuel efficiency standards. The Regional Transportation-Related GHG targets are implemented by SB 375, which establishes mechanisms for the development of regional targets for reducing LDTA greenhouse gas emissions. Through the SB 375 process, regions will work to integrate development patterns and the transportation network to achieve the reduction of greenhouse gas emissions while meeting housing needs and other regional planning objectives.

  SB 375 requires CARB to develop, in consultation with MPOs, passenger vehicle greenhouse gas emissions reduction targets for 2020 and 2035 by September 30, 2010. The first RTP Update that will be subject to SB 375 for MCTC is the 2014 RTP. However, MCTC has evaluated the 2011 RTP for consistency with the SB 375 draft targets for the purposes of evaluating significance for GHG emissions.

  Consistent with the draft SB 375 targets published by CARB, and CEQA practice, the baseline is intended to be representative of today's conditions. Due to the recession that is currently impacting the economy, and, as a result, traffic volumes, the Regional Targets Advisory Committee (RTAC) recommended that the baseline year be set to a year that was representative of conditions before the recession. Accordingly, 2005 was chosen as a baseline year that is representative of conditions today in absence of the economic downturn. That year is used as the baseline in the SB 375 draft targets, and is used in this document.

  SB 375 targets for each region were published by the CARB on June 30th, 2010. The Draft GHG target for MPOs within the San Joaquin Valley were set to between 1% and 7% of the GHG emissions relative to 2005 exclusive of emission reductions expected from Pavley GHG Vehicle Standards and the LCFS. $CO_2$ emissions were projected for 2005, 2020, and 2035 using EMFAC 2007 Version 2.3 model.

[1] http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf

## TABLE 3-31
## Future VMT and GHG Emissions

| | lbs Per Capita GHG Emissions | % Reduction from 2005 | VMT Per Capita | % Reduction from 2005 |
|---|---|---|---|---|
| 2005 | 24.6 | -- | 31.152552 | -- |
| 2020 | 26.8 | -9.28% | 32.6805319 | -4.90% |
| 2035 | 25.3 | -2.87% | 29.7813599 | 4.40% |

Source: MCTC, EMFAC 2007 Version 2.3 model.

As shown in Table 3-31, the GHG emissions for 2020 and 2035 are between 9.3% (2020) and 2.9% (2035) above the GHG emissions level of 2005, exclusive of the savings expected from the Pavley GHG Vehicle Standards and the LCFS. Table 3-31 also shows that VMT increases on a per capita basis by 4.9% in 2020 and decreases by 4.4% in 2035. The increase in 2020 is directly correlated to the population growth in the region and increased VMT traveling below 25 mph (the speed range at which GHG emissions production is the highest from light duty autos and trucks). In 2020 and 2035 population growth outpaces transportation improvements resulting in an overall increase in GHG emissions on a per capita basis relative to 2005 in 2020 and 2035 respectively. Year 2020 and 2035 emissions reflect an increase in per capita emissions from 2005 and therefore do not demonstrate consistency with AB 32.

- Goods Movement: The Goods Movement category includes the following measures in the Scoping Plan:
  1. Ship Electrification at Ports
  2. System-Wide Efficiency Improvements
  3. Heavy-Duty Vehicle Greenhouse Gas Emission Reduction (Aerodynamic Efficiency)
  4. Medium- and Heavy-Duty Vehicle Hybridization

  Medium Duty and Heavy Duty on road goods movement emissions were quantified using the MCTC travel demand model and EMFAC 2007. GHG emissions results for medium and heavy duty trucks can be found in Table 3-32.

## TABLE 3-32
## GHG Emissions (Goods Movement)
## (Tons/Day)

| | 2005 | 2020 | 2035 |
|---|---|---|---|
| Medium Duty Trucks | 510 | 800 | 1040 |
| Heavy Duty Trucks | 1130 | 1990 | 2480 |
| Total | 1640 | 2790 | 3520 |

Sources: MCTC, Trimms 2.0 (2010), EMFAC 2007 Version 2.3 model.

Although GHG emissions appear to increase from medium duty and heavy duty trucks, these emissions calculations do not reflect emissions reductions attributable to the Goods Movement Emissions Reduction Plan or non-regulatory reductions achieved from the implementation of the Goods Movement portion of Proposition 1B (2006). While non-regulatory measures and measures not approved at the time of the release of EMFAC 2007 cannot be accurately reflected in the emissions model, implementation of the Goods Movement Emissions Reduction Plan and the 2007 State Implementation Plan will lead to emissions reductions consistent with the AB32 scoping plan for the goods movement sector. The 2011 RTP does not hinder the implementation of these plans, and therefore, emissions reductions are anticipated to be consistent with the goals of AB 32.

It is also important to note that emissions estimates contained within ARB's Goods Movement Emissions Reductions Plan from the goods movement sectors continue to grow in the future. As indicated in the Goods Movement Reductions Plan, regulatory actions are, and will remain the framework for emissions reductions. The 2011 RTP does not interfere with the implementation of ARB regulatory actions.

The Goods Movement Emissions Reduction Plan (required by Proposition 1B) and the 2007 State Implementation Plan contain numerous measures designed to reduce the public health impact of goods movement in California. Currently the San Joaquin Valley Air Pollution Control District has been awarded Prop 1B funding for diesel engine retrofits. Emissions reductions resulting from these projects are outside the scope of the RTP and therefore have not been quantified. Significant reductions however, are not expected.

- Energy Consumption

Vehicle fuel consumption was projected from a baseline year of 2011 through the RTP build out year of 2035 using EMFAC 2007 Version 2.3 model. Table 3-33 quantifies the projected vehicle fuel consumption in gallons per day using EMFAC data. The total fuel consumption is projected to increase from 310,330 gallons in 2005 to 666,800 gallons in 2035, representing an increase of 115 percent over 30 years. The largest increase is projected in gasoline fuel with a 119 percent increase over 30 years, while diesel consumption is projected to decrease by 108 percent during the same time. It should be noted that the fuel consumption estimate is an overestimate, as "Pavely and Low Carbon Fuels" will have an impact on fleet efficiency.

## TABLE 3-33
## Madera County Vehicle Fuel Consumption (2011 through 2035)

| GHG Emission Data | | | |
|---|---|---|---|
| Year | 2005 | 2020 | 2035 |
| Gasoline (gallons) | 203,130 | 338,420 | 444,100 |
| Diesel (gallons) | 107,200 | 180,080 | 222,700 |
| Total Fuel (gal/day) | 310,330 | 518,500 | 666,800 |

Sources: MCTC, EMFAC 2007 Version 2.3 (2010).

The fuel consumption outputs reflect an increasing trend of fuel consumption per capita. This analysis shows that even with implementation of the various multi-modal improvements under the 2011 RTP, including

bike/pedestrian facilities, transit infrastructure/service, etc., VMT and fuel consumption will increase. Not reflected in the emission outputs is the potential for GHG benefits as a result of the MCTC's Smart Growth incentives and as a result of a Sustainable Communities Strategy that MCTC will prepare in accordance with SB 375, with the next RTP update.

- Population Growth

Between 2000 and 2010, Madera County and its incorporated cities have experienced a wide range of development and population growth. Over the next 25 years, the Madera region will continue to grow rapidly. MCTC projects a total employment of 94,480 for Madera County by 2035. This will accompany an increase in population in the County of 138,119 persons between 2010 and 2035, an increase of 79 percent over the 25-year period. In 2035, the estimated total population for Madera County is 313,250 persons. Table 3-34 presents the population projections from 2000 through 2035. Population projections for Madera County vary between sources; however, the MCTC Model projection is considered the most appropriate population estimate for purposes of the 2011 RTP; specifically, the MCTC Model projection considers the economic downturn affecting Madera County. The California Department of Finance (DOF) projection has not been adjusted to reflect the downturn.

TABLE 3-14
POPULATION PROJECTIONS (2010 - 2035)

| Analysis Area | 2010 Pop. | 2010 Households | 2010 Employ. | 2020 Pop. | 2020 Households | 2020 Employ. | 2035 Pop. | 2035 Households | 2035 Employ. |
|---|---|---|---|---|---|---|---|---|---|
| Rural Area | 8,479 | 2,645 | 2,463 | 10,873 | 3,391 | 3,155 | 15,167 | 4,731 | 4,402 |
| Mountain Area | 57,337 | 17,884 | 13,218 | 73,521 | 22,932 | 16,947 | 102,555 | 31,989 | 23,640 |
| Madera Ranchos Area | 17,059 | 5,321 | 5,969 | 21,875 | 6,823 | 7,654 | 30,513 | 9,518 | 10,676 |
| Chowchilla | 15,117 | 4,715 | 4,593 | 19,384 | 6,047 | 5,889 | 27,039 | 8,434 | 8,215 |
| Madera | 77,139 | 24,061 | 26,583 | 98,914 | 30,853 | 34,086 | 137,975 | 43,037 | 47,548 |
| Total | 175,131 | 54,626 | 52,826 | 224,567 | 70,046 | 67,731 | 313,250 | 97,707 | 94,480 |

Source: Madera County Transportation Commission, 2010

GHG emissions associated with implementation of the proposed RTP are primarily related to a projected increase in Countywide VMT as a result of projected growth in the unincorporated areas of Madera County and the incorporated cities. As described previously, MCTC does not have land use authority within the County or the incorporated Cities. Therefore, MCTC's ability to mitigate for climate change impacts in this EIR and the 2011 RTP update is largely limited to Smart Growth Incentives, a focus on the Sustainable Communities Strategy for the 2014 RTP Update, and improvements in alternative modes of transportation that may result in decreases in VMT per capita throughout the County.

- Greenhouse Gas Reduction

MCTC has used the best available information to determine whether the proposed RTP is consistent with the State's achievement of the AB 32 GHG emission reductions. In light of the uncertainty in the regulatory and technological environment, the 2011 RTP incorporates all feasible mitigation measures, which are identified below, to reduce the impacts of the proposed project on global climate change. This EIR also includes a requirement that RTP projects incorporate the SJVAPCD's Best Performance Standards for reducing GHG. The RTP has also incorporated numerous policies, action items and funding priorities to develop and improve alternative modes of transportation throughout the County and the incorporated cities in Madera County.

The measures included in the RTP are consistent with the GHG mitigation approaches outlined by the California Attorney General's Office in the May 21, 2008 report titled: *The California Environmental Quality Act, Addressing Global Warming Impacts at the Local Agency Level: Global Warming Measures.* The mitigation measures outlined below, and the policies and action items included in the 2011 RTP update are also consistent with the May 29, 2008 Addendum to the 2007 Regional Transportation Guidelines prepared by the California Transportation Commission: *Addressing Climate Change and Greenhouse Gas Emissions During the RTP Process.*

- Madera County Regional Blueprint Process

MCTC and the other seven counties in the San Joaquin Valley have developed individual Blueprints for their counties and have also completed a coordinated effort to develop the San Joaquin Valley Blueprint. All eight counties are located in the same Air Basin (San Joaquin Valley Air Basin) and received the grant for Blueprint development from the State of California. The Blueprint programs in California are designed to address the three "E"s of Regional Blueprint Planning; that is, Energy Efficiency, the Environment, and Economic Development. The Madera County Regional Blueprint identifies a preferred land use scenario and transportation system for Madera County considering the application of alternative growth strategies. The Plan also identifies a vision, values, goals, objectives, and implementing strategies that can be planned by MCTC and implemented by local agencies within the County to reduce vehicle trips, vehicle miles traveled (VMT), and support increased walkability, passenger rail, public transit systems, and bicycling.

The primary purpose of Madera County Regional Blueprint is to establish a coordinated long-range (year 2050) regional vision between transportation, land use, and the environment from an overall quality of life perspective.

As a vision, the Blueprint recognizes that economic, environmental, and social issues are interdependent and only integrated approaches will effect needed changes. The location of jobs, housing, and commerce affects the transportation system, the nature of the transportation system affects air quality, and air quality affects health outcomes.

Below are the three key products developed during the Blueprint process:

Guiding Principles: The San Joaquin Valley Blueprint Smart Growth Principles were developed based, primarily, on citizen-identified visions, values, and aspirations for Madera County and other counties throughout the Valley from the Phase I workshops. In turn, the Blueprint Smart Growth Principles provided the foundation upon which the Phase II Blueprint Vision choices were built.

The adopted 12 Smart Growth Principles are:

1. Create a range of housing opportunities and choices
2. Create walkable neighborhoods
3. Encourage community and stakeholder collaboration
4. Foster distinctive, attractive communities with a strong sense of place
5. Make development decisions predictable, fair, and cost-effective
6. Mix land uses
7. Preserve open space, farmland, natural beauty, and critical environmental areas
8. Provide a variety of transportation choices
9. Strengthen and direct development towards existing communities
10. Take advantage of compact building design

11. Enhance the economic vitality of the region
12. Support actions that encourage environmental resource management

### Preferred 2050 Regional Blueprint Scenario

The Blueprint vision in Madera County is: In the future Madera County will be composed of unique cities, communities, and a diverse population that is supported by a vibrant economy, a healthy and sustainable environment, and public safety. This will be accomplished through a land use and transportation system that connects the region and preserves agricultural and natural resources. The values and guiding principles support the main ideas in the vision statement. Madera County values environmental health and sustainability, a vibrant economy, public safety, world-class education, transportation options, housing choices, the worth of all people, aesthetic quality, cultural richness, and positive image of the communities. MCTC developed principles that: preserve open space, recreation areas, farmland, and water resources; provide transportation options; foster distinct, attractive, and safe places to live; encourage a globally competitive market; create housing opportunities and choices; and provide educational, health, and cultural amenities.

The MCTC preferred growth scenario is referred to as the "low change" growth scenario. It was developed as a variation on the status quo scenario and reflects the county's desire to implement some aspects of smart growth without radically changing housing densities or transportation mode choices. Key features of the preferred scenario include expanding SR 65 through the eastern county, expanding SR 152 to intersect with the future alignment of SR 65, expanding transit to increase connectivity, and reducing residential lot sizes by 15 to 20 percent. Overall, the MCTC preferred scenario has an average residential density of 4.7 dwelling units per acre and a housing mix of 11.5 percent low-density, 68.5 percent medium-density, and 20 percent high-density.

The next step is for the eight counties to coordinate development of a Blueprint Implementation Plan. The purpose of the Plan is to create a detailed document that will act as a guide to direct Blueprint implementation in the Valley. The Implementation Plan will detail current Valleywide goals and objectives, provide implementation actions to address the twelve Smart Growth Principles, and provide recommendations for the future. The intent of the Implementation Plan is to facilitate better tools for decision making by assisting local governments, tracking progress, and providing information to update local general plans.

## ♦ Existing Transit Systems in Madera County

The Madera County Transportation Commission, working closely with local and regional bus and rail transit operators, continues to improve public transportation across Madera County. Funding for transit operations come primarily from Federal Transit Administration (FTA) grant programs, State Transportation Development Act (TDA), State Transit Assistance, and Measure T.

Transit operations in Madera County include:

- Madera Area Express
- Madera Dial-A-Ride
- Chowchilla Area Transit Express
- Madera County Connection

Public transit has been enhanced in the 2011 RTP compared to the current RTP (adopted in 2007). Such improvements will help mitigate expected increases in emissions resulting from increased population and employment and the impact of planned growth and development on the regional transportation system. The project improvements are expected to slightly reduce VMT and vehicle trips and as a result, GHG emissions.

Madera County has made significant progress in addressing many public transit needs throughout the Region. MCTC's "Unmet Transit Needs" process has determined that transit services within the Madera County are meeting the reasonable transit needs of the public. These transit systems provide vital transportation services and enhancing the overall quality of life for residents throughout the County. Planned transit improvements over the 25 year timeframe of the RTP total $107.8 million.

The RTP projects a 15 percent increase in funding for transit service improvements every five years through FY 2035, above and beyond projected capital improvements. Long-term commitments will evolve through the planning development process. This process, ultimately, will lead to increased levels of transit services, as warranted.

- Action Plans Intended to Reduce GHG

The RTP includes numerous action plans that are intended to promote the use of public transportation, rail, and non-motorized systems. Chapter 4, Action Element provides numerous tables that show the planned facilities under each of these alternative modes. This includes approximately $108 million available to Transit, and $84 million available to other modes including non-motorized (bicycle and pedestrian), alternative-fuel vehicle projects, and others.

- SJVAPCD Best Performance Standards (BPS)

The SJVAPCD published *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* in December 2009. This guidance document defines Best Performance Standards (BPS) as the most effective achieved in-practice means of reducing or limiting GHG emissions from a GHG emissions source. The document includes BPSs for both traditional stationary source projects, and development projects. For stationary sources, BPSs includes equipment type, equipment design, and operational and maintenance practices for the identified service, operation, or emissions unit class and category. For development projects, BPS focuses on measures that improve energy efficiency and those that reduce vehicle miles traveled.

Mitigation Measures

Both MCTC and responsible agencies implementing projects outlined in the 2011 RTP will be required to adhere to any future applicable mandatory regulations regarding global warming resulting from the passage of AB 32 and AB 1493, but the exact character of such future implementing strategies is not known at this time. MCTC and the local agencies will quantify GHG emissions consistent with Guidelines and requirements developed by CARB.

The following mitigation measures are intended to address regional and project-level impacts, as appropriate. For project-level impacts, the individual improvement project proponent or local jurisdiction will be responsible for ensuring adherence to the mitigation measures. In addition, a number of mitigation measures are included in Section 3.3 of the Draft SEIR to address criteria emissions.

- Through implementation of the Regional Blueprint and coordination with implementation agencies, the following mitigation measures will result in reduced GHG emissions:

  - Develop land use patterns, which encourage people to walk, bicycle, or use public transit for a significant number of their daily trips

  - Use comprehensive community plans and specific plans to ensure development is consistent and well connected by alternative transportation modes
  - Adopt transit-oriented or pedestrian-oriented design strategies and select areas appropriate for these designs in the general plan
  - Support higher density development in proximity to commonly used services and transportation facilities
- Develop in a compact, efficient form to reduce vehicle miles traveled and to improve the efficiency of alternatives to the automobile
  - Use the control of public services to direct development to the most appropriate locations
  - Promote infill of vacant land and redevelopment sites
- Encourage project site designs and subdivision street and lot designs that support walking, bicycling, and transit use
  - Adopt design guidelines and standards promoting plans that encourage alternative transportation modes
  - Require certain sites to be created to allow convenient access by transit, bicycle, and walking

◆ Prior to or in conjunction with the adoption of the proposed 2014 RTP, MCTC will develop a GHG Emissions Reduction Plan that includes the following:

- General discussion of the potential impacts that GCC poses to the Madera County region, with particular focus on potential impacts related to RTP facilities, to the extent that such information is available
- A baseline inventory of total GHG emissions directly and indirectly from transportation in the County that currently exist, and review of potential targets and timelines for achieving GHG reductions
- Development of feasible GHG emissions reduction measures and strategies to achieve reductions in RTP GHG emissions. Such reduction measures may include construction of new transportation projects, modification of existing facilities or services, incentive or funding programs, pricing strategies, regulations or any other actions that reduce GHG emissions associated with RTP activities
- State protocols and GHG emissions inventory mechanisms are necessary tools to track and monitor GHG emissions at the local level. MCTC and member agencies must determine, in cooperation with the state, the solutions that will best minimize its potential risks and maximize its potential benefits

◆ Intelligent Transportation

- Developing an Intelligent Transportation Systems strategy to implement the Integrated Performance Management Systems Network that will:
  - Interconnect the region's local transportation management centers, including the use of cameras, and computer hardware and software to detect and clear accidents
  - Use technology to improve traffic signal timing in order to optimize traffic flow and transit service
  - Involve new equipment to improve on-time transit performance and provide real-time transit information at stops and stations

◆ Create Alternative Fuel Vehicle and Infrastructure Toolkit for Local Governments

MCTC will develop an Alternative Fuel Vehicle (AFV) and Infrastructure Toolkit for member agencies that will contain best practices related to ordinances, analytical tools, financing opportunities, codes, and standards related to reducing GHG emissions. MCTC will identify the alternative fuel vehicle(s) (e.g. neighborhood electric vehicles) and alternative fuel infrastructure with the potential to result in the greatest GHG emission reductions.

MCTC will conduct a public education program for local governments and other public agencies, as appropriate to encourage the use of alternative fuel vehicles and infrastructure.

MCTC will work with its member agencies to increase the number of AFVs (i.e., vehicles not powered strictly by gasoline or diesel fuel) both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, street sweepers, and curbside recyclable haulers. Such AFVs shall have GHG emissions at least 10 percent lower than comparable gasoline- or diesel-powered vehicles. The Alternative Fuel Vehicle and Infrastructure Toolkit described above will include best practices strategies to aid in the transformation of municipally owned or contracted fleets, including vehicle fleets operated and/or funded, at least in part by MCTC.

- Adopt Transportation Pricing Policy

MCTC will prepare an analysis on the impacts and the viability of using pricing policies with the transit system and selected portions of the road network to encourage people to drive less and use transit, walking, and bicycling modes more. This study will identify strategies to reduce GHG emissions that will include, but are not limited to, free or reduced transit fares during "spare the air" days; fare-free zones on the transit system; transit vouchers; days on which transit is free; congestion pricing options for portions of the road system, such as tolls on freeways and highways; and congestion-pricing to enter certain high-traffic areas served by public transit (e.g. downtown areas). MCTC shall adopt a transportation pricing policy based upon these strategies, and shall conduct seminars with local government staff, planning commissioners and elected officials and members of the private development, planning, engineering and design communities to disseminate these strategies.

- Create a Public Education Program on Individual Transportation Behavior and Climate Change

In conjunction with key partners such as local air districts, public utility providers, area chambers of commerce and others, MCTC will create a public information program to educate the public about the connection between individual transportation behavior and global climate change, including transportation behavior modifications the public can make to reduce their GHG emissions over time. MCTC shall include information on its website that is focused on global climate change. The website shall identify actions the public can take to reduce their carbon footprint, and provide web links to sources of information designed to promote alternative mode use (carpools, vanpools, public transit, bicycling, walking, telecommuting) and other travel demand management strategies.

- Provide Funding for Workshop on Global Climate Change for Local Government Officials and Create GHG Emissions Reduction Strategies Toolkit

MCTC will provide funding for a workshop on global climate change for local government officials that will focus on practical techniques that local governments can implement to reduce greenhouse gas emissions at the city and county level. Workshop topics shall include, but are not limited to the following:

  - The basic science behind climate change and its effects on the Madera County Region
  - Addressing the California Environmental Quality Act (CEQA) and the effects of AB 32
  - What cities and counties are doing to address climate change and CEQA
  - Cost effective actions cities can take to reduce greenhouse emissions
  - Actions being taken in the Madera County area to advance and support innovative "green" business

MCTC in conjunction with other key partners, shall produce a toolkit for local governments to use to take effective actions to reduce greenhouse gas emissions over time. The toolkit will incorporate recommendations

by the workshop participants to identify which issues are important for the region and the tools and resources they would like to have available to reduce greenhouse emissions .

- Adopt Safe Routes to School Policy and Implement Pilot Program and Conduct Workshop with Cities, Counties and School Districts to identify other opportunities for collaboration that may reduce Greenhouse Emissions

- Continue to Work with Member Agencies Regarding the Safe Routes to School (SRTS) Policy and Program and Conduct Workshop with Cities, the County, and School Districts to identify other opportunities for collaboration that may reduce GHG emissions.

  Continue to work with local agencies on development of Safe Routes to Schools (SRTS) policies and programs to promote the practice of safe bicycling and walking to and from schools throughout the region in order to reduce traffic congestion, improve air quality, and enhance neighborhood safety. There are both federal and state funding programs for SRTS. As a regional agency, MCTC is an eligible applicant under the federal program for both infrastructure and non-infrastructure projects. Under the state program, only cities and counties are eligible applicants for infrastructure projects only. (Caltrans, 2007). With the passage of the SRTS bill (AB 1475), a "one-third" distribution formula for federal safety funds (to be allocated in equal amounts to: state highways, local roads, and SRTS construction programs) was established.

  The federal SRTS was authorized by Section 1404 of the *SAFETEA-LU (the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users*). The State-legislated SRTS program (SR2S) is contained in Streets & Highways Code Section 2330-2334. MCTC shall continue to encourage its member agencies to apply for funds available through the State Highway Safety Improvement fund for eligible infrastructure projects in order to improve bicycle and pedestrian safety for school children.

  In addition, MCTC will host a regional workshop as part of the SB 375 effort [Sustainable Communities Strategy (SCS)] for the cities, the County, school districts, and transit operators within the region to identify other potential opportunities for collaboration that would reduce GHG impacts. At a minimum, the issues discussed should include the findings from the SRTS activities described above, opportunities to increase the number of students with bus or other transit options to get to and from school, and integrating school siting practices with goals of promoting walkable neighborhoods with a wide range of easily accessible services.

- Report on MCTC's own GHG Impacts

  MCTC should report on its own GHG emissions and track its progress in reducing GHG emissions.

- Project level environmental documents shall analyze construction and maintenance project Greenhouse Gas (GHG) emissions.

- Develop a Sustainable Communities Strategy (SCS) in compliance with SB 375 prior to the adoption of the next RTP

  1. Develop a Sustainable Communities Strategy (SCS) in compliance with SB 375 prior to the adoption of the next RTP. Within one year from adoption of the RTP, MCTC will undertake the following: MCTC will work with the local jurisdictions and transit operators within Madera County to develop countywide land use scenarios that reflect different population distributions and land use (mix and density),

and multimodal transportation strategies, utilizing the MCTC regional travel demand model in coordination with a rapid fire tool similar to I-Places. Scenarios will be developed to identify the alternatives that demonstrate potential reductions in vehicle miles traveled (VMT) and total vehicle miles; GHG, conventional and toxic air pollutant emissions; long distance commute trips; and other such factors discussed in the RTP and EIR as the COG Board thinks advisable consistent with state and federal law.

Coordination with local agencies currently in the development process of local climate action plans or general plan updates are important for consistency purposes. The schedule identified to develop alternative scenarios should be flexible to allow incorporation of these planning efforts into the regional scenario development effort.

Public participation in this process is important to MCTC and will be incorporated into the scenario development process identified above.

2. Upon completion of the scenario development exercise above, MCTC will use the data from this exercise as well as public input to develop a multimodal transportation strategy that when combined with land use demonstrates the most potential to meet the following goals: reductions in vehicle miles traveled (VMT) and total vehicle miles; GHG, conventional and toxic air pollutant emissions; long distance commute trips; and other such factors discussed in the RTP and EIR as the COG Board thinks advisable consistent with state and federal law. This strategy may be one of the scenarios developed in 1 above or may be a hybrid scenario.

3. The resulting multimodal transportation strategy from 2 above will be presented to the MCTC Board in 2013 as an update to the 2011 RTP, for approval or disapproval by the Board, subject to all applicable federal and state laws.

Significance After Mitigation

Madera County is estimated to grow in population by an estimated 138,119 persons between 2010 and 2035. MCTC has used the best available information to determine whether the 2011 RTP is consistent with the State's achievement of the AB 32 GHG emission reductions. Implementation of the mitigation measures described above will assist in the reduction of per capita VMT levels throughout Madera County, which will assist in meeting the stated goals of AB 32. The 2011 RTP has included numerous projects, action items, funding priorities, and programs to develop and improve alternative modes of transportation throughout the County and MCTC continues to coordinate with local land use agencies to assist in the development of plans and policies aimed at reducing VMT.

MCTC responds to congestion through the investment in roadway capacity increasing measures once all reasonable non-capacity measures have been employed. The 2011 RTP includes approximately $107 million available to Transit, and $84 million and $84 million available to other modes including non-motorized (bicycle and pedestrian), alternative-fuel vehicle projects, and others.

The Madera County Regional Blueprint has been prepared to establish a coordinated long-range (year 2050) regional vision between transportation, land use, and the environment from an overall quality of life perspective. The completion of the Regional Blueprint serves as a starting point for MCTC as they begin development of a Sustainable Communities Strategy in accordance with the requirements of SB 375. In developing the Sustainable Communities Strategy, MCTC will consider the Blueprint Regional Vision Statement, the Blueprint Guiding Principles, and the Blueprint Performance Measures & Indicators (PMIs) that were developed for the Regional Blueprint. In addition, they

will utilize the best available tools and techniques to develop a strategy that contributes to the State's achievement of the AB 32 GHG emission reductions.

Mitigation measures are presented above that will reduce GHG emissions to the extent feasible considering requirements set forth in AB 32. Such measures will also assist in the promotion and implementation of Smart Growth and sustainable planning practices by the cities and the County. While such feasible mitigation measures will reduce GHG impacts, fuel consumption, goods movement GHG emissions, and on-road GHG emissions are estimated to increase on a per capita basis between 2005 and 2035. Even though all feasible mitigation measures have been identified to reduce the level of impact, impacts ***cannot be mitigated to a less than significant level***.