

APPENDIX 4-1

ADOT RELOCATION ASSISTANCE PROGRAM POLICY

**Appendix 4-1**, *ADOT Relocation Assistance Program Policy*, provides the full ADOT policy on relocation assistance. This policy defines how ADOT complies with Title VI of the Civil Rights Act of 1964, which prohibits any action undertaken by ADOT to treat any person or group unfairly on the grounds of race, color, national origin, sex, age, or disability. Also included are two brochures that explain 1) your rights and benefits as a displaced person under the federal relocation assistance program; and 2) the process for acquiring real property for federal and federal-aid programs and projects.

POLICY

The Arizona Department of Transportation assures full compliance with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. Title VI of the Civil Rights Act requires that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity of the Arizona Department of Transportation. Related nondiscrimination statutes added sex, age, and disability. A program or activity is defined as all of the operations of a department or agency of a State government.

ASSURANCES

The State of Arizona (hereinafter referred to as the “Recipient”) HEREBY AGREES THAT as a condition to receiving any Federal financial assistance from the Department of Transportation it will comply with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d-42 U.S.C. 2000d-4 (hereinafter referred to as the Act), and all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-Assisted Programs of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964 (hereinafter referred to as the Regulations) and other pertinent directives, no person in the United States shall, on the grounds of race, color, national origin, gender, age, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity, and HEREBY GIVES ASSURANCE THAT it will promptly take any measures necessary to effectuate this agreement. This assurance is required by subsection 21.7 (a)(1) of the Regulations, a copy of which is attached.

More specifically and without limiting the above general assurance, the Arizona DOT hereby gives the following specific assurances with to its Federal-aid Highway Program.

1. That the Arizona DOT agrees that each “program” and each “facility” as defined in subsections 21.23(e) and 21.23 (b) of the Regulations, will be (with regard to a “program”) conducted, or will be (with regard to a “facility”) operated in compliance with all requirements imposed by, or pursuant to, the Regulations.
2. That the Arizona DOT shall insert the following notifications in all solicitations for bids for work or material subject to the Regulations

and made in connection with all Federal-aid Highway Program and, in adapted form in all proposals for negotiated agreements:

The State of Arizona, in accordance with Title VI of the Civil Rights Act of 1964, 78 Stat. 252, 42 U.S.C. 2000d-42 U.S.C. 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin, gender, age, or disability in consideration for an award.

3. That the Arizona DOT shall insert the clauses of Appendix A of this assurance in every contract subject to the Act and the Regulations.
4. That the Arizona DOT shall insert the clauses of Appendix B of this assurance, as a covenant running with the land, in any deed from the United States effecting a transfer of real property, structures, or improvements thereon, or interest therein.
5. That where the Arizona DOT constructs a facility, or part of a facility, the assurance shall extend to the entire facility and facilities operated in connection therewith.
6. That where the Arizona DOT acquires real property or an interest in real property, the assurance shall extend to rights to space on, over or under such property.
7. That the Arizona DOT shall include the appropriate clauses set forth in Appendix C of this assurance, as a covenant running with the land, in any future deeds, leases, permits, licenses, and similar agreements entered into by the Arizona DOT with other parties: (a) for the subsequent transfer of real property acquired or improved under the State Transportation Improvement Program; and (b) for the construction or use of or access to space on, over or under real property acquired, or improved under the State Transportation Improvement Program.
8. That this assurance obligates the Arizona DOT for the period during which Federal financial assistance is extended, except where the Federal financial assistance is to provide, or is in the form of, personal

property, or real property or interest therein or structures or improvements thereon, in which case the assurance obligates the Arizona DOT or any transferee for the longer of the following periods: (a) the period during which the property is used for a purpose for which the Federal financial assistance is extended, or for another purpose involving the provision of similar services or benefits; or (b) the period during which the Arizona DOT retains ownership or possession of the property.

9. The Arizona DOT shall provide for such methods of administration for the program as are found by the Secretary of Transportation of the official to whom he delegates specific authority to give reasonable guarantee that it, other recipients, subgrantees, contractors, subcontractors, transferees, successors in interest, and other participants of Federal financial assistance under such program will comply with all requirements imposed or pursuant to the Act, the Regulations and this assurance.
10. The Arizona DOT agrees that the United States has right to seek judicial enforcement with regard to any matter arising under the Act, the Regulations, and this assurance.

THIS ASSURANCE is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts, property, discounts or other Federal financial assistance extended after the date hereof to the Arizona DOT by the Department of Transportation under the Federal-aid Highway Program and is binding on it, other recipients, subgrantees, contractors, subcontractors, transferees, successors in the interest and other participants in the Federal-aid Highway Program. The person or persons whose signatures appear below are authorized to sign this assurance on behalf of the Arizona DOT.

DATED \_\_\_\_\_ ARIZONA DOT

\_\_\_\_\_  
(Signature of Authorized Official)

Attachments  
Appendices A, B, and C  
Department of Transportation



# APPENDIX A

During the performance of this contract, the contractors, for itself, its assignees and successors in the interest (hereinafter referred to as the "contractor") agrees as follows:

- (1) Compliance with Regulations: The contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (herein, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.
- (2) Nondiscrimination: The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of face, color, national origin, gender, age, or disability in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.
- (3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligation under this contract and the Regulations relative to nondiscrimination on the grounds of face, color, national origin, gender, age, or disability.
- (4) Information and Reports: The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts other sources of information, and its facilities as may be determined by the State of Arizona or the Federal Highway Administration to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the State of Arizona, or the Federal Highway Administration as appropriate, and shall set forth what efforts it has made to obtain the information.
- (5) Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the State of Arizona shall imposed such contract sanctions

as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

- (a) withholding of payments to the contractor under the contract until the contractor complies and/or
  - (b) cancellation, termination or suspension of the contract in whole or in part.
- (6) Incorporation of Provisions: The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurement of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the State of Arizona of the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, however, that in the event a contractor becomes involved in, or is threatened with litigation with a subcontractor or supplier as a result of such direction, the contractor may request the State of Arizona to enter into such litigation to protect the interests of the State of Arizona, and, in addition, the contractor may require the United States to enter into such litigation to protect the interests of the United States.

APPENDIX B

The following clauses shall be included in any and all deeds effecting or recording the transfer of real property, structures or improvements thereon, or interest therein from the United States.

(GRANTING CLAUSE)

NOW, THEREFORE, the Department of Transportation, as authorized by law, and upon the condition that the State of Arizona will accept title to the lands and maintain the project constructed thereon, in accordance with Title 23, United States Code, the Regulations for the Administration of Federal Aid for Highways and the policies and procedures prescribed by the Federal Highway Administration of the Department of Transportation and, also in accordance with and in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter referred to as the Regulations) pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat.; 42 U.S.C. 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the State of Arizona all the right, title and interest of the Department of Transportation in and to said lands described to Exhibit “A” attached hereto and made a part hereof.

(HABENDUM CLAUSE)

TO HAVE AND TO HOLD said lands and interests therein unto the State of Arizona and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and shall be binding on the State of Arizona, its successors and assigns.

The State of Arizona, in consideration of the conveyance of said lands and interests in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, the (1) no person shall on the grounds of race, color, national origin, gender, age, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over or under such lands hereby conveyed, and (2) that the State of Arizona shall use the lands and interests in lands and interests in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal

Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations may be amended, and (3) that in the event of breach of any of the above-mentioned nondiscrimination conditions, the Department shall have a right to re-enter said lands and facilities on said land, and the above described land and facilities shall hereon revert to and vest in and become the absolute property of the Department of Transportation and its assigns as such interest existed prior to this instruction.\*

\* Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to effectuate the purposes of Title VI in the Civil Rights Act of 1964.



# APPENDIX C

The following clauses shall be included in all deeds, licenses, leases, permits or similar instruments entered into by the State of Arizona pursuant to the provisions of Assurance 7(a).

The (grantee, licensee, lessee, permittee, etc., as appropriate) for himself, his heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add “as a covenant running with the land”] that in the event facilities are constructed, maintained or otherwise operated on the said property described in this (deed, license, lease, permit, etc.) for a purpose for which a Department of Transportation program or activity is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) shall maintain and operate such facilities and services in compliance with all other requirements imposed pursuant to Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations may be amended.

[Include in licenses, leases, permits, etc.]\*

That in the event of breach of any of the above nondiscrimination covenants, the State of Arizona shall have the right to terminate the [license, lease, permit, etc.] and to re-enter and repossess said land the facilities thereon, and hold the same if said [license, lease, permit, etc.] had never been made or issued.

[Include in deeds.]\*

That in the event of breach of any of the above nondiscrimination covenants, the State of Arizona shall have the right to re-enter such lands and facilities shall revert to and vest in and become the absolute property of the State of Arizona and its assigns.

The following shall be included in all deeds, licenses, leases, permits, or similar agreement entered into by the State of Arizona pursuant to the provisions of Assurance 6(b).

The (grantee, licensee, permittee, etc., as appropriate) for himself, his personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds, and leases add “as a covenant running with the land”) that (1) no person on the grounds of race, color, national origin, gender, age, or

disability shall be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over or under such land and the furnishing of services thereon, no person on the grounds of race, color, national origin, gender, age, or disability shall be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) shall use the premises in compliance with all other requirements imposed by or pursuant to Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations may be amended.

[Include in licenses, leases, permits, etc.]

That in the event of breach of any of the above nondiscrimination covenants, the State of Arizona shall have the right to terminate the [license, lease, permit, etc.] and to re-enter and repossess said land and the facilities thereon, and hold the same as if said [license, lease, permit, etc.] had never been made or issued.

[Include in deeds.]\*

That in the event of breach of any of the above nondiscrimination covenants, the State of Arizona shall have the right to re-enter said land and facilities thereon, and the above described lands and facilities shall thereupon revert to and vest in and become the absolute property of the State of Arizona and its assigns.

\* Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to effectuate the purposes of Title VI in the Civil Rights Act of 1964.

ARIZONA DEPARTMENT OF TRANSPORTATION  
TITLE VI OPERATING PROCEDURES

STAFFING

The Arizona Department of Transportation has established a Civil Rights Office to administer civil rights related programs. The Civil Rights Office is a part of the Transportation Services Group, which reports to the Chief of Staff. The Civil Rights Administrator has direct access to the Director and Deputy Director. Organizational charts for the agency and for the Civil Rights Office are attached.

Title 23 of the Code of Federal Regulations, part 200.9 (b)(2), requires state departments of transportation to have an adequately staffed civil rights unit. The Civil Rights Office is staffed by the Administrator, an Equal Opportunity Specialist IV, three Equal Opportunity Specialists III, an Equal Opportunity Specialist II, an Administrative Secretary and a half-time clerical aide. All of the professionals participate in investigations when needed.

The Civil Rights Administrator serves as the Title VI Coordinator. The Administrator is responsible for initiating and monitoring Title VI activities and preparing reports. The Administrator is assisted by one of the Equal Opportunity Specialists.

The department has elected to use the interdisciplinary approach to implementing its Title VI program. The Title VI Team is composed of liaisons from relevant program areas: Transportation Planning, Environmental Planning, Engineering Consultant Services, Right of Way, and Contracts and Specifications. In some cases, there is more than one liaison. The liaisons meet on a quarterly basis and more often if necessary. The team assists in conducting reviews, investigating complaints, and defining issues. Some of the metropolitan planning organizations have also appointed liaisons.

The Title VI Coordinator, assisted by staff and the Title VI Team, has the following responsibilities:

1. Investigate Title VI complaints promptly and in accordance with complaint procedures which follows.

2. Develop a program to conduct Title VI reviews of program areas including reviewing procedures to collect statistical data (i.e., race, color, national origin, gender, age, and disability) of participants in, and beneficiaries of State highway programs.
3. Conduct annual reviews of special emphasis program areas, such as Transportation Planning, Environmental Planning, and Right-of-Way, to determine the effectiveness or program area activities at all levels.
4. Conduct Title VI reviews of cities, counties, consultant contractors, suppliers, universities, colleges, planning agencies, and other recipients of Federal-aid funds.
5. Review State program directives in coordination with State program officials and, where applicable, include Title VI and related requirements.
6. Conduct training on Title VI and related statutes for State program and civil rights officials.
7. Prepare a yearly report of Title VI accomplishments for the past year, goals for the next year and an updated Title VI implementing plan.
8. Develop Title VI information for dissemination to the general public and, where appropriate, in languages other than English.
9. Establish procedures for pre and post grant approval reviews of State programs and applicants for compliance with Title VI requirements such as highway location, design and location, and persons seeking contracts with the State.
10. Establish procedures to identify and eliminate discrimination when found to exist.
11. Establish procedures for promptly resolving deficiency status and reducing to writing the remedial action agreed to be necessary, within a period not to exceed 90 days.

COMPLAINTS PROCESS

Any person who believes that he or she, individually, as a member of any specific class of persons, or in connection with any minority contractor, has been subjected to discrimination prohibited by Title VI of Civil Rights Act of 1964 and the Civil Rights Restoration Act of 1987 may file a



complaint. The basis of the complaint must be (a) unequal treatment because of race, color, national origin, gender, age and/or disability, or (b) noncompliance with Title VI rules or guidelines adopted thereunder.

The Arizona Department of Transportation has the principal responsibility for processing, investigating, and resolving any complaint arising within or as a result of its operations, its contractors or its subrecipients. Complaints may be filed with the ADOT Director or Civil Rights Office, the U. S. Department of Transportation (USDOT), the Federal Highway (FHWA), the Federal Transit Administration (FTA), the Federal Aviation Administration (FAA). ADOT will use the interdisciplinary approach and involve the Title VI Liaisons in the investigation. In the event the complaint is against ADOT, FHWA will conduct or contract for the investigation or, if a class action complaint, a review.

Complaints must be filed within 180 days of the date of the alleged act of discrimination or, where there has been a continuing course of conduct, the date on which that conduct was discontinued.

Complaints must be filed in writing and must be signed by the complainant and/or complainant's representative. The complaint must describe the facts and circumstances surrounding the claimed discrimination. If the complaint is verbal, a representative of the ADOT Civil Rights Office will assist the person in reducing the complaint to writing and submit the written version of the complaint to the person for signature.

When a complaint is filed directly with ADOT, the appropriate agency (FHWA, FTA, or FAA) will be notified within ten (10) working days of the allegations. The following information will be included in every notification to the appropriate office:

- Name, address, and telephone number of the complainant or representative.
- Name(s) and address(es) of alleged discrimination officials.
- Basis of complaint (i.e., race, color, national origin, gender, age, disability).
- Date of alleged discriminatory act(s).
- Date complaint was received by ADOT.

- A statement of the complaint.
- Other agencies (state, local, or federal) with which the complaint has been filed.
- An explanation of the actions ADOT has taken or proposed to resolve the issues raised in the complaint.

Within ten (10) days, the ADOT Civil Rights Administrator will acknowledge receipt of the allegation, inform the complainant of action taken or proposed action to process the allegation, and advise the complainant of other avenues of redress available.

Within sixty (60) days, the Civil Rights Administrator will conduct and complete an investigation of the allegation, and based on the information obtained, will render a recommendation for action in a report of findings to the ADOT Director. The Transportation Division of the Attorney General's Office will be consulted during the course of the investigation and the preparation of the report.

Within ninety (90) days from the allegation's receipt, the ADOT Director will notify the complainant in writing of the final decision reached, including the disposition of the matter. This notification will advise the complainant of the avenues of appeal if dissatisfied with the decision. A copy of the decision and summary of findings will be provided to the FHWA Division Office.

All Title VI complaints will be resolved by informal means whenever possible. Such informal attempts and their results will be summarized in the report of findings.

The ADOT Civil Rights Administrator will periodically inform the FHWA Division Office regarding the status of any complaints.

When an allegation has been directly filed with another agency, the ADOT Civil Rights Administrator will be informed and coordinate any action needed by ADOT to resolve the complaint.

If a complaint or the ensuing investigation reveals any factor, element, or omission within the Department's procedures as contributory to the situation causing the complaint, the Civil Rights Administrator will initiate prompt action to amend the procedure to preclude future complaints arising from the same cause. Procedures for promptly resolving deficiency status and reducing to writing necessary remedial action will be established within 90 days.

The Civil Rights Office will maintain a complete file on each Title VI complaint, investigation and final resolution.

Any individual having filed a complaint or participated in the investigation of a complaint will not be subjected to any form of intimidation or retaliation.

Individuals who believe they have been subjected to intimidation or retaliation must follow the procedures described above.

TITLE VI PROGRAM AREAS

General Guidelines

Division Directors and subordinate staff are responsible for being in compliance with the requirements of Title VI and related statutes.

If, during a review of the program area, deficiencies are found, the deficiencies will be pointed out to the appropriate liaison for corrective action. Corrective action must occur within 90 days. A follow up review will be conducted to ensure deficiencies are being corrected. All finding recommendations and progress made in implementing corrective action will be thoroughly documented.

The guidelines for conducting reviews of program areas are attached in Appendix \_\_\_\_.

Transportation Planning

The Transportation Planning Division (TPD) is part of ADOT's comprehensive planning process. Data from various management information systems and source documents are used to enhance management operations and decision making. TPD's Planning Team conducts various studies to support the comprehensive planning process. The two primary types of studies are Multimodal Corridor Profile Analysis and Small Area Transportation Studies.

Multimodal Corridor Profile Analysis studies focus on multimodal corridors of statewide significance. The goal of these studies is to develop specific strategic that includes all transportation modes to accommodate the transportation needs in the key corridors in Arizona. Public involvement is a very important component of these studies. Open House Public Meetings are held at key points in the study process. Additionally, the scope of work specifically states that Title VI issues, including environmental justice, will be addressed.

Small Area Transportation studies are a partnership between ADOT and local jurisdictions. These studies are managed by the local jurisdictions and ADOT requires that the scope of work explicitly state the Title VI issues will be addressed as part of the development of the local jurisdictions' transportation plan. Public involvement is also a very important part of these efforts. Typically at least one member of the Technical Advisory Committee is from the general public. Public meetings are also held as a part of the Small Area Transportation study process.

The Title VI Coordinator and TPD's liaisons work closely with local officials of the Metropolitan Planning Organizations (MPO) and Councils of Governments (COG) to ensure compliance with the Title VI requirements. The Title VI Coordinator provides training, coordinates efforts with the local governments and community organizations on potential Title VI issues, and investigates complaints. The following actions may be taken by the Title VI Coordinator, with assistance from the liaison, in the planning process in order to ensure effective implementation and compliance with Title VI.

- Participate and provide local governments with Title VI information and training.
- Assist the MPO's, COG's and the community in general in establishing Title VI priorities for plans, programs and projects.
- Work closely with the MPO's, COG's and the community in general to create an awareness of the specific requirements of Title VI and especially to assure that the methods used are applied equitably to all groups of people.
- Participate in public meetings, when possible, to create an awareness of Title VI and to ensure the benefits are equally accessible to all.
- Conduct reviews of the statewide transportation planning programs to determine the process for considering community needs.
- Review public participation processes to ensure efforts are taken to reach out and encourage the participation of the transportation disadvantaged.



Environmental Planning

The Environmental Planning Section implements and maintains an environmental planning program, in compliance with state and federal environmental and civil rights laws and regulations, to obtain appropriate environmental approval for proposed highway projects. The section researches and evaluates social, economic, and environmental impacts of proposed highway projects. Environmental documents, including mitigation for identified impacts, are also prepared and processed.

The Title VI Coordinator reviews all Environmental Impact Statements (EIS) and Environmental Assessments (EA) to ensure Title VI and environmental justice issues are addressed. Guidance on Title VI and environmental justice is attached as Appendix \_\_\_\_\_. The Title VI Coordinator, with assistance from the liaison, takes the following actions to ensure compliance:

- Monitor reports to ensure appropriate statistical data is included.
- If adverse impacts are identified, evaluate the mitigative measures to assure they are applied in an equitable manner to those people affected.
- Review public meeting and public hearing notices, press releases, advertisements, etc., to determine if all segments of the impacted communities are being notified of proposed or pending projects.
- Attend public meetings, when possible, to discuss Title VI information and to ensure the meetings are held so all segments of the impacted communities can participate.

Right of Way

The Right of Way Section is responsible for acquiring all real property and real property rights necessary for construction and maintenance of all federal and state highways, maintenance camps, and other transportation-related purposes. Right of Way administers all matters relating to the management and disposal of all Department-owned property and the Relocation Assistance Program.

The Title VI Coordinator, with assistance with the liaison, with Right of Way to:

- Make certain persons who are being relocated are treated in an equitable manner in terms of fair payment for property acquired, relocation assistance, and timely notification of the rights and avenues of appeal. This includes providing information in other languages and alternative formats.
- Monitor procedural methods used in land appraisals, acquisitions, negotiations, selection of comparables, application of cost factors, and relocation activities to ensure activities are uniformly applied to all impacted and potentially impacted persons.
- Monitor activities to ensure minority and low-income populations are not adversely impacted.
- Monitor reports to ensure appropriate statistical information is being collected and maintained.

Engineering Consultant Services  
Project Management & Valley Project Management

Engineering Consultant Services (ECS) is responsible for preparing scopes-of-work incorporated into contracts with private consultants, assisting in the selection of private consultants, reviewing documents prepared by consultants, prequalifying consultants, and coordinating design development with other agencies. Project Management and Valley Project Management are two primary customers of ECS. Scopes of work for their projects generally include public participation.

The Title VI Coordinator, with assistance from the liaison, is responsible for the following:

- Monitoring the selection process to ensure Disadvantaged Business Enterprises (DBE's) have the maximum opportunity to participate in consultant contracts.
- Monitor prequalification requirements to ensure they are equally applied to all firms.
- Monitor scopes-of-work, when feasible, to ensure Title VI and environmental justices issues are addressed.

Contracts and Specifications

The Title VI Coordinator is responsible for the following with respect to bidding construction contracts:

- Take steps to ensure DBE's are included on the listing to receive bid advertisements for highway construction jobs.
- Monitor bid bond requirements to ensure they are applied to all construction firms.
- Evaluate all federal aid construction contracts with DBE requirements for compliance with contract specifications.
- Monitor prequalification requirements to ensure they are equally applied to all firms.

Procurement

The Title VI Coordinator works with Procurement to ensure the process of selection consultants and/or vendors is done so in a nondiscriminatory manner. This includes research and other projects funded in whole or in part with federal funds. Procurement also participates in a variety of trade fairs to explain the process of doing business with ADOT to small businesses.

Roadside Development/Transportation Enhancement Program

Funding is available for transportation enhancement activities or projects that add community or environmental value to a completed or underway transportation project. The funding is designed to encourage activities and projects that more creatively integrate transportation facilities into their surrounding communities and natural environment. The program is divided into two programs. One is for projects associated with the State highway system and the other for local projects.

The Title VI Coordinator works with the liaison from Roadside Development to ensure the process of selecting transportation enhancement projects is done so in a nondiscriminatory manner.

SUBRECIPIENT REVIEWS

The Title VI Coordinator will require annual reports from subrecipients. Subrecipients include cities, counties, consultant contractors, suppliers, universities, colleges, planning agencies such as MPO's and COG's, and other recipients

Subrecipients such as cities, counties, and planning agencies such as MPO's and COG's must submit the following information by August 1 of each year. Semi annual reviews may be conducted of larger organizations. The reports will contain the following information and will be maintained in the Civil Rights Office.

- Assurances
- Statistical breakdown of communities' populations
- Beneficiaries of projects – identify the race/ethnicity/gender/age, disability of those who will benefit from projects and, specifically, the mobility benefits such as pedestrian, bicycles, automobiles, and transit which will result
- Effects of transportation programs within the community: transportation, social, and other beyond mobility
- Process for public participation, specifically discussing efforts to reach out and to ensure participation of the transportation disadvantaged
- Composition of advisory boards having an impact on transportation programs, indicating the race, ethnicity, gender, age and disability of the members
- A listing of all complaints, claims and lawsuits alleging discrimination
- Process for identifying and eliminating procedures which result in discrimination and correcting deficiencies within 90 days
- A listing of pending applications for federal assistance

The Title VI Coordinator will review subrecipients reports to determine which reviews will be conducted during the next year.

Subrecipients such as consultants, contractors, suppliers, universities, and colleges, will maintain the following information:

- Assurances
- Statistical breakdown of organizations such as the EEO 1 report
- Information by race, ethnicity, gender, disability showing the extent to which members of minority groups are beneficiaries of programs
- A listing of all complaints, claims and lawsuits alleging discrimination
- Processes for identifying and eliminating procedures which result in discrimination and correcting deficiencies within 90 days
- A listing of pending applications for federal assistance.

TRAINING

The Title VI Coordinator will conduct training with the Title VI liaisons, MPO's, COG's, and other interested individuals on an annual basis. All



training conducted during the year will be reported in the annual element.

TABLE OF CONTENTS

Introduction	2
Important Terms Used In This Brochure	3
<b>Section 1 – Relocation Advisory Services</b>	
Residential Assistance	6
Business, Farm, and Nonprofit Organization Assistance	7
<b>Section 2 – Individuals and Families</b>	
Moving Costs	9
Replacement Housing	10
Replacement Housing – Purchase Supplement	18
Replacement Housing – Rental Assistance	21
Replacement Housing – Downpayment	25
<b>Section 3 – Business, Farm, and Nonprofit Organizations</b>	
Moving Cost Reimbursement	27
Related Eligible Expenses	30
Reestablishment Expenses	30
Fixed Payment For Moving Expenses (In Lieu Payment)	32
Project Office	34
Relocation Payments Are Not Considered To Be Income	34
Right To Appeal	34

INTRODUCTION

Government programs designed to benefit the public as a whole often result in acquisition of private property, and sometimes in the displacement of people from their residences, businesses, nonprofit organizations, or farms.

To provide uniform and equitable treatment for persons displaced, Congress passed the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, and amended it in 1987. This law, called the Uniform Act, is the foundation for the information discussed in this brochure.

Acquisition and relocation policies and provisions for all Federal and federally assisted programs and projects are contained in the government-wide rule published in the Federal Register on January 4, 2005. The rules are reprinted each year in the Code of Federal Regulations (CFR), Title 49, Part 24. All Federal, State, local government agencies, and others receiving Federal financial assistance for public programs and projects that require the acquisition of real property must comply with the policies and provisions set forth in the Uniform Act and the regulation.

The acquisition itself does not need to be federally funded for the rules to apply. If Federal funds are used in any phase of the program or project, the rules of the Uniform Act apply.

Section 1 of this brochure provides information about relocation assistance advisory service. Section 2 contains information important to you if you are being displaced from a residence. Section 3 contains information for displaced businesses, farms, and nonprofit organizations.

If you are required to move as a result of a Federal or federally assisted program or project, a relocation counselor will contact you. The counselor will answer your specific questions and provide additional information you may need. If you have a disability that prevents you from reading or understanding this brochure, you will be provided appropriate assistance. You should notify the sponsoring Agency if you have special requirements for assistance.

This brochure explains your rights as an owner of real property to be acquired for a federally funded program or project. The requirements for acquisition of property are explained in a brochure entitled Acquisition, Acquiring Real Property for Federal and Federal-aid Programs and Projects. Acquisition and relocation information can be found on the Federal Highway Administration Office of Real Estate Services website [www.fhwa.dot.gov/realestate](http://www.fhwa.dot.gov/realestate)

IMPORTANT TERMS USED IN THIS BROCHURE

**Agency**  
Relocation assistance advisory services and payments are administered at the local level by an Agency responsible for the acquisition of real property and/or the displacement of people from property to be used for a federally funded program or project. The Agency may be a Federal agency, a State agency, a local agency, such as a county or a city, or a person carrying out a program or project with Federal financial assistance. The Agency may contract with a qualified individual or firm to administer the relocation program. However, the Agency remains responsible for the program.



**Alien Not Lawfully Present**

The law provides that if a displaced person is an alien not lawfully present in the United States such person is not eligible for relocation payments or assistance under the Uniform Relocation Assistance and Real Property Acquisition Policies Act, unless ineligibility would result in exceptional and extremely unusual hardship to the alien's spouse, parent or child, and such spouse, parent or child is a citizen or an alien lawfully admitted for permanent residence.

**Business**

Any lawful activity, with the exception of a farm operation, conducted primarily for the purchase, sale, lease, and rental of personal or real property; or for the manufacture, processing, and/or marketing of products, commodities, or any other personal property; or for the sale of services to the public; or solely for the purpose of the Uniform Act, an outdoor advertising display or displays, when the display(s) must be moved as a result of the project.

**Displaced Person**

Any person (individual, family, partnership, association or corporation) who moves from real property, or moves personal property from real property as a direct result of (1) the acquisition of the real property, in whole or in part, (2) a written notice from the Agency of its intent to acquire, (3) the initiation of negotiations for the purchase of the real property by the Agency, or (4) a written notice requiring a person to vacate real property for the purpose of rehabilitation or demolition of improvements, provided the displacement is permanent and the property is needed for a Federal or federally assisted program or project.

**Farm**

Any activity conducted solely or primarily for the production of one or more agricultural products or commodities, including timber, for sale and home use, and customarily producing such products or commodities in sufficient quantity to be capable of contributing materially to the operator's support.

**Nonprofit Organization**

A public or private entity that has established its nonprofit status under applicable Federal or State law.

**Program or Project**

An activity or series of activities undertaken by a Federal agency, or an activity undertaken by a State or local agency with Federal financial assistance in any phase of the activity.

**Small Business**

A business having not more than 500 employees working at a site which is the location of economic activity and which will be acquired for a program or project, or is displaced by a program or project. A site occupied solely by an outdoor advertising sign(s) does not qualify for purposes of the reestablishment expense benefit.

SECTION 1 – RELOCATION ADVISORY SERVICES

A relocation counselor will contact you and offer relocation assistance service.

Any individual, family, business or farm displaced by a Federal or federally assisted program shall be offered relocation assistance services for the purpose of locating a suitable replacement property. Relocation services are provided by qualified personnel employed by the Agency. It is their goal and desire to be of service to you, and assist in any way possible to help you successfully relocate.

Remember, your relocation counselor is there to **help** and **advise** you, so please be sure to make full use of the counselor’s services. Do not hesitate to ask questions and be sure you fully understand all your rights and benefits.

An individual with a disability will be provided the assistance needed to locate and move to a replacement dwelling or site. The individual should notify the Agency of any special requirements for assistance.

RESIDENTIAL ASSISTANCE

A relocation counselor from the Agency will contact and interview you to find out your needs. Relocation services and payments will be explained in accordance with your eligibility. During the initial interview your housing needs and desires will be determined as well as your need for assistance.

The counselor will offer assistance and provide a current listing of comparable properties. You will be provided a written determination of the amount of replacement housing

payment for which you qualify. The counselor can supply information on other Federal and State programs in your area.

Transportation will be offered to inspect housing referrals. The Agency will provide counseling or help you get assistance from other sources as a means of minimizing hardships in adjusting to your new location.

You cannot be required to move unless at least one comparable decent, safe, and sanitary (DSS) replacement dwelling is made available to you.

Please let your counselor know if you locate a replacement dwelling so that it can be inspected to assure that it meets DSS standards.

BUSINESS, FARM, AND NONPROFIT ORGANIZATION ASSISTANCE

A relocation counselor from the Agency will contact and interview you to find out your needs and replacement site requirements and estimate the time needed to accomplish the move. Relocation services and payments will be explained in accordance with your eligibility. It is important to explain to the counselor any anticipated problems. During the initial interview the relocation counselor will ask many questions to determine your financial ability to accomplish the move, including lease terms and other obligations.

The counselor will help determine the need for outside specialists to plan, move, and reinstall personal property. The counselor will identify and resolve any issues regarding



what is real estate and what is personal property to be relocated. The counselor will explore and provide advice as to possible sources of funding and assistance from other local, State, and Federal agencies. In addition, as needed, the relocation counselor will maintain listings of commercial properties and farms.

The goal is to achieve a successful relocation back into the community.

### **Social Services Provided By Other Agencies**

Your relocation counselor will be familiar with the services provided by other public and private agencies in your community. If you have special problems, the counselor will make every effort to secure the services of those agencies with trained personnel who have the expertise to help you. Make your needs known in order that you may receive the help you need.



## **SECTION 2 – INDIVIDUALS AND FAMILIES**

### **MOVING COSTS**

If you qualify as a displaced person, you are entitled to reimbursement of your moving costs and certain related moving expenses. Displaced individuals and families may choose to be paid either on the basis of actual, reasonable moving costs and related expenses, **or** according to a fixed moving cost schedule. To assure your eligibility and prompt payment of moving expenses, you should contact the relocation counselor from the Agency before you move.

#### **Actual, Reasonable Moving Costs**

You may be paid for your actual, reasonable moving costs by a professional mover plus related expenses, **or** you may move yourself. Reimbursement will be limited to a 50-mile distance in most cases. Related expenses involved in the move may include:

- Packing and unpacking personal property.
- Disconnecting and reconnecting household appliances.
- Temporary storage of personal property.
- Insurance while property is in storage or transit.
- Transfer of telephone service and other similar utility reconnections.
- Other expenses considered eligible by the Agency.

All expenses must be considered necessary and reasonable by the Agency and supported by paid receipts or other evidence of expenses incurred.

**Fixed Moving Cost Schedule**

You may choose to be paid on the basis of a fixed moving cost schedule established for your State of residence. The amount of the payment is based on the number of rooms in your dwelling. Your relocation counselor will be able to tell you the exact amount you will be eligible to receive if you select this option. The schedule is designed to include all of the expenses incurred in moving, including those services that must be purchased from others.

If you are the owner of a displaced mobile home, you may be entitled to a payment for the cost of moving the mobile home to a replacement site on an actual cost basis. Displaced mobile home occupants (owners or tenants) may also be eligible for a payment for moving personal property from the mobile home such as furniture, appliances and clothing on an actual cost basis, or on the basis of a moving cost schedule. For a complete explanation of all moving cost options involving a mobile home, please discuss the matter with your relocation counselor.

**REPLACEMENT HOUSING**

There are three types of replacement housing payments: purchase supplement, rental assistance, and downpayment. To understand replacement housing payments you first need to become familiar with the terms **Comparable; Financial Means; Decent, Safe, and Sanitary (DSS); and Last Resort Housing.**

**Comparable**

A comparable replacement dwelling must be DSS and functionally equivalent to your present dwelling. While not necessarily identical to your present dwelling, a comparable replacement dwelling should provide for the same utility and function as the dwelling from which you are being displaced. In addition, a comparable replacement dwelling should be:

- Adequate in size to accommodate the occupants (e.g., you and your family).
- Located in an area that is not subject to unreasonable adverse environmental conditions.
- Located in an area that is not less desirable than your present location with respect to public utilities and commercial and public facilities.
- Reasonably accessible to your place of employment.
- Located on a site that is typical in size for residential development with normal site improvements.
- Currently available on the private market.
- Within your financial means.

**Financial Means**

For a homeowner, if a purchase supplement is needed and provided, in addition to the acquisition price for your dwelling, then the replacement dwelling is considered to be within your financial means.



For a tenant, the monthly rent and estimated average monthly utility (electricity, gas, other heating and cooking fuels, water and sewer) cost for a comparable replacement dwelling is considered to be within financial means if, after receiving rental assistance, this amount does not exceed the base monthly rent (including average monthly utility cost) for the dwelling from which the tenant is displaced.

The Agency may need to calculate the base monthly rent using 30% of the displaced tenant's total monthly gross household income, if that income qualifies as low income in accordance with established low income amounts determined by the U.S. Department of Housing and Urban Development (HUD).

The Agency will also evaluate the amounts designated for shelter and utilities for a tenant that receives government assistance.

The rental assistance payment will be computed using the lesser of the three (rent and average monthly utility cost; 30% of the total monthly gross household income for a qualified low income tenant; or the total amount designated for shelter and utilities for a tenant receiving government assistance). To ensure the maximum benefit, it is important to provide the Agency appropriate evidence of total monthly household income when asked. There are some amounts that are not included as monthly household income, including income earned by dependents. The Agency will explain this procedure in greater detail.

### **Decent, Safe, and Sanitary**

The DSS standard means the replacement dwelling meets the minimum requirements established by Federal regulations and conforms to applicable local housing and occupancy codes. The dwelling shall:

- Be structurally sound, weathertight, and in good repair.
- Contain a safe electrical wiring system adequate for lighting and other devices.
- Contain a heating system capable of sustaining a healthful temperature (approximately 70 degrees Fahrenheit) except in those areas where local climatic conditions do not require such a system.
- Be adequate in size with respect to the number of rooms and area of living space to accommodate the displaced person.
- Contain a well-lighted and ventilated bathroom providing privacy to the user and containing a sink, bathtub or shower stall, and a toilet, all in good working order and properly connected to appropriate sources of water and sewage drainage system.
- Contain a kitchen area with a fully usable sink, properly connected to potable hot and cold water and to a sewage drainage system, with adequate space and utility connections for a stove and refrigerator.
- Have unobstructed egress to safe, open space at ground level.

The Agency must provide comparable replacement housing, that is DSS and within your financial means, before you are required to move. The Agency may provide the necessary housing in a number of ways, such as:

- Making a replacement housing payment in excess of the maximum \$5,250 or \$22,500 statutory limits.
- Purchasing an existing comparable residential dwelling and making it available to you in exchange for your dwelling.
- Moving and rehabilitating a dwelling and making it available to you in exchange for your property.
- Purchasing, rehabilitating or reconstructing an existing dwelling to make it comparable to your property.
- Purchasing land and constructing a new replacement dwelling comparable to your dwelling when comparables are not otherwise available.
- Purchasing an existing dwelling, removing barriers or rehabilitating the structure to accommodate a handicapped displaced person when a suitable comparable replacement dwelling is not available.
- Providing a direct loan which will enable you to construct or contract for the construction of a decent, safe, and sanitary replacement dwelling.

**Freedom of Choice**

All eligible displaced persons have the freedom of choice in the selection of a replacement dwelling. The Agency will not require you, without your written consent, to accept a replacement dwelling provided by the Agency. If you decide not to accept the replacement housing offered by the Agency, you may secure a replacement dwelling of your choice but it must meet the DSS standard.

If you are eligible for Last Resort Housing, your relocation counselor will thoroughly explain the program to you.

**Length of Occupancy – Basic Occupancy Requirements**

The type of payment you are eligible for depends on whether you are an owner or a tenant, and how long you have lived in the property being acquired prior to the initiation of negotiations. “Length of occupancy” simply means counting the number of days that you occupied the dwelling before the date of initiation of negotiations by the Agency for the purchase of the property.

The term “initiation of negotiations” is usually the date the Agency makes the first personal contact with the owner of real property, or his/her representative, to provide a written offer to purchase the property being acquired.

Owners who were in occupancy 180 days or more prior to the initiation of negotiations may be eligible for a purchase supplement or a rental assistance payment.

Tenants who were in occupancy 90 days or more prior to the initiation of negotiations may be eligible for a rental assistance payment or a downpayment.



Owners who were in occupancy 90 days to 179 days prior to the initiation of negotiations, may be eligible for a rental assistance payment or a downpayment, however, the downpayment cannot exceed the amount you would have received if you had been a 180-day owner.



If you were in occupancy at the time of the initiation of negotiations, but less than 90 days prior to that date, you are considered a displaced person entitled to relocation assistance advisory services and moving payments. You may be entitled to a rental assistance payment if comparable replacement rental housing is not available within your financial means. The Agency will use the financial means test described earlier in this brochure. This involves checking to see if you qualify as low income using the HUD definition. If so, and you are required to pay rent and utilities in excess of 30% of your average monthly gross household income for a comparable replacement dwelling unit, you may be eligible for a rental assistance payment under Last Resort Housing because comparable replacement housing is not available within your financial means. You should meet with your relocation counselor for an explanation of the relocation benefits that you may be eligible to receive.

## REPLACEMENT HOUSING – PURCHASE SUPPLEMENT

### For Owner Occupants of 180 Days or More

If you are an owner and occupied your home for 180 days or more immediately prior to the initiation of negotiations for your property, you may be eligible - in addition to the fair market value of your property - for a supplemental payment for costs necessary to purchase a comparable DSS replacement dwelling. The Agency will compute the maximum payment you are eligible to receive. You must purchase and occupy a DSS replacement dwelling within one year. A purchase supplement has three components: a price differential, an amount for increased mortgage interest and incidental expenses. The purchase supplement is in addition to the acquisition price paid for your property.

#### Price Differential

The price differential payment is the amount by which the cost of a replacement dwelling exceeds the acquisition cost of the displacement dwelling.

#### Increased Mortgage Interest

You may be reimbursed for increased mortgage interest costs if the interest rate on your new mortgage exceeds that of your present mortgage. To be eligible your acquired dwelling must have been encumbered by a bona fide mortgage which was a valid lien for at least 180 days prior to the initiation of negotiations.

Incidental Expenses

You may be reimbursed for other expenses such as reasonable costs incurred for title search, recording fees, and certain other closing costs, but not for prepaid expenses such as real estate taxes and property insurance.

Example of a Price Differential Computation

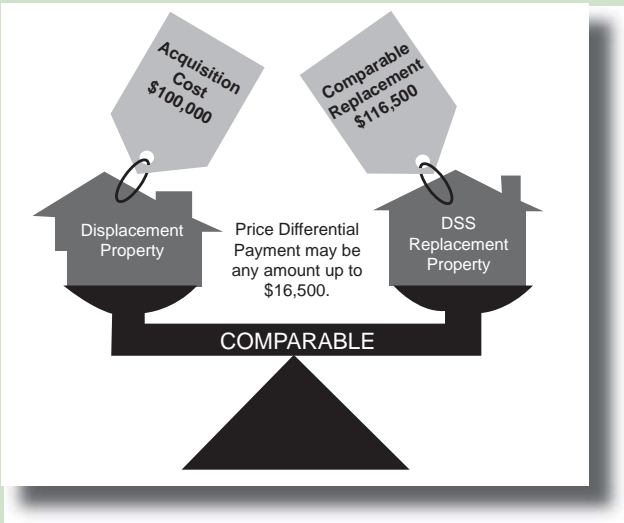
**Example A:** Assume the Agency purchases your property for \$100,000. After a thorough study of available comparable residential properties on the open market, the Agency determines that a comparable replacement property will cost \$116,500. If you purchase a DSS replacement property for \$116,500, you will be eligible for a price differential payment of \$16,500.

**Example B:** If you purchase a DSS replacement property costing more than \$116,500, you pay the difference as shown in Example B.

**Example C:** If your purchase price is less than \$116,500, the price differential payment will be based on your actual cost.



Agency Computation of Maximum Price Differential Payment	Cost of Comparable Replacement Acquisition Price of Your Property <b>Maximum Price Differential Payment</b>	\$116,500 - 100,000 <b>\$ 16,500</b>
Example A	Actual Cost of Replacement Property (Same Purchase Price as Comparable) Acquisition Price of Your Property <b>Price Differential Payment</b>	\$116,500 - 100,000 <b>\$ 16,500</b>
Example B	Actual Cost of Replacement Property Acquisition Price of Your Property Difference  <b>Price Differential Payment</b>  You Are Responsible for This Amount	\$125,000 - 100,000 \$ 25,000  <b>\$16,500</b>  \$8,500
Example C	Actual Cost of Replacement Property Acquisition Price of Your Property <b>Price Differential Payment</b>  Payment is Based on Actual Cost	\$114,000 - 100,000 <b>\$ 14,000</b>





# REPLACEMENT HOUSING – RENTAL ASSISTANCE

## 180-Day Owners Who Elect to Rent

A rental computation will be computed based on a determination of the fair market rent for the acquired dwelling compared to a comparable rental dwelling available on the market. The difference will be multiplied by 42. In no circumstances will the rental assistance payment exceed the amount the owner would have received as a price differential described previously.

## For Owner Occupants and Tenants of 90 Days or More

Owner occupants and tenants of 90 days or more may be eligible for a rental assistance payment. To be eligible for a rental assistance payment, tenants and owners must have been in occupancy at least 90 days immediately preceding the initiation of negotiations for the acquisition of the property.

This payment is designed to enable you to rent a comparable decent, safe, and sanitary replacement dwelling for a 42-month period. If you choose to rent a replacement dwelling and the cost of rent and utilities are higher than you were paying, you may be eligible for a rental assistance payment. The Agency will determine the maximum payment you may be eligible to receive in accordance with established procedures.

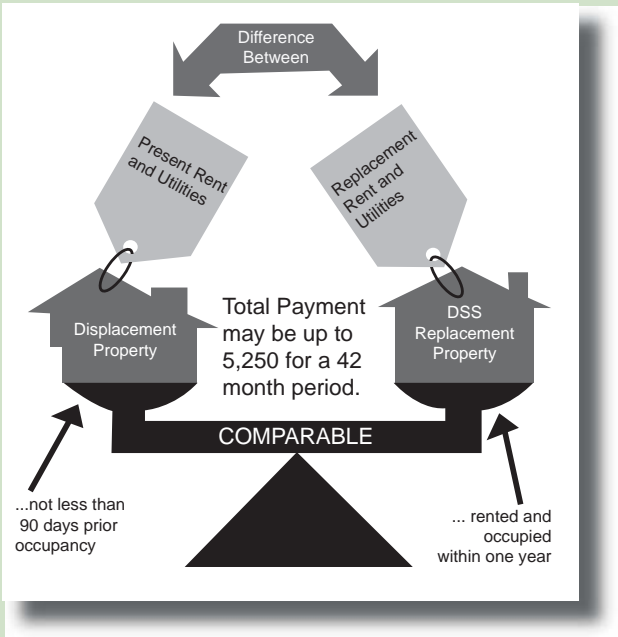
The rental assistance payment will be paid in a lump sum unless the Agency determines that the payment should be paid in installments. You must rent and occupy a DSS replacement dwelling within one year to be eligible.

## Example

Assume you have been paying \$500 per month rent for the dwelling unit occupied by you and purchased by the Agency. You also pay \$150 per month for utilities (electricity, gas, other heating and cooking fuels, water, and sewer). The rental assistance payment computation always includes the cost of basic utilities (electricity, gas, other heating and cooking fuels, water, and sewer), as well as the cost of rent. If rent includes utilities, a separate computation is not necessary.

After a study of the rental market, the Agency determines that replacement rental unit, that is DSS and comparable to your unit, is available for \$600 per month. It is estimated that average monthly utility costs for the replacement unit will be \$175 per month. The maximum rental assistance payment you can receive is \$125 per month for a 42-month period, or a total of \$5,250.

**Example A:** If you select a DSS replacement dwelling unit that rents for \$650 per month plus \$175 for utilities, despite the availability of comparable DSS replacement rental units that rent for \$600 per month plus \$175 for utilities, you will receive the maximum amount computed by the Agency, or \$5,250. You will be required to pay the additional \$50 per month yourself.



**Example B:** If you select a DSS replacement dwelling unit that rents for more than your present unit, but less than amount determined by the Agency as necessary to rent a comparable unit, your payment will be based on actual cost. For example, assume you select a replacement dwelling unit that rents for \$575 per month plus \$165 for utilities. On the basis of actual cost, you will be eligible for a payment of \$90 per month for 42 months, or \$3,780.

Agency Computation of Maximum Rental Assistance Payment	Rent You are Currently Paying	\$500
	Plus Cost for Utilities You are Paying	+150
		\$650
	Rent for a Comparable DSS Dwelling	\$600
	Estimated Cost for Utilities	+175
		\$775
	Difference (\$775-650=\$125) x 42 months	\$5250
	<b>Maximum Rental Assistance Payment</b>	<b>\$5250</b>
Example A	Actual Rent for DSS Replacement Property	\$650
	Plus Estimated Cost for Utilities	+175
		\$825
	Difference (\$825-650=\$175) x 42 months	\$7350
	<b>Rental Assistance Payment</b>	<b>\$5250</b>
Example B	Actual Rent for DSS Replacement Property	\$575
	Plus Estimated Cost for Utilities	+165
		\$740
	Difference (\$740-650=\$90) x 42 months	\$3780
	<b>Rental Assistance Payment</b>	<b>\$3780</b>

# REPLACEMENT HOUSING – DOWNPAYMENT

## Owner Occupants of 90 to 179 Days and Tenants of 90 Days or More

Owner occupants of 90 to 179 days and tenants of 90 days or more may be eligible for a downpayment and incidental expenses. The Agency will determine the maximum downpayment you may be eligible to receive based on its computation for a rental assistance payment. However, the payment for a displaced owner occupant shall not exceed the amount that would have been received by a 180-day owner for the same property.

To be eligible for the full amount of the downpayment assistance payment, the entire payment must be used to purchase a DSS replacement dwelling. The payment may be utilized for a downpayment toward the purchase price and/or eligible incidental expenses. Incidental expenses include the reasonable costs of title search, recording fees, and certain other closing costs but do not include prepaid expenses such as real estate taxes and property insurance. You may be eligible for the reimbursement of loan origination or loan assumption fees if such fees are normal to real estate transactions in your area and do not represent prepaid interest. The combined amount of the downpayment and incidental expenses cannot exceed the amount the Agency computed as your maximum rental assistance payment.

The relocation counselor will explain how the Agency determines the maximum downpayment assistance payment.

## DSS REMINDER

It is very important to remember that the replacement dwelling you select must meet the basic DSS standard. Do not execute a sales contract or a lease agreement until a representative from the Agency has inspected and certified in writing that the dwelling you propose to purchase or rent meets the DSS standard. Please do not jeopardize your right to receive a replacement housing payment by moving into a substandard dwelling.

## FAIR HOUSING LAWS

Title VI of the Civil Rights Act of 1964 and Title VIII of the Civil Rights Act of 1968 set forth the policy of the United States to provide, within constitutional limitations, for fair housing throughout the United States. These Acts and Executive Order 11063 make discriminatory practices in the purchase and rental of residential units illegal if based on race, color, religion, sex, or national origin.

Whenever possible, a minority person shall be given reasonable opportunity to relocate to a DSS replacement dwelling which is not located in an area of minority concentration, that is within their financial means. This policy does not require an Agency to provide a displaced person with a larger payment than is necessary to enable the person to relocate to a comparable replacement dwelling.



SECTION 3 – BUSINESS, FARM, AND NONPROFIT ORGANIZATIONS

MOVING COST REIMBURSEMENT

Owners or tenants may be paid on the basis of actual, reasonable moving costs and related expenses or, under certain circumstances, a fixed payment. Actual, reasonable moving expenses may be paid when the move is performed by a professional mover or if you move yourself. Related expenses, such as personal property losses, expenses in finding a replacement site, and reestablishment expenses may also be reimbursable.

You must provide the Agency with an inventory of the personal property to be moved and advance notice of the approximate date of the move, unless the Agency specifically tells you these notices are not necessary.

The Agency has the right to inspect the personal property at the displacement and replacement sites, and to monitor the move.

Actual Cost Move

You may be paid the actual, reasonable and necessary cost of your move when the move is performed by a professional mover or when you elect to move yourself, however, all your moving costs must be supported by paid receipts or other evidence of expenses incurred. In addition to the transportation costs of your personal property, certain other expenses may be reimbursable, such as packing, crating, unpacking and uncrating, and the disconnecting, dismantling, removing, reassembling, and reinstalling relocated machinery, equipment and other personal property.

Other expenses such as professional services necessary for planning and carrying out the move, temporary storage costs, and the cost of licenses, permits and certifications may also be reimbursable. This is not an inclusive list of moving related expenses. Your relocation counselor will provide you with a complete explanation of reimbursable expenses.

Estimated Cost Move

If you agree to take full responsibility for all or part of the move of your operation, the Agency may approve a payment not to exceed the lower of two acceptable bids or estimates obtained by the Agency from qualified moving firms, moving consultants, or a qualified Agency staff employee. A low cost or uncomplicated move may be based on a single bid or estimate at the Agency’s discretion. The advantage of this moving option is that it relieves you from documenting all moving expenses because the payment is limited to the amount of the lowest acceptable bid or estimate. The Agency may make the payment without additional documentation.

Direct Loss of Tangible Personal Property

Displaced businesses, farms, and nonprofit organizations may be eligible for a payment for the actual direct loss of tangible personal property which is incurred as a result of the move or discontinuance of the operation. This payment is based on the lesser of the value of the item for continued use at the displacement site less the proceeds from its sale, or the estimated cost of moving the item. Your relocation counselor will explain this procedure in detail if this is a consideration for you.

### Low Value High Bulk Property

If an Agency considers a personal property item to be of low value and high bulk, and moving costs are disproportionate to its value (such as minerals, metals, rock, or topsoil), the allowable moving cost payment shall not exceed the lesser of the amount which would be received if the property were sold at the site, or, the replacement cost of a comparable quantity delivered to the new business location.

### Searching Expenses for Replacement Property

Displaced businesses, farms, and nonprofit organizations are entitled to reimbursement for actual, reasonable expenses incurred in searching for a replacement property, not to exceed \$2,500. Expenses may include transportation, meals, and lodging when away from home; the reasonable value of the time spent during the search; and other expenses determined to be reasonable and necessary by the Agency.

Fees paid to real estate agents or brokers to locate a replacement site may be reimbursed, exclusive of any commissions or fees related to the purchase of the site. Commissions and fees related to the purchase of a replacement site are not eligible relocation expenses and will not be reimbursed.

## RELATED ELIGIBLE EXPENSES

In addition to the moving expenses listed above, costs for these items may be reimbursed if the Agency determines they are actual, reasonable, and necessary:

- Connection to available nearby utilities from the right-of-way to improvements at the replacement site.
- Professional services to determine a sites' suitability for the displaced person's operation.
- Impact fees or one time assessments for heavy utility usage as determined necessary by the Agency.

Please discuss this with your relocation counselor before incurring these costs to assure that they are reimbursable.

## REESTABLISHMENT EXPENSES

A small business, farm, or nonprofit organization may be eligible for a payment, not to exceed \$10,000, for expenses actually incurred in relocating and reestablishing the enterprise at a replacement site. To qualify, the business, farm, or nonprofit organization must have not more than 500 employees working at the site who will be displaced by a program or project.

Reestablishment expenses may include, but are not limited to:

- Repairs or improvements to the replacement real property required by Federal, State, and local laws, codes or ordinances.

- Modifications to the replacement real property to make the structure(s) suitable for the operation.
- Construction and installation costs of exterior advertising signs.
- Redecoration or replacement such as painting, wallpapering, paneling, and carpeting when required by the condition of the replacement site.
- Advertising the replacement location.
- Estimated increased costs of operation at the replacement site during the first two years for items such as: lease or rental charges; personal or real property taxes; insurance premiums; utility charges (excluding impact fees).
- Other items that the Agency considers essential for reestablishment.



### **FIXED PAYMENT FOR ACTUAL MOVING EXPENSES (IN LIEU PAYMENT)**

Displaced businesses, farms, and nonprofit organizations may be eligible for a fixed payment in lieu of (in place of) actual moving expenses, personal property losses, searching expense, and reestablishment expenses. The fixed payment may not be less than \$1,000 nor more than \$20,000.

For a business to be eligible for a fixed payment, the Agency must determine the following:

- Business owns or rents personal property that must be moved due to the displacement.
- Business cannot be relocated without a substantial loss of its existing patronage.
- Business is not part of a commercial enterprise having more than three other businesses engaged in the same or similar activity which are under the same ownership and are not being displaced by the Agency.
- Business contributed materially to the income of the displaced business operator during the two taxable years prior to displacement.

Eligibility requirements for nonprofit organizations are slightly different than business requirements. The computation for nonprofit organizations differs in that the payment is



computed on the basis of average annual gross revenues less administrative expenses for the two year period specified. If you are interested in a fixed payment, please consult your relocation counselor for additional information.

**Computation of Your Fixed Payment**

The fixed payment for a displaced business or farm is based upon the average annual net earnings of the operation for the two taxable years immediately preceding the taxable year in which it was displaced, or a two-year period deemed more representative by the Agency. You must provide the Agency with proof of net earnings to support your claim. Proof of net earnings can be documented by income tax returns, certified financial statements, or other reasonable evidence acceptable to the Agency.

**Fixed Payment Example**

2003	2004	2005
Annual Net Earnings \$16,500	Annual Net Earnings \$18,500	Year Displaced
Average annual net earnings $\$16,500 + \$18,500 = \$35,000 / 2 = \$17,500$ Fixed Payment = \$17,500		

**PROJECT OFFICE**

The Agency may establish a relocation office near the project. Project relocation offices are usually open during hours convenient to persons being displaced, including evening hours when necessary. If the Agency opens a project office, the staff will be happy to assist you, answer questions, and will maintain various types of information.

**RELOCATION PAYMENTS ARE NOT  
CONSIDERED TO BE INCOME**

No relocation payment received will be considered as income for the purpose of the Internal Revenue Code. No relocation payment received will be considered income for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other Federal law (except for any Federal law providing low-income housing assistance).

**RIGHT TO APPEAL**

Any aggrieved person may file a written appeal with the head of the Agency if the person believes the Agency has failed to properly determine his or her eligibility for relocation assistance advisory services, or the amount of a relocation payment.

If you have a grievance, you will be given a prompt and full opportunity to be heard. You will also have the right to be represented by legal counsel or other representative in connection with the appeal, but solely at your own expense.

The Agency will promptly review your appeal and consider all pertinent justification and information available to ensure a fair and full review. The Agency will provide you with a written determination as well as an explanation of the decision. If you are still dissatisfied with the relief granted, the Agency will advise you of your right to seek judicial review of the Agency decision.

An alien not lawfully present in the United States shall not be eligible to receive relocation payments or any other assistance provided under 49 CFR Part 24.

This brochure is provided to assist you in understanding your rights and benefits. If you have questions regarding your relocation please contact your sponsoring Agency representative.

Additional information on Federal relocation and acquisition requirements, the law, and the regulation can be found at [www.fhwa.dot.gov/realestate](http://www.fhwa.dot.gov/realestate)

NOTES

TABLE OF CONTENTS

Introduction	2
Important Terms Used In This Brochure	4
Property Appraisal	7
Just Compensation	10
Exceptions To The Appraisal Requirement	12
The Written Offer	13
Acquisitions Where Condemnation Will Not Be Used	16
Payment	17
Possession	18
Settlement	19
Condemnation	20

INTRODUCTION

Government programs designed to benefit the public as a whole often result in acquisition of private property and, sometimes, in the displacement of people from their residences, businesses or farms. Acquisition of this kind has long been recognized as a right of government and is known as the power of eminent domain. The Fifth Amendment of the Constitution states that private property shall not be taken for public use without just compensation.

To provide uniform and equitable treatment for persons whose property is acquired for public use, Congress passed the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, and amended it in 1987. This law, called the Uniform Act, is the foundation for the information discussed in this brochure.

Revised rules for the Uniform Act were published in the Federal Register on January 4, 2005. The rules are reprinted each year in the Code of Federal Regulations (CFR), Title 49, Part 24. All Federal, State and local government agencies, as well as others receiving Federal financial assistance for public programs and projects, that require the acquisition of real property, must comply with the policies and provisions set forth in the Uniform Act and the regulation.





The acquisition itself does not need to be federally-funded for the rules to apply. If Federal funds are used in any phase of the program or project, the rules of the Uniform Act apply. The rules encourage acquiring agencies to negotiate with property owners in a prompt and amicable manner so that litigation can be avoided.

This brochure explains your rights as an owner of real property to be acquired for a federally-funded program or project. The requirements for relocation assistance are explained in a brochure entitled Relocation, Your Rights and Benefits as a Displaced Person under the Federal Relocation Assistance Program.

Acquisition and relocation information can be found on the Federal Highway Administration Office of Real Estate Services website: [www.fhwa.dot.gov/realestate](http://www.fhwa.dot.gov/realestate)

The agency responsible for the federally-funded program or project in your area will have specific information regarding your acquisition. Please contact the sponsoring agency to receive answers to your specific questions.

## IMPORTANT TERMS USED IN THIS BROCHURE

### Acquisition

Acquisition is the process of acquiring real property (real estate) or some interest therein.

### Agency

An agency can be a government organization (Federal, State, or local), a non-government organization (such as a utility company), or a private person using Federal financial assistance for a program or project that acquires real property or displaces a person.

### Appraisal

An appraisal is a written statement independently and impartially prepared by a qualified appraiser setting forth an opinion of defined value of an adequately described property as of a specific date, supported by the presentation and analysis of relevant market information.

### Condemnation

Condemnation is the legal process of acquiring private property for public use or purpose through the agency's power of eminent domain. Condemnation is usually not used until all attempts to reach a mutually satisfactory agreement through negotiations have failed. An agency then goes to court to acquire the needed property.

### Easement

In general, an easement is the right of one person to use all or part of the property of another person for some specific purpose. Easements can be permanent or temporary (i.e.,

limited to a stated period of time). The term may be used to describe either the right itself or the document conferring the right. Examples are: permanent easement for utilities, permanent easement for perpetual maintenance of drainage structures, and temporary easement to allow reconstruction of a driveway during construction.

**Eminent Domain**

Eminent domain is the right of government to take private property for public use. In the U.S., just compensation must be paid for private property acquired for federally-funded programs or projects.

**Fair Market Value**

Fair market value is market value that has been adjusted to reflect constitutional and other legal requirements for public acquisition.

**Interest**

An interest is a right, title, or legal share in something. People who share in the ownership of real property have an interest in the property.

**Just Compensation**

Just compensation is the price an agency must pay to acquire real property. An agency official must make the estimate of just compensation to be offered to you for the property needed. That amount may not be less than the amount established in the approved appraisal report as the fair market value for your property. If you and the agency cannot agree on the amount of just compensation to be

paid for the property needed, and it becomes necessary for the agency to use the condemnation process, the amount determined by the court will be the just compensation for your property.

**Lien**

A lien is a charge against a property in which the property is the security for payment of a debt. A mortgage is a lien. So are taxes. Customarily, liens must be paid in full when the property is sold.

**Market Value**

Market value is the sale price that a willing and informed seller and a willing and informed buyer agree to for a particular property.

**Negotiation**

Negotiation is the process used by an agency to reach an amicable agreement with a property owner for the acquisition of needed property. An offer is made for the purchase of property in person, or by mail, and the offer is discussed with the owner.

**Person**

A person is an individual, partnership, corporation, or association.

**Personal Property**

In general, personal property is property that can be moved. It is not permanently attached to, or a part of, the real property. Personal property is not to be included and valued in the appraisal of real property.

**Program or Project**

A program or project is any activity or series of activities undertaken by an agency where Federal financial assistance is used in any phase of the activity.

**Waiver Valuation**

The term waiver valuation means an administrative process for estimating fair market value for relatively low-value, non-complex acquisitions. A waiver valuation is prepared in lieu of an appraisal.

**PROPERTY APPRAISAL**

An agency determines what specific property needs to be acquired for a public program or project after the project has been planned and government requirements have been met.



If your property, or a portion of it, needs to be acquired, you, the property owner, will be notified as soon as possible of (1) the agency’s interest in acquiring your property, (2) the agency’s obligation to secure any necessary appraisals, and (3) any other useful information.

When an agency begins the acquisition process, the first personal contact with you, the property owner, should be no later than during the appraisal of the property.



An appraiser will contact you to make an appointment to inspect your property. The appraiser is responsible for determining the initial fair market value of the property. The agency will have a review appraiser study and recommend

approval of the appraisal report used to establish the just compensation to be offered to you for the property needed.

You, or a representative that you designate, will be invited to accompany the appraiser when the appraiser inspects your property. You can point out any unusual or hidden features of the property that the appraiser could overlook. At this time, you should advise the appraiser if any of these conditions exist:

- There are other persons who have ownership or interest in the property.
- There are tenants on the property.
- Items of real or personal property that belong to someone else are located on your property.
- The presence of hazardous material, underground storage or utilities.



This is your opportunity to tell the appraiser about anything relevant to your property, including other properties in your area that have recently sold.

The appraiser will inspect your property and note its physical characteristics. He or she will review sales of properties similar to yours in order to compare the facts of those sales with the facts about your property. The appraiser will analyze all elements that affect value.



The appraiser must consider normal depreciation and physical deterioration that has taken place. By law, the appraiser must disregard the influence of the future public project on the value of the property. This requirement may be partially responsible for any difference in the fair market value and market value of your property.

The appraisal report will describe your property and the agency will determine a value based on the condition of the property on the day that the appraiser last inspected it, as compared with other similar properties that have sold.

## JUST COMPENSATION

Once the appraisal of fair market value is complete, a review appraiser from the agency will review the report to ensure that all applicable appraisal standards and requirements are met. When they are, the review appraiser will give the agency the approved appraisal to use in determining the amount of just compensation to be offered for your real property. This amount will never be less than the fair market value established by the approved appraisal.



If the agency is only acquiring a part of your property, there may be damages or benefits to your remaining property. Any allowable damages or benefits will be reflected in the just compensation amount. The agency will prepare a written offer of just compensation for you when negotiations begin.

### Buildings, Structures and Improvements

Sometimes buildings, structures, or other improvements are located on the property to be acquired. If they are real property, the agency must offer to acquire at least an equal interest in them if they must be removed or if the agency determines that the improvements will be adversely affected by the public program or project.

An improvement will be valued as real property regardless of who owns it.

**Tenant-Owned Buildings, Structures and Improvements**

Sometimes tenants lease real property and build or add improvements for their use. Frequently, they have the right or obligation to remove the improvements at the expiration of the lease term. If, under State law, the improvements are considered to be real property, the agency must make an offer to the tenants to acquire these improvements as real property.

In order to be paid for these improvements, the tenant-owner must assign, transfer, and release to the agency all right, title, and interest in the improvements. Also, the owner of the real property on which the improvements are located must disclaim all interest in the improvements.

For an improvement, just compensation is the amount that the improvement contributes to the fair market value of the whole property, or its value for removal from the property (salvage value), whichever amount is greater.

A tenant-owner can reject payment for the tenant-owned improvements and obtain payment for his or her property interests in accordance with other applicable laws. The agency cannot pay for tenant-owned improvements if such payment would result in the duplication of any other compensation otherwise authorized by law.

If improvements are considered personal property under State law, the tenant-owner may be reimbursed for moving them under the relocation assistance provision.

The agency will personally contact the tenant-owners of improvements to explain the procedures to be followed. Any payments must be in accordance with Federal rules and applicable State laws.

**EXCEPTIONS TO THE APPRAISAL REQUIREMENT**

The Uniform Act requires that all real property to be acquired must be appraised, but it also authorizes waiving that requirement for low value acquisitions.

Regulations provide that the appraisal may be waived:

- If you elect to donate the property and release the agency from the obligation of performing an appraisal, or
- If the agency believes the acquisition of your property is uncomplicated and a review of available data supports a fair market value likely to be \$10,000 or less, the agency may prepare a waiver valuation, rather than an appraisal, to estimate your fair market value.

If the agency believes the acquisition of your property is uncomplicated and a review of available data supports a fair market value likely to be over \$10,000 but less than \$25,000, the agency may prepare a waiver valuation rather than an appraisal to estimate your fair market value, however, if you elect to have the agency appraise your property, an appraisal will be obtained.

## THE WRITTEN OFFER

After the agency approves the just compensation offer they will begin negotiations with you or your designated representative by delivering the written offer of just compensation for the purchase of the real property. If practical, this offer will be delivered in person by a representative of the agency. Otherwise, the offer will be made by mail and followed up with a contact in person or by telephone. All owners of the property with known addresses will be contacted unless they collectively have designated one person to represent their interests.



An agency representative will explain agency acquisition policies and procedures in writing, either by use of an informational brochure, or in person.

The agency's written offer will consist of a written summary statement that includes all of the following information:

- The amount offered as just compensation.
- The description and location of the property and the interest to be acquired.
- The identification of the buildings and other improvements that are considered to be part of the real property.

The offer may list items of real property that you may retain and remove from the property and their retention values. If you decide to retain any or all of these items, the offer will be reduced by the value of the items retained. You will be responsible for removing the items from the property in a timely manner. The agency may elect to withhold a portion of the remaining offer until the retained items are removed from the property.

Any separately held ownership interests in the property, such as tenant-owned improvements, will be identified by the agency.

The agency may negotiate with each person who holds a separate ownership interest, or, may negotiate with the primary owner and prepare a check payable jointly to all owners.

The agency will give you a reasonable amount of time to consider the written offer and ask questions or seek clarification of anything that is not understood.

If you believe that all relevant material was not considered during the appraisal, you may present such information at this time. Modifications in the proposed terms and conditions of the purchase may be requested. The agency will consider any reasonable requests that are made during negotiations.



**Partial Acquisition**

Often an agency does not need all the property you own. The agency will usually purchase only what it needs.

If the agency intends to acquire only a portion of the property, the agency must state the amount to be paid for the part to be acquired.

In addition, an amount will be stated separately for damages, if any, to the portion of the property you will keep.

If the agency determines that the remainder property will have little or no value or use to you, the agency will consider this remainder to be an uneconomic remnant and will offer to purchase it. You have the option of accepting the offer for purchase of the uneconomic remnant or keeping the property.

**Agreement Between You and the Agency**

When you reach agreement with the agency on the offer, you will be asked to sign an option to buy, a purchase agreement, an easement, or some form of deed prepared by the agency. Your signature will affirm that you and the agency are in agreement concerning the acquisition of the property, including terms and conditions.



If you do not reach an agreement with the agency because of some important point connected with the acquisition offer, the agency may suggest mediation as a means of coming to agreement. If the agency thinks that a settlement cannot be reached, it will initiate condemnation proceedings.

The agency may not take any action to force you into accepting its offer. Prohibited actions include:

- Advancing the condemnation process.
- Deferring negotiations.
- Deferring condemnation.
- Delaying the deposit of funds with the court for your use when condemnation is initiated.
- Any other coercive action designed to force an agreement regarding the price to be paid for your property.

**ACQUISITIONS WHERE CONDEMNATION WILL NOT BE USED**

An agency may not possess the power of eminent domain. Or an agency has the power of eminent domain but elects not to use it for a program or project. If this is the case, you will be informed in writing, before negotiations begin, that the agency will not condemn your property if you and the agency fail to reach agreement. Before making you an offer, the agency will inform you, in writing, of what it believes to be

the fair market value for the property it would like to acquire. An owner, in this situation, is not eligible for relocation assistance benefits.

Tenants on the property may be eligible for relocation benefits.

## PAYMENT

The next step in the acquisition process is payment for your property. As soon as all the necessary paperwork is completed for transferring title of the property, the agency will pay any liens that exist against the property and pay your equity to you. Your incidental expenses will also be paid or reimbursed.

Incidental expenses are reasonable expenses incurred as a result of transferring title to the agency, such as:

- Recording fees and transfer taxes.
- Documentary stamps.
- Evidence of title, however, the agency is not required to pay costs required solely to perfect your title or to assure that the title to the real property is entirely without defect.
- Surveys and legal descriptions of the real property.
- Other similar expenses necessary to convey the property to the agency.

Penalty costs and other charges for prepaying any preexisting recorded mortgage entered into in good faith encumbering the real property will be reimbursed.

The pro rata share of any prepaid real property taxes that can be allocated to the period after the agency obtains title to the property or takes possession of it, will be reimbursed.

If possible, the agency will pay these costs directly so that you will not need to pay the costs and then claim reimbursement.

## POSSESSION

The agency may not take possession of your property unless:

- You have been paid the agreed purchase price, or
- In the case of condemnation, the agency has deposited with the court an amount for your benefit and use that is at least the amount of the agency's approved appraisal of the fair market value of your property, or
- The agency has paid the amount of the court award of compensation in the condemnation proceeding.



If the agency takes possession while persons still occupy the property:

- All persons occupying the property must receive a written notice to move at least 90 days in advance of the required date to move. In this context, the term person includes residential occupants, homeowners, tenants, businesses, non-profit organizations, and farms.
- An occupant of a residence cannot be required to move until at least 90 days after a comparable replacement dwelling has been made available for occupancy. Only in unusual circumstances, such as when continued occupancy would constitute a substantial danger to the health or safety of the occupants, can vacation of the property be required in less than 90 days.

**SETTLEMENT**

The agency will make every effort to reach an agreement with you during negotiations. You may provide additional information, and make reasonable counter offers and proposals for the agency to consider.

When it is in the public interest, most agencies use the information provided as a basis for administrative or legal settlements, as appropriate.

**CONDEMNATION**

If an agreement cannot be reached, the agency can acquire the property by exercising its power of eminent domain. It will do this by instituting formal condemnation proceedings with the appropriate State or Federal court.

If the property is being acquired directly by a Federal agency, the condemnation action will take place in a Federal court and Federal procedures will be followed.

If the property is being acquired by anyone else that has condemnation authority, the condemnation action will take place in State court and the procedures will follow State law.

In many States, a board of viewers or commissioners, or a similar body, will initially determine the amount of compensation you are due for the property. You and the agency will be allowed to present information to the court during these proceedings.

If you or the agency are dissatisfied with the board’s determination of compensation, a trial by a judge or a jury may be scheduled. The court will set the final amount of just compensation after it has heard all arguments.



### Litigation Expenses

Normally, the agency does not reimburse you for costs you incur as a result of condemnation proceedings. The agency will reimburse you, however, under any of the following conditions:

- The court determines that the agency cannot acquire your property by condemnation.
- The condemnation proceedings are abandoned by the agency without an agreed-upon settlement.
- You initiate an inverse condemnation action and the court agrees with you that the agency has taken your real property rights without the payment of just compensation, or the agency elects to settle the case without further legal action.
- The agency is subject to State laws that require reimbursement for these or other condemnation costs.

The information is provided to assist you in understanding the requirements that must be met by agencies, and your rights and obligations. If you have any questions, contact your agency representative.

Additional information on Federal acquisition requirements, the law and the regulation can be found at [www.fhwa.dot.gov/realestate](http://www.fhwa.dot.gov/realestate)

### NOTES

NOTES

NOTES

APPENDIX 4-2

FIVE PERCENT PLAN FOR ATTAINMENT OF THE 24-HOUR PM-10 STANDARD

**Appendix 4-2**, *Five Percent Plan for Attainment of the 24-Hour PM-10 Standard*, presents the U.S. Environmental Protection Agency’s proposal to approve the state implementation plan revision for the Maricopa County PM<sub>10</sub> nonattainment area. The approved plan shows Maricopa County in conformance with Clean Air Act requirements for PM<sub>10</sub> as of December 2012.



7118

Federal Register / Vol. 79, No. 25 / Thursday, February 6, 2014 / Proposed Rules

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA–R09–OAR–2013–0762; FRL–9906–04–Region 9]

Approval and Promulgation of Implementation Plans—Maricopa County PM-10 Nonattainment Area; Five Percent Plan for Attainment of the 24-Hour PM-10 Standard

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA) is proposing to approve a state implementation plan (SIP) revision submitted by the State of Arizona to meet Clean Air Act (CAA) requirements applicable to the Maricopa County (Phoenix) PM-10 Nonattainment Area. The Maricopa County PM-10 Nonattainment Area is located in the eastern portion of Maricopa County and encompasses the cities of Phoenix, Mesa, Scottsdale, Tempe, Chandler, Glendale, several other smaller jurisdictions, unincorporated County lands, as well as the town of Apache Junction in Pinal County. The Maricopa County PM-10 Nonattainment Area is designated as a serious nonattainment area for the national ambient air quality standards (NAAQS) for particulate matter of ten microns or less (PM-10). The submitted SIP revision is the *Maricopa Association of Governments Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area* (2012 Five Percent Plan). Arizona’s obligation to submit the 2012 Five Percent Plan was triggered by EPA’s June 6, 2007 finding that the Maricopa PM-10 Nonattainment Area had failed to meet its December 31, 2006 deadline to attain the PM-10 NAAQS. The CAA requires a serious PM-10 nonattainment area that fails to meet its attainment deadline to submit a plan providing for attainment of the PM-10. NAAQS and for an annual emission reduction in PM-10 or PM-10 precursors of not less than five percent until attainment. EPA is proposing to approve the 2012 Five Percent Plan as meeting all relevant statutory and regulatory requirements.

**DATES:** Any comments must arrive by March 10, 2014.

**ADDRESSES:** Submit comments, identified by docket number EPA–R09–OAR–2013–0762, by one of the following methods:

1. *Federal eRulemaking Portal:* [www.regulations.gov](http://www.regulations.gov). Follow the on-line instructions.

2. *Email:* [nudd.gregory@epa.gov](mailto:nudd.gregory@epa.gov).
3. *Mail or Deliver:* Gregory Nudd (Air-2), U.S. Environmental Protection Agency Region IX, 75 Hawthorne Street, San Francisco, CA 94105–3901.

**Instructions:** All comments will be included in the public docket without change and may be made available online at [www.regulations.gov](http://www.regulations.gov), including any personal information provided, unless the comment includes Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Information that you consider CBI or otherwise protected should be clearly identified as such and should not be submitted through [www.regulations.gov](http://www.regulations.gov) or email. [www.regulations.gov](http://www.regulations.gov) is an “anonymous access” system, and EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send email directly to EPA, your email address will be automatically captured and included as part of the public comment. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment.

**Docket:** The index to the docket for this action is available electronically at [www.regulations.gov](http://www.regulations.gov) and in hard copy at EPA Region IX, 75 Hawthorne Street, San Francisco, California. While all documents in the docket are listed in the index, some information may be publicly available only at the hard copy location (e.g., copyrighted material), and some may not be publicly available in either location (e.g., CBI). To inspect the hard copy materials, please schedule an appointment during normal business hours with the contact listed in the **FOR FURTHER INFORMATION CONTACT** section.

**FOR FURTHER INFORMATION CONTACT:** Gregory Nudd, U.S. EPA Region 9, 415–947–4107, [nudd.gregory@epa.gov](mailto:nudd.gregory@epa.gov) or [www.epa.gov/region09/air/actions](http://www.epa.gov/region09/air/actions).

**SUPPLEMENTARY INFORMATION:** Throughout this document, the terms “we,” “us,” and “our” mean U.S. EPA.

Table of Contents

- I. PM-10 Air Quality Planning in the Maricopa PM-10 Non-Attainment Area
- II. Overview of Applicable CAA Requirements
- III. Evaluation of the 2012 Five Percent Plan’s Compliance with CAA Requirements
- IV. Summary of Proposed Actions
- V. Statutory and Executive Order Reviews

I. PM-10 Air Quality Planning in the Maricopa PM-10 Non-Attainment Area

The NAAQS are standards for certain ambient air pollutants set by EPA to protect public health and welfare. PM-10 is among the ambient air

pollutants for which EPA has established health-based standards. PM-10 causes adverse health effects by penetrating deep in the lungs, aggravating the cardiopulmonary system. Children, the elderly, and people with asthma and heart conditions are the most vulnerable.

On July 1, 1987 EPA revised the health-based national ambient air quality standards, replacing the standards for total suspended particulates with new standards applying only to particulate matter up to ten microns in diameter (PM-10). 52 FR 24672. At that time, EPA established two PM-10 standards, annual and 24-hour. Effective December 18, 2006, EPA revoked the annual PM-10 standard but retained the 24-hour PM-10 standard. 71 FR 61144 (October 17, 2006). The 24-hour PM-10 standard of 150 micrograms per cubic meter (µg/m³) is attained when the expected number of days with a 24-hour average concentration above 150 µg/m³ per calendar year averaged over a three year period, as determined in accordance with appendix K to 40 CFR part 50, is equal to or less than one. 40 CFR 50.6 and 40 CFR part 50, appendix K.

On the date of enactment of the 1990 Clean Air Act Amendments (CAA or the Act), many areas, including the Maricopa PM-10 Nonattainment Area, meeting the qualifications of section 107(d)(4)(B) of the amended Act were designated nonattainment by operation of law. 56 FR 11101 (March 15, 1991). The Maricopa PM-10 Nonattainment Area is located in the eastern portion of Maricopa County and encompasses the cities of Phoenix, Mesa, Scottsdale, Tempe, Chandler, Glendale, as well as 15 other jurisdictions, four tribes and unincorporated County lands. The nonattainment area also includes the town of Apache Junction in Pinal County. EPA codified the boundaries of the Maricopa PM-10 Nonattainment Area at 40 CFR 81.303.

Once an area is designated nonattainment for PM-10, section 188 of the CAA outlines the process for classifying the area as moderate or serious and establishes the area’s attainment deadline. In accordance with section 188(a), at the time of designation, all PM-10 nonattainment areas, including the Maricopa PM-10 Nonattainment Area, were initially classified as moderate.

A moderate PM-10 nonattainment area must be reclassified to serious PM-10 nonattainment by operation of law if EPA determines after the applicable attainment date that, based on air quality, the area failed to attain by that date. CAA sections 179(c) and



188(b)(2). On May 10, 1996, EPA reclassified the Maricopa PM-10 Nonattainment Area as a serious PM-10 nonattainment area. 61 FR 21372.

As a serious PM-10 nonattainment area, the area acquired a new attainment deadline of no later than December 31, 2001. CAA section 188(c)(2). However, CAA section 188(e) authorizes EPA to grant up to a 5-year extension of that attainment deadline if certain conditions are met by the state. In order to obtain the extension, the state must make a SIP submission showing that: (1) Attainment by the applicable attainment date would be impracticable; (2) the state complied with all requirements and commitments pertaining to the area in the implementation plan for the area; and (3) the plan for the area includes the most stringent measures (MSM) that are included in the implementation plan of any state or are achieved in practice in any state, and can feasibly be implemented in the specific area. Arizona requested an attainment date extension under CAA section 188(e) for the Maricopa PM-10 Nonattainment Area from December 31, 2001 to December 31, 2006.

On July 25, 2002, EPA approved the serious area PM-10 plan for the Maricopa PM-10 Nonattainment Area as meeting the requirements for such areas in CAA sections 189(b) and (c), including the requirements for implementation of best available control measures (BACM) in section 189(b)(1)(B) and MSM in section 188(e). In the same action, EPA approved the submission with respect to the requirements of section 188(e) and granted Arizona's request to extend the attainment date for the area to December 31, 2006. 67 FR 48718. This final action, as well as the two proposals preceding it, provide a more detailed discussion of the history of PM-10 planning in the Maricopa PM-10 Nonattainment Area. See 67 FR 48718 (July 25, 2002); 65 FR 19964 (April 13, 2000); and 66 FR 50252 (October 2, 2001).

On June 6, 2007, EPA found that the Maricopa PM-10 Nonattainment Area failed to attain the 24-hour PM-10 NAAQS by the applicable attainment date of December 31, 2006 (72 FR 31183). Accordingly, the state was required to submit a new plan meeting the requirements of section 189(d) by December 31, 2007.

On December 19, 2007, the Maricopa Association of Governments (MAG) adopted the "MAG 2007 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area" (2007 Five

Percent Plan).<sup>1</sup> On December 21, 2007 the Arizona Department of Environmental Quality (ADEQ) submitted the 2007 Five Percent Plan and two Pinal County resolutions. EPA proposed to partially disapprove this plan on September 9, 2010. 75 FR 54806. On January 25, 2011, prior to EPA's final action on the 2007 Five Percent Plan, Arizona withdrew the plan from the Agency's consideration. As a result of the withdrawal of the 2007 Five Percent Plan, on February 14, 2011, EPA made a finding of failure to make a required SIP submittal. 76 FR 8300. This finding of failure to submit obligated EPA to promulgate a federal implementation plan (FIP) within two years after that date, unless the state submits and EPA approves a SIP submission meeting the requirements of section 189(d) by such date. CAA section 110(c). Because EPA's evaluation of the 2012 Five Percent Plan indicates that it meets the requirements of section 189(d), EPA is proposing to approve the submission in today's action.

The 2012 Five Percent Plan was adopted by MAG on May 23, 2012 and submitted to EPA by ADEQ on May 25, 2012.<sup>2</sup> MAG adopted and ADEQ submitted the 2012 Five Percent Plan specifically to address the CAA requirements in section 189(d) for the Maricopa PM-10 Nonattainment Area. EPA reviewed the submission and found it to be complete on July 20, 2012.<sup>3</sup> EPA is proposing approval of the submission as meeting the requirements of section 189(d) in today's action.

II. Overview of Applicable CAA Requirements

As a serious PM-10 nonattainment area that failed to meet its applicable attainment date, December 31, 2006, the

<sup>1</sup> MAG has responsibility for air quality and transportation planning in the metropolitan Phoenix region. MAG develops air quality plans in coordination with ADEQ, the Arizona Department of Transportation, and the Maricopa County Air Quality Department. See 2012 Five Percent Plan at ES-1, Appendix E, Exh. 2 (Resolution to Adopt the MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area).

<sup>2</sup> Also on May 25, 2012, Arizona submitted several Arizona statutes, Maricopa County rules, a Maricopa County ordinance, and related appendices for approval into the Arizona SIP. By letter dated May 21, 2013, Arizona submitted redacted materials to clarify its May 25, 2012 submittal. By letter dated September 26, 2013, Arizona withdrew its May 21, 2013 submittal and submitted a table and redacted materials as a supplement to the May 25, 2012 submittal to clarify the materials it is requesting EPA to approve into the Arizona SIP.

<sup>3</sup> Letter from Deborah Jordan, Director, Air Division, USEPA Region 9 to Henry Darwin, Director, Arizona Department of Environmental Quality dated July 20, 2012.

Maricopa PM-10 Nonattainment Area is subject to CAA section 189(d). Section 189(d) provides that the state shall "submit within 12 months after the applicable attainment date, plan revisions which provide for attainment of the PM-10 air quality standard and, from the date of such submission until attainment, for an annual reduction of PM-10 or PM-10 precursor emissions within the area of not less than 5 percent of the amount of such emissions as reported in the most recent inventory prepared for the area."

The general planning and control requirements for all nonattainment plans are found in CAA sections 110 and 172. More specific planning and control requirements relevant to the PM-10 NAAQS are found in Part D, Subpart 4, in CAA sections 188 and 189. EPA has issued a General Preamble<sup>4</sup> and Addendum to the General Preamble<sup>5</sup> to provide guidance to states for meeting the CAA's requirements for the PM-10 NAAQS. The General Preamble mainly addresses the requirements for moderate nonattainment areas and the Addendum addresses the requirements for serious nonattainment areas. EPA has also issued other guidance documents related to PM-10 plans which are discussed and cited below. The specific PM-10 plan requirements addressed by this proposed action are summarized below.

A. Emissions Inventories

CAA section 172(c)(3) requires that an attainment plan include a comprehensive, accurate, and current inventory of actual emissions from all sources of the relevant pollutants.

B. Section 189(d) Attainment Demonstration and Five Percent Requirement

For serious PM-10 nonattainment areas that do not attain the PM-10 NAAQS by the applicable attainment date, CAA section 189(d) requires the state to submit plan revisions that provide for attainment of the NAAQS (i.e., an attainment demonstration) and provide for an annual five percent reduction in PM-10 or PM-10 precursor emissions for each year from the date of

<sup>4</sup> "State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990," 57 FR 13498 (April 16, 1992) (General Preamble) and 57 FR 18070 (April 28, 1992).

<sup>5</sup> "State Implementation Plans for Serious PM-10 Nonattainment Areas, and Attainment Date Waivers for PM-10 Nonattainment Areas Generally; Addendum to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990," 59 FR 41998 (August 16, 1994) (Addendum).

submission until attainment.<sup>6</sup> Section 189(d) specifies that the state must submit these plan revisions within 12 months of the applicable attainment date that the area failed to meet.

C. Reasonable Further Progress and Quantitative Milestones

CAA section 172(c)(2) requires that implementation plans demonstrate reasonable further progress (RFP) as defined in section 171(1). Section 171(1) defines RFP as "such annual incremental reductions in emissions of the relevant air pollutant as are required by this part [part D of title I] or may reasonably be required by the Administrator for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date." The general RFP requirement of section 172(c)(2) applies to SIP submissions necessary to meet CAA section 189(d) for the PM-10 NAAQS.

In addition, CAA section 189(c)(1) specifically applicable to the PM-10 NAAQS requires that an implementation plan contain quantitative milestones which will be achieved every 3 years and which will demonstrate that RFP is being met.

D. Contingency Measures

CAA section 172(c)(9) requires that implementation plans provide for "the implementation of specific measures to be undertaken if the area fails to make reasonable further progress, or to attain the NAAQS by the attainment date applicable under this part [part D of title I]. Such measures are to take effect in any such case without further action by the State or the Administrator." The contingency measure requirement of CAA section 179(c)(9) applies to the SIP submissions necessary to meet CAA section 189(d) for the PM-10 NAAQS.

<sup>6</sup> EPA has previously determined that PM-10 precursors are not significant contributors to PM-10 levels in the Maricopa County PM-10 Nonattainment Area. See 65 FR 19971 (April 13, 2000); 67 FR 48718 (July 25, 2002). In those rulemaking notices, EPA specifically determined that the contribution from major stationary sources of PM-10 precursors was less than 0.5 percent of the annual PM-10 NAAQS. See e.g., 65 FR 19971. Subsequent technical studies confirm that ambient PM-10 levels in the nonattainment area are primarily from crustal material and are not derived from organic compounds, nitrates or sulfates. See e.g., "PM-10 Source Attribution and Deposition Study," prepared by Sierra Research, Inc. for Maricopa Association of Governments (March 2008) at pg. 2 ("Local monitoring by co-located PM-10 and PM-2.5 monitors confirms that PM-2.5 on high PM-10 days is a small fraction of the PM-10 concentrations. Therefore, the PM-10 problem in the Maricopa County nonattainment area is largely attributable to coarse particles, comprised primarily of geologic material."); see also, id. at Chapter 3.

E. Transportation Conformity and Motor Vehicle Emissions Budgets

Transportation conformity is required by CAA section 176(c). Our conformity rule (40 CFR part 93, subpart A) requires that transportation plans, programs, and projects conform to state air quality implementation plans and establishes the criteria and procedures for determining whether or not they do so. Conformity to a SIP means that transportation activities will not produce new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS or any interim milestone. Once a SIP that contains motor vehicle emissions budgets (MVEBs) has been submitted to EPA, and EPA has found them adequate, these budgets are used for determining conformity: Emissions from planned transportation activities must be less than or equal to the budgets.

F. Adequate Authority

CAA section 110(a)(2)(E)(i) requires that implementation plans provide necessary assurances that the state (or the general purpose local government or regional agency designated by the state for this purpose) will have adequate personnel, funding and authority under state law to carry out the requirements of such plan. Requirements for legal authority are further defined in 40 CFR part 51, subpart L (51.230–51.232) and for resources in 40 CFR 51.280. States and responsible local agencies must also demonstrate that they have the legal authority to adopt and enforce provisions of the SIP and to obtain information necessary to determine compliance.

III. Evaluation of the 2012 Five Percent Plan's Compliance With CAA Requirements

A. Emissions Inventories

CAA section 172(c)(3) requires all nonattainment area plans to include a comprehensive, accurate, and current inventory of actual emissions from all sources of the relevant pollutant or pollutants in the area at issue. Our policies require that the inventory be fully documented. The 2012 Five Percent Plan uses the comprehensive "2008 PM-10 Periodic Emissions Inventory for Maricopa County, Revised 2011" (2008 PM-10 Inventory) as a starting point in the analysis.<sup>7</sup> The 2008

<sup>7</sup> The 2008 PM-10 Inventory is included as Appendix A, Exhibit 1 to the 2012 Five Percent Plan. The 2008 PM-10 Inventory includes revisions made by MAG in 2011 to incorporate more recent vehicle registration data, and updated models and planning assumptions. See 2012 Five Percent Plan, Appendix B, Exh. 1, at II-10 to II-17.

PM-10 Inventory was developed by the Maricopa County Air Quality Department (MCAQD) and the Maricopa Association of Governments (MAG)—MCAQD prepared emission estimates for point sources and most area and nonroad mobile sources, and MAG prepared emission estimates for onroad mobile, biogenic and certain area and nonroad mobile sources. 2012 Five Percent Plan, Appendix A, Exhibit 1. The 2008 PM-10 Inventory was adjusted by MAG for economic and population changes to provide projected emissions inventories for 2007 through 2012. 2012 Five Percent Plan at p. 3–2; Appendix B, Exh. 1, Section II.

The 2008 PM-10 Inventory describes annual emissions from point, area, nonroad, on-road, and nonanthropogenic sources in the Maricopa County and the Pinal County portion of the nonattainment area.<sup>8,9</sup> The 2008 PM-10 Inventory shows that the most significant sources of emissions in the Maricopa County Nonattainment Area are unpaved roads and alleys (21 percent), construction-related fugitive dust (17 percent), paved road dust (17 percent) and windblown dust (9 percent). 2012 Five Percent Plan, Table 5–3. The 2008 PM-10 Inventory and related inventories for 2007 through 2012 are well documented by documentation meeting our guidance criteria. See "Emissions Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations", EPA, August 2005 (2005 EI Guidance).

The base year, 2008, is a reasonably current year, considering the length of time needed to develop an inventory, perform the modeling, develop and adopt control measures, and hold public hearings on such a large and technically-complex plan.

The MAG plan inventories are sufficiently comprehensive, covering all sources of PM-10 that have been found to be important sources of relevant emissions in this and other PM-10 nonattainment areas. The 2008 PM-10 Inventory includes emissions for certain PM-10 precursors (nitrogen oxides, sulfur dioxide, and ammonia). The

<sup>8</sup> The 2008 PM-10 Inventory notes that Maricopa County is approximately 9,223 square miles, whereas the Maricopa County PM-10 Nonattainment Area is approximately 2,888 square miles. See 2012 Five Percent Plan at p. 3–2.

<sup>9</sup> The 2008 PM-10 Inventory also references "typical daily emissions." The 2012 Five Percent Plan does not rely on "typical daily emissions" for the attainment demonstration or the five percent reduction in annual emissions; therefore, we did not comprehensively analyze these values in connection with today's proposed action.



2007–2012 projected inventories based on the 2008 PM-10 Inventory do not include emissions of PM-10 precursors; however, EPA has previously determined that these precursors do not play a significant part in the PM-10 problems in the Maricopa County PM-10 Nonattainment Area. *See* 65 FR 19971 (April 13, 2000); *see also*, note 6. EPA proposes to find again that precursors still do not play a significant part in PM-10 problems in the Maricopa County PM-10 Nonattainment Area.

In developing the inventory, MAG and MCAQD followed EPA's 2005 guidance and recommendations regarding the use of emission factors, activity estimates, and control factors, and the other source specific emission estimation methodologies. The relative accuracy of each estimate underwent the proscribed quality assurance procedures, documented in the 2008 PM-10 Inventory, Sections 2.7, 3.7, 4.14 and 5.5, to minimize possible errors. MCAQD used reasonable and accurate methods to calculate rule effectiveness.

Rule effectiveness is the estimate of the extent to which a state rule in the SIP is achieving the intended reductions. A rule is 100 percent effective only if every impacted source is in compliance at all times. Often, rules are not 100 percent effective, and this aspect must be considered when calculating the emissions reductions from the rule. The 2008 PM-10 Inventory generally complies with EPA's guidance on calculating rule effectiveness found in Appendix B of EPA's 2005 EI Guidance.

EPA's analysis indicates the inventory is sufficiently accurate for the purposes of the 2012 Five Percent Plan. Because we find that the inventory is current, comprehensive, and accurate, we propose to approve the 2008 PM-10 Inventory and the adjusted inventories for 2007, 2009, 2010, 2011 and 2012 under CAA section 172(c)(3).

#### B. Attainment Demonstration

EPA determines whether an area's air quality is meeting the PM-10 NAAQS based on complete, quality assured, and certified data collected at state and local air monitoring stations (SLAMS) in the nonattainment area. Attainment of the 24-hour PM-10 standard is determined by calculating the average number of expected exceedances of the standard over a three-year period. Specifically, the 24-hour PM-10 standard is attained when the expected number of exceedances averaged over a three-year period is less than or equal to one at each monitoring site within the

nonattainment area.<sup>10</sup> In the case of a monitor that collects daily data, and has a full three years worth of adequate data, that monitor should show no more than one exceedance of the standard in a three year period. If all of the monitors in the nonattainment area meet the standard for the requisite period reflecting the form of the 24 hour PM-10 NAAQS, then the area has attained the standard. This point is discussed in more detail in our technical support document (TSD).<sup>11</sup>

#### 1. Attainment Deadline

The 2012 Five Percent Plan predicts attainment of the PM-10 NAAQS by December 31, 2012. For an area determined by EPA to have failed to attain by the applicable attainment date for a serious PM-10 nonattainment area, CAA sections 172(a)(2) and 179(d)(3) specify that the new attainment date is as soon as practicable, but no later than 5 years from the date of publication of the nonattainment finding in the *Federal Register*. Pursuant to these provisions, the attainment date for the Maricopa PM-10 Nonattainment Area would be as expeditiously as practicable, but not later than June 6, 2012.<sup>12</sup> CAA section 172(a)(2), however, authorizes EPA to extend the attainment deadline to the extent it deems appropriate for a period no greater than 10 years from the publication of the nonattainment finding, "considering the severity of nonattainment and the availability and feasibility of pollution control measures." EPA believes such an extension to December 31, 2012, is warranted, based on various factors, including the following.

First, EPA notes that the PM-10 NAAQS is an calendar-based standard, which makes setting a mid-year attainment deadline (such as June 6) less appropriate than setting an end of calendar year date that would include the entire year of monitored data for comparison against the NAAQS. In addition, the 2012 Five Percent Plan explains that an extension is reasonable because modeled attainment of the PM-10 NAAQS requires implementation of a new measure, the Dust Action General Permit. *See* 2012 Five Percent Plan at p. 6–45 through 6–47. The Dust Action General Permit is a new measure developed by ADEQ and MAG following EPA's identification of approvability issues in the 2007 Five Percent Plan, including flaws in the

emissions inventory. These flaws required Arizona and MAG to develop a new emissions inventory and new attainment demonstration and to convene technical and stakeholder groups for appropriate input. One result of these processes was the Dust Action General Permit, which identifies a series of Best Management Practices (BMPs) for specific dust generating operations. When ADEQ's Maricopa County Dust Control Forecast predicts that a day is at high risk for dust generation, those dust generating operations that are not already required to control dust through a permit issued by the Arizona Department of Environmental Quality (ADEQ) or the Maricopa County Air Quality Department (MCAQD) are expected to choose and implement at least one BMP to reduce or prevent PM-10 emissions. The Dust Action General Permit required action by the Arizona Legislature and was not finalized until December 30, 2011.<sup>13</sup> ADEQ and MAG estimate that the Dust Action General Permit will increase the rule effectiveness of Rule 310.01 by one percent on high wind days, or 190 tons on an annual basis. 2012 Five Percent Plan at p. 5–4 and p. 6–45. ADEQ and MAG also state that modeled attainment cannot be shown without the reductions attributable to the Dust Action General Permit. It was necessary to extend the attainment date until December 2012 in order for the Dust Action General Permit to be adopted and implemented.

For these reasons, EPA concurs that an extension of the attainment deadline to December 31, 2012 is warranted.

#### 2. Modeled Attainment Demonstration

The 2012 Five Percent Plan shows attainment of the PM-10 NAAQS through modeled attainment demonstrations for the area near the Salt River in central Phoenix, (including the West 43rd Avenue monitor which recorded the most PM-10 exceedances during high wind conditions for the period 2005–2010) and for the entire Maricopa County PM-10 Nonattainment Area. *See generally*, 2012 Five Percent Plan, Chapter 6. MAG conducted modeling for two design days: May 4, 2007 (based on data from the West 43rd Avenue monitor), and June 6, 2007 (based on data from the Higley and West 43rd Avenue monitors). In consultation with ADEQ and EPA, MAG selected the design days and locations based on the fact that, for the past few years, measured exceedances of the PM-10 NAAQS have been associated with

<sup>13</sup> Arizona House Bill 2208, which added ARS 49–457.05 and authorized creation of the Dust Action General Permit, was enacted in April 2011.

elevated winds. MAG's selected design days were not days that would be likely to be considered a high wind exceptional event (i.e., the geographic extent of the exceedances did not suggest the occurrence of an area-wide storm event). EPA's detailed analysis of the modeling can be found in Section IV of the TSD for this action. The modeling was conducted in a way that was consistent with EPA guidance and the input of EPA technical experts. The modeling indicates that the emission reductions in the plan should result in PM-10 levels that are consistent with the NAAQS by December 31, 2012. This attainment modeling was confirmed by the monitoring data as described in the next section of this proposal. Therefore, EPA proposes to find that the 2012 Five Percent Plan's attainment demonstration provides sufficient assurance that the control measures implemented in the nonattainment area will be sufficient to ensure ongoing compliance with the PM-10 standard in the Maricopa County PM-10 Nonattainment Area.

#### 3. Monitoring Data Showing Attainment

EPA is also taking into account the fact that monitoring data recorded at air quality monitors throughout the Maricopa County PM-10 Nonattainment Area show that the area in fact reached attainment of the PM-10 NAAQS by December 31, 2012. Attainment of the 24-hour PM-10 standard is determined by calculating the average number of expected exceedances of the standard over a three-year period. Specifically, the 24-hour PM-10 standard is attained when the expected number of exceedances averaged over a three-year period is less than or equal to one at each monitoring site within the nonattainment area. During the 2010–2012 time period, MCAQD operated fifteen PM-10 monitors, while ADEQ and the Pinal County Air Quality Control District (PCAQCD) operated an additional three PM-10 monitoring stations in the area. EPA's analysis indicates that all of these monitors have an expected exceedance of less than one for the years 2010–2012.

EPA's review of monitoring data for the 24-hour PM-10 NAAQS for the Maricopa County PM-10 Nonattainment Area includes exceedances of the standard recorded during the 2010–2012 time period. However, EPA does not consider these exceedances of the NAAQS to be violations because they were the result of exceptional events. ADEQ submitted three packages containing demonstrations for high wind PM-10 exceptional events covering a total of one hundred thirty-three measured exceedances occurring

over twenty-seven days in the years 2011 and 2012 at monitors within the Maricopa County PM-10 Nonattainment Area. EPA reviewed the documentation that ADEQ provided to demonstrate that the exceedances on these days meet the criteria for an exceptional event in EPA's Exceptional Events Rule (EER).<sup>14</sup> EPA concurred with ADEQ's requests for exceptional event determinations, based on the weight of evidence, that one hundred thirty-one of the one hundred thirty-three exceedances were caused by high wind exceptional events.<sup>15</sup> Accordingly EPA has determined that the monitored exceedances associated with these exceptional events should not be used for regulatory purposes, including for evaluation of the CAA section 189(d) plan submission. Excluding these exceedances caused predominantly by uncontrollable emissions, EPA proposes to determine that the Maricopa County PM-10 Nonattainment Area has attained the 24-hour PM-10 NAAQS based on the monitors operated by ADEQ, MCAQD and PCAQD. This is consistent with attainment of the standard projected by the state in the 2012 Five Percent Plan.

Monitors operated by tribal governments in the nonattainment area also provide data that can be considered to evaluate attainment. The Salt River Pima-Maricopa Indian Community operates three PM-10 monitoring stations on tribal land within the Maricopa County PM-10 Nonattainment Area that meet the requirements of 40 CFR part 58 and are therefore appropriate to consider when determining if the area has attained the standard. As our analysis in Section III of the TSD indicates, these monitors show exceedances of the standard on three days during the 2010–2012 time period. Two of those exceedances (both on July 8, 2011) were during area-wide storms that resulted in exceedances at the non-tribal monitors that EPA has already determined were caused by exceptional events. EPA TSD Section III. The third exceedance (on July 2, 2011) appears to be related to local sources rather than an exceptional event. Pursuant to 40 CFR 49.10, however, EPA cannot disapprove a state SIP submittal because of the "failure to address air resources within the exterior boundaries of an Indian Reservation or other areas within the jurisdiction of an Indian tribe." Therefore, we did not further consider these exceedances as

part of this proposed action to approve the 2012 Five Percent Plan.

The plan submitted by the state projected that the Maricopa County PM-10 Nonattainment Area would attain by December 31, 2012, because that was the most expeditious attainment date practicable considering the severity of nonattainment and the availability of controls in the area. Monitoring data for the years 2010–2012, taking into account EPA's determinations with respect to exceptional events during that period, indicate that the area attained the standard as of December 31, 2012.<sup>16</sup>

EPA proposes to find that the 2012 Five Percent Plan meets the requirement to demonstrate attainment by the appropriate attainment date. This proposed finding is based on our analysis of the modeling described in the plan and analysis of the monitoring data for the years 2010–2012.

#### C. Five Percent Requirement

CAA section 189(d) requires a state with a serious PM-10 nonattainment area that fails to attain the PM-10 NAAQS by the applicable attainment deadlines to submit within 12 months after the applicable attainment date plan revisions which provide an annual five percent reduction in emissions of PM-10 or PM-10 precursors in the area from the date of the submission until attainment, based on the most recent inventory.

The 2012 Five Percent Plan's demonstration of annual five percent reductions is found in Chapter 5. Arizona and MAG used the 2008 PM-10 Inventory as the "most recent inventory" and derived emissions levels for years 2007–2012 based upon the 2008 PM-10 Inventory. *See* Five Percent Plan at p. 5–4. The demonstration of annual five percent reductions uses 2007 as the baseline from which the five percent reductions are calculated and as point at which the reductions should start.<sup>17</sup> The 2012 Five Percent Plan's

<sup>16</sup> Additional exceedances of the PM-10 NAAQS occurred on six days between April and October 2013. Arizona has indicated its intent to submit documentation regarding these exceedances to EPA and to request that EPA concur with the state's determination that they qualify as exceptional events. EPA will evaluate the state's submissions and requests consistent with the EER and relevant guidance.

<sup>17</sup> EPA believes Arizona's use of 2007 as the baseline for five percent reductions is reasonable and consistent with Congress' intent. Section 189(d) states that plans are due within 12 months of the missed attainment deadline and that the plans should provide for annual five percent reductions from the date of the submission until attainment. Arizona's attainment deadline was December 31, 2006. 67 FR 48718 (July 25, 2002). Accordingly, a submittal to fulfill section 189(d) was due by December 31, 2007, and reductions should have begun to occur as of that date. *See* 72 FR 31183 (June 6, 2007). The decline in emissions from 2007

<sup>14</sup> 40 CFR 50.1(j), (k), (l), 50.14; 51.930.

<sup>15</sup> *See* Letters from Jared Blumenfeld, Regional Administrator, EPA Region 9, to Eric Massey, Director, Air Division, ADEQ, dated September 6, 2012, May 6, 2013, and July 1, 2013.



demonstration is summarized in Table 1,<sup>18 19</sup> below.

TABLE 1—2012 FIVE PERCENT PLAN EMISSIONS BY YEAR

Year	2007	2008	2009	2010	2011	2012
Baseline Inventory <sup>18</sup>	59,218	56,681	52,123	50,497	49,743	49,673
Controlled Inventory <sup>19</sup>	59,218	49,231	45,600	44,062	43,438	43,130
Annual Reduction		9,987	3,631	1,538	624	308
Cumulative Reduction		9,987	13,618	15,156	15,780	16,088
Target Reduction		2,961	5,922	8,883	11,844	14,805

The “baseline inventory” values are derived from the 2008 PM-10 Inventory as adjusted by population and economic growth factors from the University of Arizona. *See* 2012 Five Percent Plan, at p. 5–4 and p. 5–5, Table 5–2. The “controlled inventory” values show emission levels after taking into account reductions attributable to adopted control measures, specifically, Rules 310, 310.01 and 316, and the Dust Action General Permit. *See* 2012 Five Percent Plan at p. 5–1 through 5–6; *see also*, p. 5–7, Table 5–3. “Annual reduction” is the mathematical difference between the prior year controlled inventory and the current year controlled inventory. “Cumulative reduction” is the running total of actual reductions starting with 2007 and continuing to the attainment year of 2012. The target required reduction is five percent of the base year (2007) inventory (2,961 tons per year) for the first year (2008), and additional reductions of five percent per year, until the attainment year of 2012.

The “controlled inventory” values reflect emission reductions due to improved compliance with Maricopa County Rules 310 (Fugitive Dust from Dust-Generating Operations), 310.01 (Fugitive Dust from Non-Traditional Sources of Fugitive Dust) and 316 (Nonmetallic Mineral Processing) as well as the benefits of the Dust Action General Permit in 2012.<sup>20</sup> Maricopa County has been inspecting sources subject to these rules and tracking the extent to which the sources are complying with the regulations. Based on these data, MCAQD calculated rule effectiveness values for each rule. *See* 2012 Five Percent Plan, Appendix B, Chapter 3.

to 2008 shows that reductions did, in fact, begin to occur within that time frame. *See* Table 1. Arguably, these reductions occurred outside the literal time frame specified by Congress (i.e., “the date of the submission” of the plan) because the 2012 Five Percent Plan was not submitted until May 26, 2012. We note that Arizona had submitted the 2007 Five Percent Plan on December 21, 2007 (although it withdrew the plan on January 25,

The 2012 Five Percent Plan demonstrates compliance with the five percent reduction requirement by comparing the cumulative reductions from the Dust Action General Permit and increased effectiveness of the Maricopa County rules against the total five percent reductions each year. Most of the required reductions were achieved in the early years of the plan. EPA encourages this approach as it accelerates the environmental benefits of the reductions.<sup>21</sup>

D. Reasonable Further Progress and Quantitative Milestones

Pursuant to sections 172(c)(3) and 189(c)(1), the state must demonstrate RFP in the 2012 Five Percent Plan. We have explained in guidance that for areas such as the Maricopa County PM-10 Nonattainment Area where “the nonattainment problem is attributed to area type sources (e.g., fugitive dust, residential wood combustion, etc.), RFP should be met by showing annual incremental emission reductions sufficient generally to maintain linear progress towards attainment. Total PM-10 emissions should not remain constant or increase from 1 year to the next in such an area.” Addendum at 42015. Further, we have stated that, “in reviewing the SIP, EPA will determine whether the annual incremental emission reductions to be achieved are reasonable in light of the statutory objective to ensure timely attainment of the PM-10 NAAQS.” *Id.* at 42016.

CAA section 189(c) further requires PM-10 attainment plans to contain quantitative milestones that are to be achieved every three years and that are consistent with RFP for the area. These quantitative milestones should consist of elements that allow RFP to be

quantified or measured objectively. Specifically, states should identify and submit quantitative milestones that allow for evaluation of whether the plan is obtaining emission reductions adequate to achieve the NAAQS by the applicable attainment date. *Id.* at 42016.

The 2012 Five Percent Plan provides a reasonable further progress (RFP) demonstration in Chapter 6. *See* 2012 Five Percent Plan at 6–34 through 6–36. This analysis uses the controlled inventory totals by year as shown in Table 1 of this proposal. Specifically, the 2012 Five Percent Plan shows the following levels of PM-10, which decline between 2007 and 2012:

2007—59,218 tons  
2008—49,231 tons  
2009—45,600 tons  
2010—44,062 tons  
2011—43,438 tons  
2012—43,130 tons

The analysis required for the five percent demonstration provides annual emission targets between the base year of 2007 and the attainment year of 2012. These annual totals show a steady downward trend in emissions that fulfills the milestone requirement of every three years. *See* 2012 Five Percent Plan at 6–36, Fig. 6–6. The trend is more sharply downward in the initial years because most of the improvements in rule effectiveness occurred in 2008. *Id.* at 35–36. EPA proposes to find that the 2012 Five Percent Plan has demonstrated reasonable further progress and that by setting annual target emission levels, the plan has exceeded the requirement to provide for milestones every three years.

E. Contingency Measures

CAA section 172(c)(9) requires that attainment plans provide for the

74 FR 38554 (Nov. 13, 2009). EPA has also approved Arizona statutory provisions related to the Dust Action General Permit. 78 FR 72579 (Dec. 3, 2013). EPA intends to propose action on the Dust Action General Permit in the near future.

<sup>21</sup> This approach is consistent with the approach taken in a previous section 189(d) plan for the San Joaquin Valley. *See* 69 FR 5411 (Feb. 4, 2004) and 69 FR 30006 (May 25, 2004).

implementation of specific measures to be undertaken if the area fails to meet RFP requirements or fails to attain the PM-10 standard as projected in the plan. That section further requires that such measures are to take effect in any such case without further action by the state or EPA. The CAA does not specify how many contingency measures are necessary nor does it specify the level of emission reductions they must produce.

In guidance we have explained that the purpose of contingency measures is to ensure that additional emission reductions beyond those relied on in the attainment and RFP demonstrations are available immediately if there is a failure to meet RFP requirements or a failure to attain by the applicable statutory date. Addendum at 42014–42015. Contingency measures must consist of measures that the state is not otherwise relying on to meet other attainment plan requirements in the area. Thus, these additional emission reductions that will be achieved by the contingency measures ensure continued progress towards attainment while the state is revising the SIP to correct the failure to meet RFP or to attain. To that end, we recommend that contingency measures for PM-10 nonattainment areas provide emission reductions equivalent to one year’s average increment of RFP. *Id.*

In interpreting the requirement that the contingency measures must “take effect without further action by the State or the Administrator,” the General Preamble provides the following general guidance: “[s]tates must show that their contingency measures can be implemented with minimal further action on their part and with no additional rulemaking actions such as public hearings or legislative review.” General Preamble at 13512.<sup>22</sup> Further, “[i]n general, EPA will expect all actions needed to affect full implementation of the measures to occur within 60 days after EPA notifies the State of its failure.” *Id.* The Addendum at 42015 reiterates this interpretation.

We have also interpreted section 172(c)(9) to allow states to implement contingency measures before they are triggered by a failure of RFP or attainment as long as those measures are intended to achieve emission reductions

over and beyond those relied on in the attainment and RFP demonstrations. *Id.*; *see also*, *LEAN v. EPA*, 382 F.3d 575 (5th Cir. 2004). The 2012 Five Percent Plan calculated the target for contingency measure reductions by subtracting the attainment year 2012 emissions (43,130 tons) from the 2007 baseline emissions (59,218 tons) and dividing by five years, yielding a target of 3,218 tons per year. 2012 Five Percent Plan at 6–37. EPA proposes to find that this method of calculating the target for contingency measure reductions is consistent with CAA requirements and EPA guidance and we propose to approve this target value for contingency measures.

The contingency measures are shown in Table 6–22 of the 2012 Five Percent Plan and are composed of various methods to reduce fugitive dust emissions from roads. The most significant reductions are from paving dirt roads and alleys; other reductions result from street sweeping of freeways, ramps and frontage roads, lower speed limits on dirt roads and alleys, and paving and stabilizing of unpaved shoulders. The measures were implemented in the years 2008 through 2012. These contingency measures are surplus to the measures used to demonstrate five percent reductions, RFP, and attainment. The method used to estimate emissions reductions from these contingency measures are consistent with EPA recommended calculation methods for such measures and the total reductions exceed the target of one year of RFP. EPA proposes to approve the contingency measures described in the 2012 Five Percent Plan.

<sup>22</sup> EPA elaborated on its interpretation of this language in section 172(c)(9) in the General Preamble in the context of the ozone standard: “The EPA recognizes that certain actions, such as notification of sources, modification of permits, etc., would probably be needed before a measure could be implemented effectively.” General Preamble at 13512.

F. Transportation Conformity and Motor Vehicle Emissions Budgets

Transportation conformity is required by CAA section 176(c). Our conformity rule (40 CFR part 93, subpart A) requires that transportation plans, programs, and projects conform to state air quality implementation plans and establishes the criteria and procedures for determining whether or not they do so. Conformity to a SIP means that transportation activities will not produce new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS or the timely achievement of interim milestones. The 2012 Five Percent Plan specifies the maximum transportation-related PM-10 emissions allowed in the proposed attainment year, 2012, i.e., the MVEB of 54.9 metric tons per day (mtpd). 2012 Five Percent Plan at p. 6–43. This budget includes emissions from road construction, vehicle exhaust, tire

and brake wear, dust generated from unpaved roads and re-entrained dust from vehicles traveling on paved roads. This budget is based on the 2012 emissions inventory that was projected from the 2008 PM-10 Inventory and reflects emission reductions that the plan expects will result from the control measures. The budget is consistent with the attainment, five percent and RFP demonstrations in the Plan.

On September 12, 2013, we announced receipt of the 2012 Five Percent Plan on the Internet and requested public comment on the adequacy of the MVEB by October 15, 2013. We did not receive any comments during the comment period. During that time we reviewed the MVEB and preliminarily determined that it met the adequacy criteria in 40 CFR 93.118(e)(4) and (5). We sent a letter to ADEQ and MAG dated November 22, 2013 stating that the 2012 motor vehicle PM-10 emissions budget for the Maricopa area in the submitted plan was adequate. Our finding was published in the *Federal Register* on December 5, 2013, effective December 20, 2013. 78 FR 73188.

Now that EPA has thoroughly reviewed the submitted SIP, we are proposing to approve the MVEB for 2012 as part of our approval of the 2012 Five Percent Plan. EPA has determined that the MVEB emission target is consistent with emission control measures in the SIP and the attainment demonstration, five percent demonstration and RFP demonstration. The details of EPA’s evaluation of the MVEB for compliance with the budget adequacy criteria of 40 CFR 93.118(e) is provided in a separate document included in the docket of this rulemaking.<sup>23</sup>

G. Adequate Legal Authority

Section 110(a)(2)(E)(i) of the Clean Air Act requires that implementation plans provide necessary assurances that the state (or the general purpose local government) will have adequate personnel, funding and authority under state law. Requirements for legal authority are further defined in 40 CFR part 51, subpart L (section 51.230–232) and for resources in 40 CFR 51.280.

States and responsible local agencies must demonstrate that they have the legal authority to adopt and enforce provisions of the SIP and to obtain information necessary to determine compliance. These requirements are addressed in cover letters and submittal

<sup>23</sup> *See* “Transportation Conformity Adequacy Review” by Greg Nudd, EPA Region 9, November 11, 2013.



package for the 2012 Five Percent Plan.<sup>24</sup>

MAG derives its authority to develop and adopt air quality plans, including the 2012 Five Percent Plan, from ARS 49–406 and from a February 7, 1978 letter from the Governor of Arizona designating MAG as responsible for those tasks.<sup>25</sup> ADEQ is authorized to adopt and submit the 2012 Five Percent Plan by ARS 49–404 and ARS 49–406. MCAQD implements air quality programs within Maricopa County. Pinal County Air Quality Control District implements air quality programs within Pinal County.

For the reasons discussed above, we propose to find that the requirements of section 110(a)(2)(E) and related regulations have been met with respect to legal authority.

#### IV. Summary of Proposed Actions

EPA is proposing to approve the 189(d) plan for the Maricopa County (Phoenix) PM-10 nonattainment area. Specifically, we propose to approve the following:

(A) The 2008 baseline emissions inventory and the 2007, 2009, 2010, 2011 and 2012 projected emission inventories as meeting the requirements of CAA sections 172(c)(3);

(B) the attainment demonstration as meeting the requirements of CAA sections 189(d) and 179(d)(3);

(C) the 5% demonstration as meeting the requirements of CAA section 189(d);

(D) the reasonable further progress and quantitative milestone demonstrations as meeting the requirements of CAA section 172(c)(2) and 189(c);

(E) the contingency measures as meeting the requirements of CAA sections 172(c)(9); and

(F) the Motor Vehicle Emissions Budget as compliant with the budget adequacy requirements of 40 CFR 93.118(e).

#### V. Statutory and Executive Order Reviews

##### A. Executive Order 12866, Regulatory Planning and Review

The Office of Management and Budget (OMB) has exempted this regulatory action from Executive Order 12866, entitled “Regulatory Planning and Review.”

<sup>24</sup> See Completeness Determination Checklist (EPA, July 2, 2012) for details on the location of the documentation of authority.

<sup>25</sup> Letter from Wesley Bolin, Governor of Arizona, to Douglas M. Costle, Administrator of EPA, February 7, 1978, 2012 Five Percent Plan, Appendix E, Exh. 2.

##### B. Paperwork Reduction Act

This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* Burden is defined at 5 CFR 1320.3(b).

##### C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions.

This rule will not have a significant impact on a substantial number of small entities because SIP approvals or disapprovals under section 110 and subchapter I, part D of the Clean Air Act do not create any new requirements but simply approve or disapprove requirements that the State is already imposing. Therefore, because the proposed Federal approval of the SIP does not create any new requirements, I certify that this action will not have a significant economic impact on a substantial number of small entities.

Moreover, due to the nature of the Federal-State relationship under the Clean Air Act, preparation of flexibility analysis would constitute Federal inquiry into the economic reasonableness of state action. The Clean Air Act forbids EPA to base its actions concerning SIPs on such grounds. *Union Electric Co., v. U.S. EPA*, 427 U.S. 246, 255–66 (1976); 42 U.S.C. 7410(a)(2).

##### D. Unfunded Mandates Reform Act

Under sections 202 of the Unfunded Mandates Reform Act of 1995 (“Unfunded Mandates Act”), signed into law on March 22, 1995, EPA must prepare a budgetary impact statement to accompany any proposed or final rule that includes a Federal mandate that may result in estimated costs to State, local, or tribal governments in the aggregate; or to the private sector, of \$100 million or more. Under section 205, EPA must select the most cost-effective and least burdensome alternative that achieves the objectives of the rule and is consistent with statutory requirements. Section 203 requires EPA to establish a plan for informing and advising any small governments that may be significantly or uniquely impacted by the rule.

EPA has determined that the proposed approval action does not

include a Federal mandate that may result in estimated costs of \$100 million or more to either State, local, or tribal governments in the aggregate, or to the private sector. This Federal action proposes to approve pre-existing requirements under State or local law, and imposes no new requirements. Accordingly, no additional costs to State, local, or tribal governments, or to the private sector, result from this action.

##### E. Executive Order 13132, Federalism

Executive Order 13132 (64 FR 43255, August 10, 1999) revokes and replaces Executive Orders 12612 (Federalism) and 12875 (Enhancing the Intergovernmental Partnership). Executive Order 13132 requires EPA to develop an accountable process to ensure “meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.” “Policies that have federalism implications” is defined in the Executive Order to include regulations that have “substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.” Under Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the proposed regulation. EPA also may not issue a regulation that has federalism implications and that preempts State law unless the Agency consults with State and local officials early in the process of developing the proposed regulation.

This rule will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132, because it merely proposes to approve a State rule implementing a federal standard, and does not alter the relationship or the distribution of power and responsibilities established in the Clean Air Act. Thus, the requirements of section 6 of the Executive Order do not apply to this rule.

##### F. Executive Order 13175, Coordination With Indian Tribal Governments

Executive Order 13175, entitled “Consultation and Coordination with Indian Tribal Governments” (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure “meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.” This proposed rule does not have tribal implications, as specified in Executive Order 13175. It will not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes. Thus, Executive Order 13175 does not apply to this rule. However, even though EPA is acting on a State plan, and that plan does not apply in Indian Country, there are four tribes located within the PM-10 nonattainment area, several of which have imposed particulate control measures of their own in order to reduce PM-10 concentrations. EPA informed tribal environmental staff regarding the proposed approval so that the tribes could inform their leadership and participate in the public comment process if desired.

EPA specifically solicits additional comment on this proposed rule from tribal officials.

##### G. Executive Order 13045, Protection of Children From Environmental Health Risks and Safety Risks

EPA interprets Executive Order 13045 (62 FR 19885, April 23, 1997) as applying only to those regulatory actions that concern health or safety risks, such that the analysis required under section 5–501 of the Executive Order has the potential to influence the regulation. This rule is not subject to Executive Order 13045, because it approves a state rule implementing a Federal standard.

##### H. Executive Order 12898, Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Population

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” (February 16, 1994) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing,

as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority populations and low-income populations in the United States. The Executive Order has informed the development and implementation of EPA’s environmental justice program and policies. Consistent with the Executive Order and the associated Presidential Memorandum, the Agency’s environmental justice policies promote environmental protection by focusing attention and Agency efforts on addressing the types of environmental harms and risks that are prevalent among minority, low-income and Tribal populations.

This action will not have disproportionately high and adverse human health or environmental effects on minority, low-income or Tribal populations because the action proposed increases the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population.

##### I. Executive Order 13211, Actions That Significantly Affect Energy Supply, Distribution, or Use

This rule is not subject to Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use” (66 FR 28355, May 22, 2001) because it is not a significant regulatory action under Executive Order 12866.

##### J. National Technology Transfer and Advancement Act

Section 12 of the National Technology Transfer and Advancement Act (NTTAA) of 1995 requires Federal agencies to evaluate existing technical standards when developing a new regulation. To comply with NTTAA, EPA must consider and use “voluntary consensus standards” (VCS) if available and applicable when developing programs and policies unless doing so would be inconsistent with applicable law or otherwise impractical.

EPA believes that VCS are inapplicable to this action. Today’s action does not require the public to perform activities conducive to the use of VCS.

##### List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Intergovernmental relations, Particulate matter, Reporting and recordkeeping requirements.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: January 14, 2014.  
Alexis Strauss,  
Acting Regional Administrator, Region IX.  
[FR Doc. 2014–02574 Filed 2–5–14; 8:45 am]  
BILLING CODE 6560–50–P

#### ENVIRONMENTAL PROTECTION AGENCY

##### 40 CFR Part 52

[EPA–R10–OAR–2013–0713, FRL–9906–33–Region–10]

##### Approval and Promulgation of Implementation Plans; Washington: Kent, Seattle, and Tacoma Second 10-Year PM<sub>10</sub> Limited Maintenance

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of proposed rulemaking; reopening of comment period.

SUMMARY: The EPA is reopening the public comment period on the notice of proposed rulemaking “Approval and Promulgation of Implementation Plans; Washington: Kent, Seattle, and Tacoma Second 10-Year PM<sub>10</sub> Limited Maintenance Plan” published on December 26, 2013. A commenter requested additional time to review the proposal and prepare comments. In response to this request, the EPA is reopening the comment period.

DATES: For the proposed rule published December 26, 2013 (78 FR 78311), comments must be received in writing by March 10, 2014.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA–R10–OAR–2013–0713, by any of the following methods:

- [www.regulations.gov](http://www.regulations.gov): Follow the on-line instructions for submitting comments.

- Email: [R10-Public\\_Comments@epa.gov](mailto:R10-Public_Comments@epa.gov).

- Mail: Jeff Hunt, EPA Region 10, Office of Air, Waste and Toxics (AWT–107), 1200 Sixth Avenue, Suite 900, Seattle, WA 98101.

- Hand Delivery/Courier: EPA Region 10, 1200 Sixth Avenue, Suite 900, Seattle, WA 98101. Attention: Jeff Hunt, Office of Air, Waste and Toxics, AWT–107. Such deliveries are only accepted during normal hours of operation, and special arrangements should be made for deliveries of boxed information.


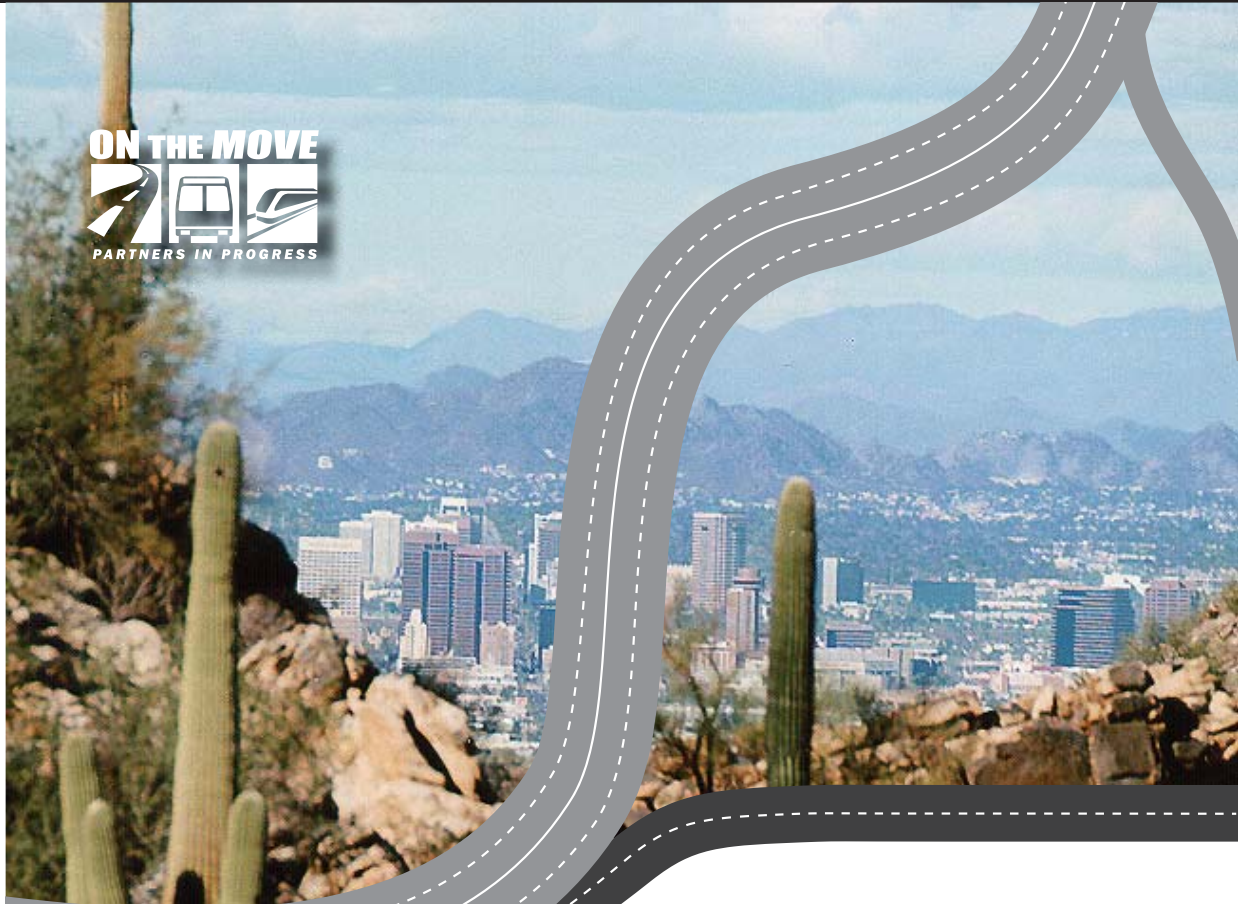

Instructions: Direct your comments to Docket ID No. EPA–R10–OAR–2013–0713. The EPA’s policy is that all comments received will be included in the public docket without change and may be made available online at [www.regulations.gov](http://www.regulations.gov), including any personal information provided, unless



APPENDIX 4-3

2014 MAG CONFORMITY ANALYSIS



Appendix 4-3, 2014 MAG Conformity Analysis, presents the 2014 MAG Conformity Analysis for the fiscal year 2014-2018 MAG Transportation Improvement Program and the 2035 MAG Regional Transportation Plan.



# CONFORMITY ANALYSIS

FOR THE FY 2014-2018 TRANSPORTATION  
IMPROVEMENT PROGRAM AND THE  
2035 REGIONAL TRANSPORTATION PLAN

JANUARY 2014





**2014 MAG CONFORMITY ANALYSIS**

**FOR THE**

**FY 2014-2018 MAG TRANSPORTATION IMPROVEMENT  
PROGRAM**

**AND THE**

**2035 MAG REGIONAL TRANSPORTATION PLAN**

January 2014

Maricopa Association of Governments  
302 North First Avenue, Suite 300  
Phoenix, Arizona 85003  
Phone: (602) 254-6300  
Fax: (602) 254-6490  
[www.azmag.gov](http://www.azmag.gov)

TABLE OF CONTENTS

EXECUTIVE SUMMARY..... ES-1

1 FEDERAL AND STATE REGULATORY REQUIREMENTS..... 1

    Federal and State Conformity Rules. .... 4

    Conformity Rule Requirements. .... 8

    Air Quality Plans and Designations. .... 11

    Conformity Test Requirements. .... 19

    Analysis Years. .... 24

2 LATEST PLANNING ASSUMPTIONS. .... 25

    Population and Employment. .... 27

    Traffic Counts..... 28

    Vehicle Miles of Travel..... 29

    Speeds..... 31

    Vehicle Registrations. .... 32

    Implementation Measures. .... 37

3 TRANSPORTATION MODELING..... 39

    Transportation Models. .... 39

    Socioeconomic Projections. .... 41

    Traffic Estimates. .... 42

4 AIR QUALITY MODELING. .... 49

    Maricopa County Nonattainment and Maintenance Areas..... 50

    Pinal County PM-10 and PM-2.5 Nonattainment Areas..... 60

5 TRANSPORTATION CONTROL MEASURES. .... 68

    Federal Conformity Rule Requirements For TCMs. .... 68

    Applicable Air Quality Implementation Plans. .... 71

    TCM Findings For The TIP And Regional Transportation Plan. .... 74

    Measure-By-Measure TCM Assessment. .... 76

6 TIP AND REGIONAL TRANSPORTATION PLAN CONFORMITY..... 102

    Maricopa County Nonattainment And Maintenance Areas. .... 102

    Pinal County Nonattainment Areas. .... 112

Glossary..... 119

References..... 127

Appendices, Volume 1 ..... (contained in separate document)

Appendices, Volume 2 ..... (contained in separate document)

# FIGURES

Figure	Page
ES-1 MAG and Sun Corridor MPO Planning Areas and Air Quality Nonattainment Areas for the Pinal County Area, Arizona.....	ES-3
ES-2 Carbon Monoxide Results For Conformity Budget Test Maricopa County Nonattainment and Maintenance Areas.....	ES-7
ES-3 Eight-Hour Ozone: Volatile Organic Compounds (VOC) Results For Conformity Budget Test Maricopa County Nonattainment and Maintenance Areas.....	ES-8
ES-4 Eight-Hour Ozone: Nitrogen Oxides (NOx) Results For Conformity Budget Test Maricopa County Nonattainment and Maintenance Areas.....	ES-9
ES-5 PM-10 Results For Conformity Budget Test Maricopa County Nonattainment and Maintenance Areas.....	ES-10
ES-6 Transportation Control Measure Funding In The FY 2014-2018 MAG Transportation Improvement Program.....	ES-11
ES-7 PM-10 Results for Conformity Interim Emission (Build/No-Build) Test Pinal County PM-10 Nonattainment Area.....	ES-13
ES-8 PM-2.5 Results for Conformity Interim Emission (Build/No-Build) Test Pinal County PM-2.5 Nonattainment Area. ....	ES-14
ES-9 NOx Results for Conformity Interim Emission (Build/No-Build) Test Pinal County PM-2.5 Nonattainment Area. ....	ES-15
1 MAG and Sun Corridor MPO Planning Areas and Air Quality Nonattainment Areas for the Pinal County Area, Arizona.....	3
2 Air Quality Nonattainment And Maintenance Areas For The Maricopa County Area, Arizona. ....	14
3 Air Quality Nonattainment Areas For The Pinal County Area, Arizona....	18
4 2011 Estimated Vs. Observed A.M. Peak Speeds On Arterials.....	33
5 2011 Estimated Vs. Observed A.M. Peak Speeds On Freeways.....	33
6 2011 Estimated Vs. Observed Mid-Day Speeds on Arterials.....	34
7 2011 Estimated Vs. Observed Mid-Day Speeds on Freeways.....	34
8 2011 Estimated Vs. Observed P.M. Peak Speeds on Arterials. ....	35

9	2011 Estimated Vs. Observed P.M. Peak Speeds on Freeways.....	35
10	2011 Estimated Vs. Observed Night Time Speeds on Arterials.....	36
11	2011 Estimated Vs. Observed Night Time Speeds on Freeways.....	36
12	Carbon Monoxide Results For Conformity Budget Test Maricopa County Nonattainment and Maintenance Areas.....	108
13	Eight-Hour Ozone: Volatile Organic Compounds (VOC) Results For Conformity Budget Test Maricopa County Nonattainment and Maintenance Areas.....	109
14	Eight-Hour Ozone: Nitrogen Oxides (NOx) Results For Conformity Budget Test Maricopa County Nonattainment and Maintenance Areas.....	110
15	PM-10 Results For Conformity Budget Test Maricopa County Nonattainment and Maintenance Areas.....	111
16	PM-10 Results for Conformity Interim Emission (Build/No-Build) Test Pinal County PM-10 Nonattainment Area.....	115
17	PM-2.5 Results for Conformity Interim Emission (Build/No-Build) Test Pinal County PM-2.5 Nonattainment Area. ....	116
18	NOx Results for Conformity Interim Emission (Build/No-Build) Test Pinal County PM-2.5 Nonattainment Area. ....	117

TABLES

<u>Table</u>	<u>Page</u>
1	Conformity Criteria From The Final Rule..... 10
2	Latest Planning Assumptions For MAG Conformity Determinations..... 26
3	Aggregated Model Validation Results Model-Estimated 2011 Weekday Volumes Vs. 2011 Traffic Counts. .... 30
4	Committed Measures In The Maricopa County Nonattainment And Maintenance Areas. .... 38
5	Traffic Network Comparison For Build Scenarios Evaluated For The 2014 MAG Conformity Analysis.. .... 43
6	Summary of Transit Fares For Valley Metro Service..... 45
7	Summary of Transit Fares For Cotton Express and Central Arizona Regional Transit Services.. .... 48
8	Data Used To Calculate Emissions From Unpaved Roads In The Pinal PM-10 Nonattainment Area..... 64
9	Paving Projects In The Pinal County PM-10 Nonattainment Area. .... 66
10	Programmed Transportation Projects That Implement TCMs And Other Air Quality Measures. .... 75
11	Conformity Budget Test Results For CO, VOC, NOx, And PM-10 (Metric Tons/Day) Maricopa County Nonattainment and Maintenance Areas. .... 106
12	Conformity Test Results Using Submitted Budgets For CO, VOC, NOx, and PM-10 For Information Purposes (Metric Tons/Day) Maricopa County Nonattainment and Maintenance Areas. .... 107
13	Conformity Interim Emission (Build/No-Build) Test Results (Kilograms/Day) Pinal County Nonattainment Areas. .... 114

EXECUTIVE SUMMARY

This report presents the 2014 MAG Conformity Analysis for the FY 2014-2018 MAG Transportation Improvement Program and the 2035 MAG Regional Transportation Plan. The Maricopa Association of Governments is the designated Metropolitan Planning Organization (MPO) for Maricopa County and portions of Pinal County including Apache Junction, Florence, and Maricopa. As a result of this designation, MAG prepares the Transportation Improvement Program and Regional Transportation Plan, and the associated conformity analyses. The FY 2014-2018 MAG Transportation Improvement Program and 2035 MAG Regional Transportation Plan includes an expanded MAG region in 2013. The FY 2014-2018 MAG Transportation Improvement Program serves as a detailed guide for preservation, expansion, and management of public transportation services. The 2035 MAG Regional Transportation Plan covers FY 2014 through FY 2035 providing the blueprint for future transportation investments in the region. The Regional Transportation Plan includes funding for freeways and highways, streets, regional bus and high capacity transit, as well as bicycle and pedestrian facilities, commensurate with available funding. This conformity analysis supports a finding of conformity on the FY 2014-2018 MAG Transportation Improvement Program and 2035 Regional Transportation Plan for the Maricopa Association of Governments metropolitan planning area.

On May 9, 2013, the MAG Metropolitan Planning Area Boundary was expanded due to the 2010 Census urbanized area updates. For transportation planning and programming purposes, the Federal Highway Administration regulations state that at a minimum, the Metropolitan Planning Area must encompass the entire existing urbanized area boundary as well as the contiguous geographic area(s) likely to become urbanized within the next 20 years. The updated urbanized area boundary for the MAG region included areas within Pinal County. Due to this expansion, the MAG Regional Council amended the MAG By-laws to recognize the new Metropolitan Planning Area Boundary and to provide for new members from Pinal County within the new boundary. The MAG Metropolitan Planning Area Boundary now includes the Town of Florence, City of Maricopa, the portion of the Gila River Indian Community within Pinal County, and unincorporated areas within Pinal County.

Also, on May 6, 2013, the new Sun Corridor Metropolitan Planning Organization was designated in the Pinal County area. The Sun Corridor Metropolitan Planning Area Boundary includes the cities of Casa Grande, Eloy, Coolidge, and unincorporated areas of Pinal County.

Both the MAG Metropolitan Planning Area Boundary and the Sun Corridor Metropolitan Planning Area Boundary include portions of the West Pinal PM-10 Nonattainment Area and



West Central Pinal PM-2.5 Nonattainment Area located in Pinal County. Both nonattainment areas are covered by the boundaries of the two metropolitan planning organizations. Consequently, transportation conformity is required to be demonstrated for both nonattainment areas by both metropolitan planning organizations. Please refer to Figure ES-1.

On July 1, 2013, the Federal Highway Administration notified the Governor of a transportation conformity lapse in the West Pinal PM-10 Nonattainment Area, effective July 2, 2013. The new West Pinal PM-10 Nonattainment Area had been designated by the Environmental Protection Agency, effective July 2, 2012. The Clean Air Act §176(c)(6) requires a metropolitan long range transportation plan and transportation improvement program conformity determination within twelve months of the effective date of an area being designated nonattainment. The twelve month conformity grace period had lapsed.

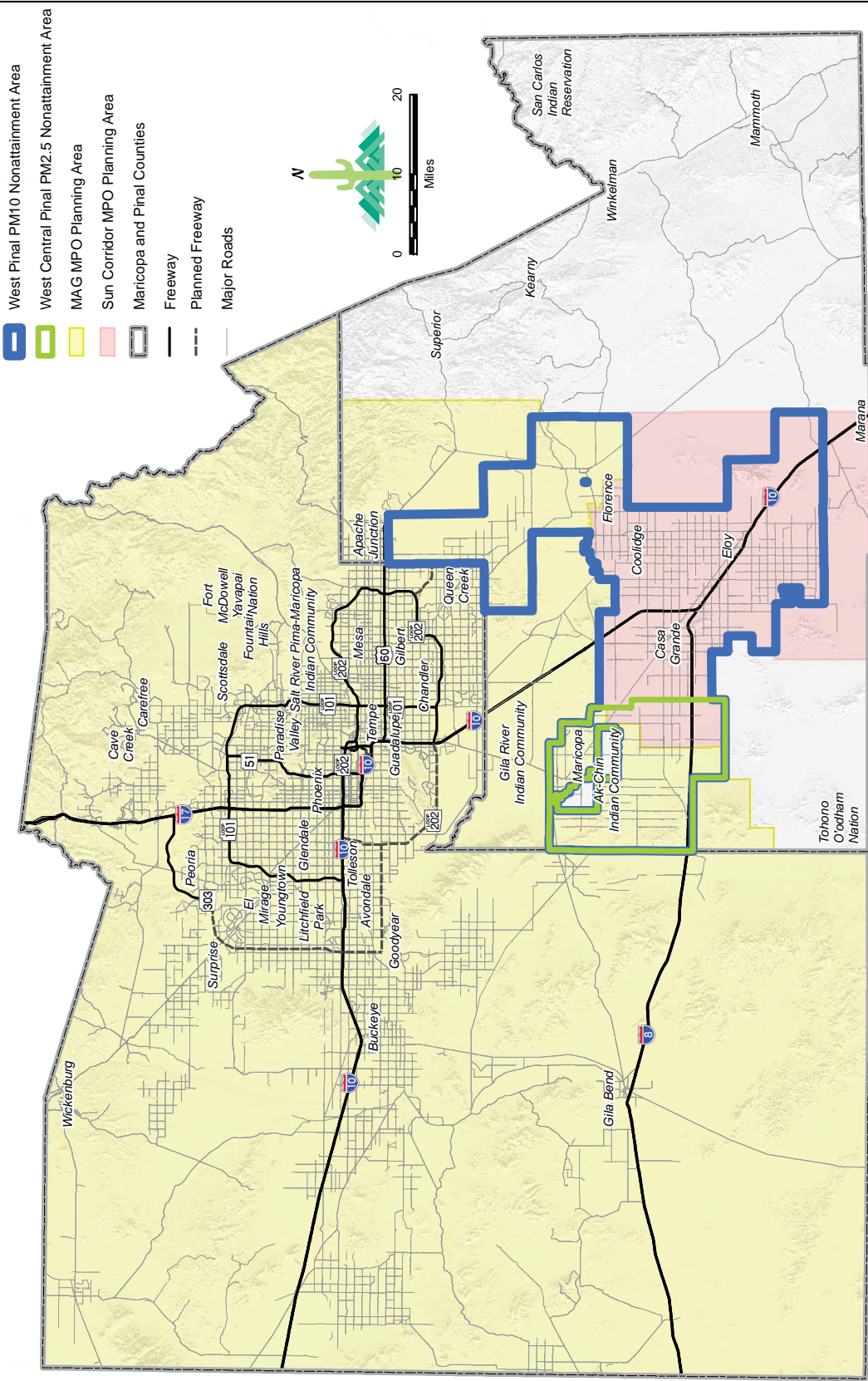
To provide assistance to the new Sun Corridor Metropolitan Planning Organization, MAG has prepared the initial conformity analysis for the PM-10 and PM-2.5 nonattainment areas in Pinal County, to enable transportation projects in both metropolitan planning organizations to proceed. At a June 17, 2013 meeting with the Arizona Department of Transportation, Sun Corridor Metropolitan Planning Organization and MAG, there was general concurrence that MAG would prepare the initial conformity analysis. The Maricopa Association of Governments is working through a cooperative effort with the Arizona Department of Transportation, Sun Corridor Metropolitan Planning Organization, and Pinal County on the conformity analysis necessary to remove the conformity lapse.

The 2014 MAG Conformity Analysis for the FY 2014-2018 MAG Transportation Improvement Program and the 2035 MAG Regional Transportation Plan includes results of the regional emissions analysis for carbon monoxide, eight-hour ozone, and PM-10 for the Maricopa County region as well as PM-10 for the West Pinal PM-10 Nonattainment Area and PM-2.5 and NOx for the West Central Pinal PM-2.5 Nonattainment Area located in Pinal County. Summarized below are the applicable federal criteria or requirements for conformity determinations, the conformity tests applied, regional emissions analysis results, and an overview of the organization of this report. Figures presenting the conformity test results and transportation control measure funding in the FY 2014-2018 MAG Transportation Improvement Program are provided at the end of the Executive Summary.

**CONFORMITY REQUIREMENTS**

The federal transportation conformity rule (40 Code of Federal Regulations Parts 51 and 93) specifies criteria and procedures for conformity determinations for transportation plans, programs, and projects and their respective amendments. The federal transportation conformity rule was first promulgated in 1993 by EPA, following the passage of amendments to the federal Clean Air Act in 1990. The federal transportation conformity rule has been revised several times since its initial release to reflect both EPA rule changes and court opinions. The transportation conformity rule and court opinions are summarized in Chapter 1.

Figure ES-1: MAG and Sun Corridor MPO Planning Areas and Air Quality Nonattainment Areas for the Pinal County Area, Arizona



The conformity rule 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). At this time, portions of Maricopa County are designated as a nonattainment or maintenance area with respect to federal air quality standards for three criteria pollutants, carbon monoxide (CO), eight-hour ozone, and particulate matter less than or equal to ten microns in diameter (PM-10), and portions of Pinal County are designated as a nonattainment area with respect to PM-10 and particulate matter less than or equal to 2.5 microns in diameter (PM-2.5). Metropolitan transportation plans, programs, and projects in the nonattainment or maintenance areas of both counties must satisfy the requirements of the federal transportation conformity rule. Under the federal transportation conformity rule, the principal criteria for a determination of conformity for transportation plans and programs are:

- (1) the TIP and Regional Transportation Plan must pass an emissions budget test with a budget that has been found to be adequate or approved by EPA for transportation conformity purposes, or interim emissions tests;
- (2) the latest planning assumptions and emission models in force at the time the conformity analysis begins must be employed;
- (3) the TIP and RTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans; and,
- (4) consultation.

Consultation generally occurs at the beginning of the conformity analysis process, on the proposed models, associated methods, and assumptions for the upcoming analysis and the projects to be assessed, and at the end of the process, on the draft conformity analysis report. The final determination of conformity for the TIP and RTP is the responsibility of the Federal Highway Administration and the Federal Transit Administration.

The conformity tests specified in the federal transportation conformity rule are: (1) the emissions budget test, and (2) interim emissions tests. For the emissions budget test, predicted emissions for the TIP and 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 by EPA 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 emissions budget found to be adequate for transportation conformity purposes, interim emissions tests apply.

**MARICOPA COUNTY NONATTAINMENT AND MAINTENANCE AREAS**

For the Maricopa County nonattainment and maintenance areas, separate tests were conducted for carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NOx), and PM-10. Budget tests were performed for the Maricopa County nonattainment and maintenance areas using EPA approved budgets or budgets found adequate by EPA for transportation conformity purposes. On March 9, 2005, EPA published the final rule in the *Federal Register* approving the MAG 2003 Carbon Monoxide Maintenance Plan, including the conformity budgets, effective April 8, 2005. On June 13, 2012, EPA approved the MAG 2007 Eight-Hour Ozone Plan including the emissions budgets, effective July 13, 2012. In addition, on July 25, 2002, EPA approved the Revised MAG 1999 Serious Area Particulate Plan for PM-10 including the 2006 PM-10 motor vehicle emissions budget, effective August 26, 2002. On September 10, 2013, EPA advised that MAG should include in this conformity analysis the budgets from submitted plans so that an adequacy finding on a submitted SIP does not interfere with the conformity process. In the 2014 MAG Conformity Analysis, MAG conducted the conformity analysis with the budgets from the submitted plans. On December 5, 2013, EPA found the conformity budget in the MAG 2012 Five Percent Plan for PM-10 adequate for transportation conformity purposes, effective December 20, 2013.

Chapter 1 summarizes the applicable air quality implementation plans and conformity tests for carbon monoxide, eight-hour ozone, and PM-10. For the 2014 MAG Conformity Analysis for the FY 2014-2018 MAG TIP and RTP, the emissions budget test was applied using the approved conformity budgets from the Carbon Monoxide Maintenance Plan. For eight-hour ozone, the emissions budget tests were performed for volatile organic compounds (VOC) and nitrogen oxides (NOx) using the approved conformity budgets from the MAG Eight-Hour Ozone Plan. For PM-10, the emissions budget test was applied using the approved conformity budget from the Serious Area Particulate Plan for PM-10.

Results of the Conformity Analysis

For the 2014 MAG Conformity Analysis, a regional emissions analysis was conducted for carbon monoxide, the eight-hour ozone precursors (volatile organic compounds and nitrogen oxides), and PM-10 for the years: 2015, 2025, and 2035. All analyses were conducted using the latest planning assumptions and emissions models in force at the time the conformity analysis started on September 29, 2013. The major conclusions of the 2014 MAG Conformity Analysis are:

- For carbon monoxide, the total vehicle-related emissions associated with implementation of the TIP and Regional Transportation Plan for the analysis years 2015, 2025, and 2035 are projected to be less than the approved 2015 emissions budget. The applicable conformity test for carbon monoxide is therefore satisfied. The results of the regional emissions analysis for carbon monoxide are presented in Figure ES-2.
- For eight-hour ozone, the total vehicle-related volatile organic compound and nitrogen oxide emissions associated with implementation of the TIP and Regional

Transportation Plan for the analysis years of 2015, 2025, and 2035 are projected to be less than the approved 2008 emissions budgets. The applicable conformity tests for eight-hour ozone are therefore satisfied. The results of the regional emissions analysis for eight-hour ozone are presented in Figures ES-3 and ES-4.

- For PM-10, the total vehicle-related emissions associated with implementation of the TIP and Regional Transportation Plan for the analysis years of 2015, 2025, and 2035 are projected to be less than the approved 2006 emissions budget and less than the adequate 2012 emissions budget. The conformity test for PM-10 is therefore satisfied. The results of the regional emissions analysis for PM-10 are presented in Figure ES-5.
- A review of the implementation status of TCMs in applicable air quality plans has indicated that the TIP and Regional Transportation Plan will provide for the timely implementation of the TCMs and there are no obstacles to the implementation of any TCM. The current status of TCMs identified in applicable air quality implementation plans is documented in Chapter 5 of this report. Figure ES-6 presents the total funding programmed in the TIP for transportation projects and programs that implement transportation control measures and other air quality measures.
- Consultation has been conducted in accordance with federal requirements.

**Figure ES-2: Carbon Monoxide Results for Conformity Budget Test**  
Maricopa County Nonattainment and Maintenance Areas

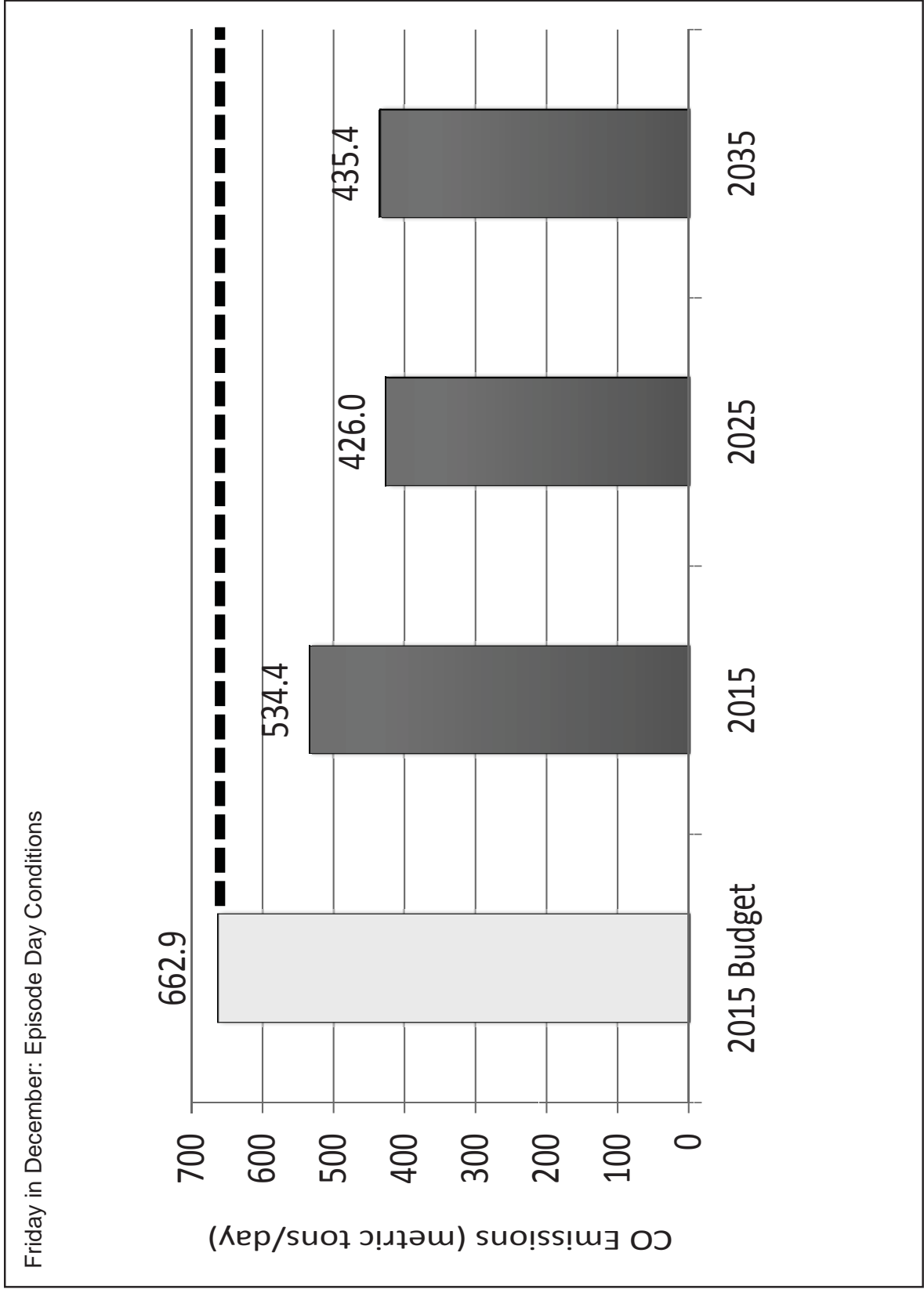
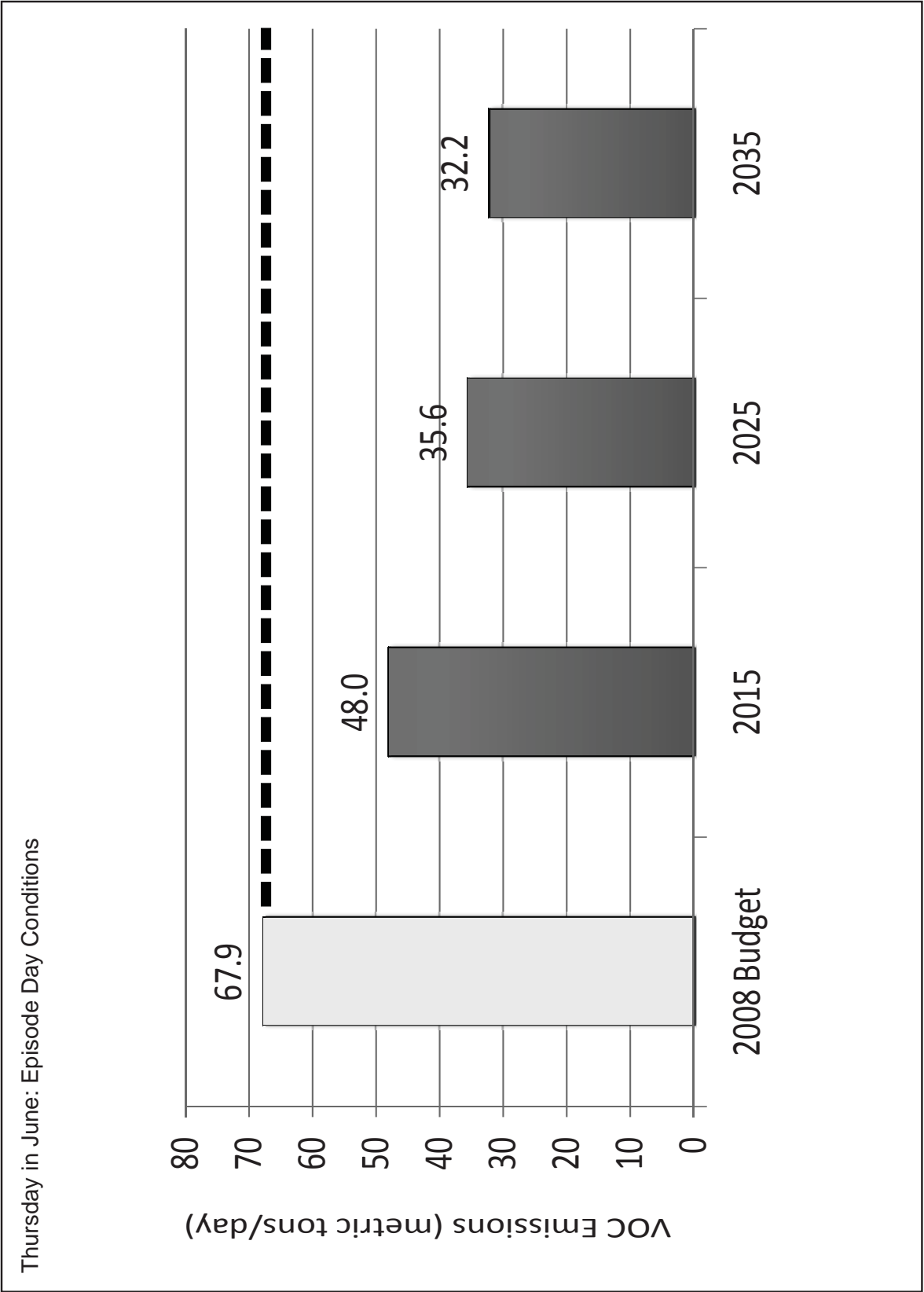


Figure ES-3: Eight-Hour Ozone: Volatile Organic Compounds (VOC) Results for Conformity Budget Test

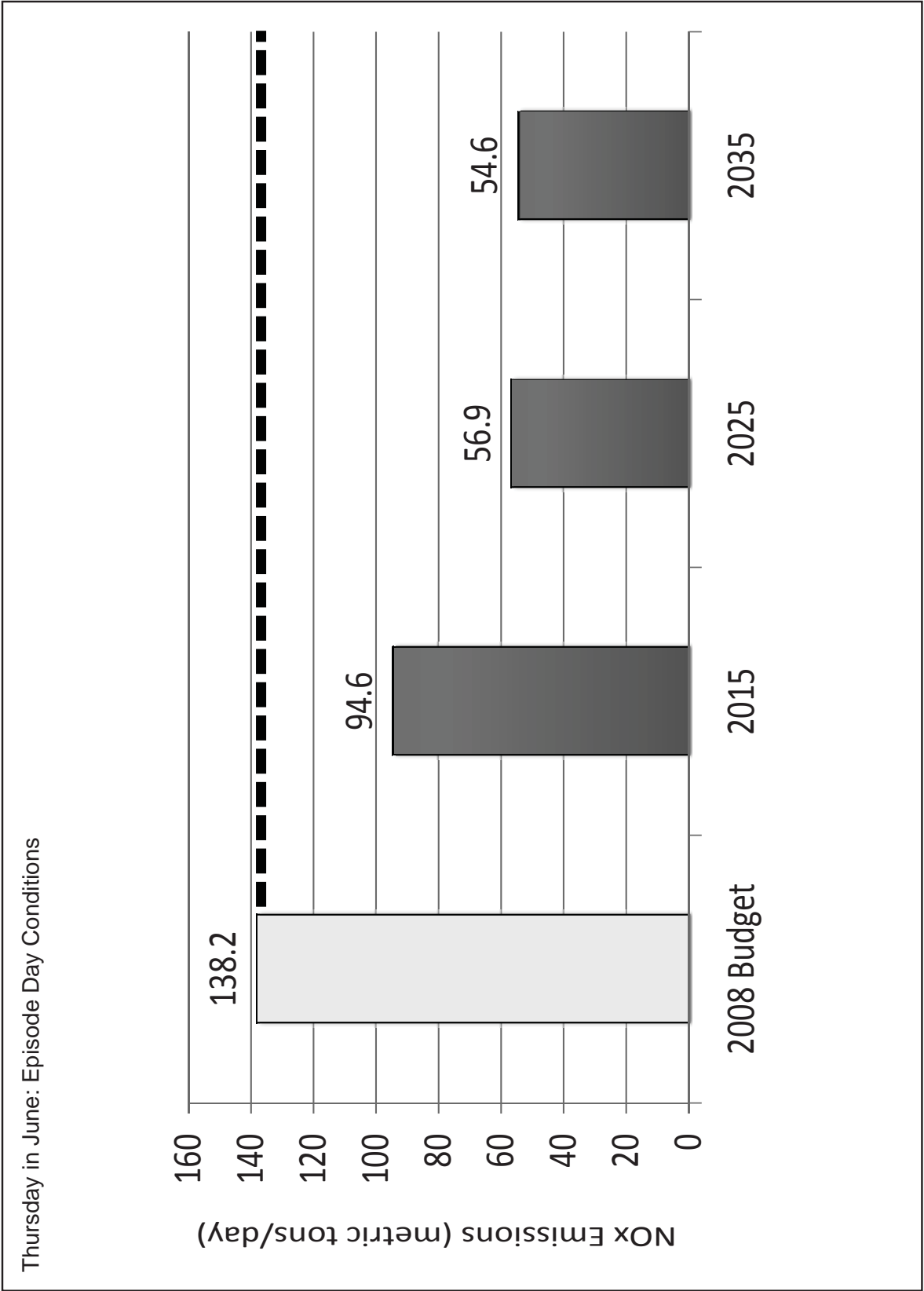
Maricopa County Nonattainment and Maintenance Areas



ES-8

Figure ES-4: Eight-Hour Ozone: Nitrogen Oxides (NOx) Results for Conformity Budget Test

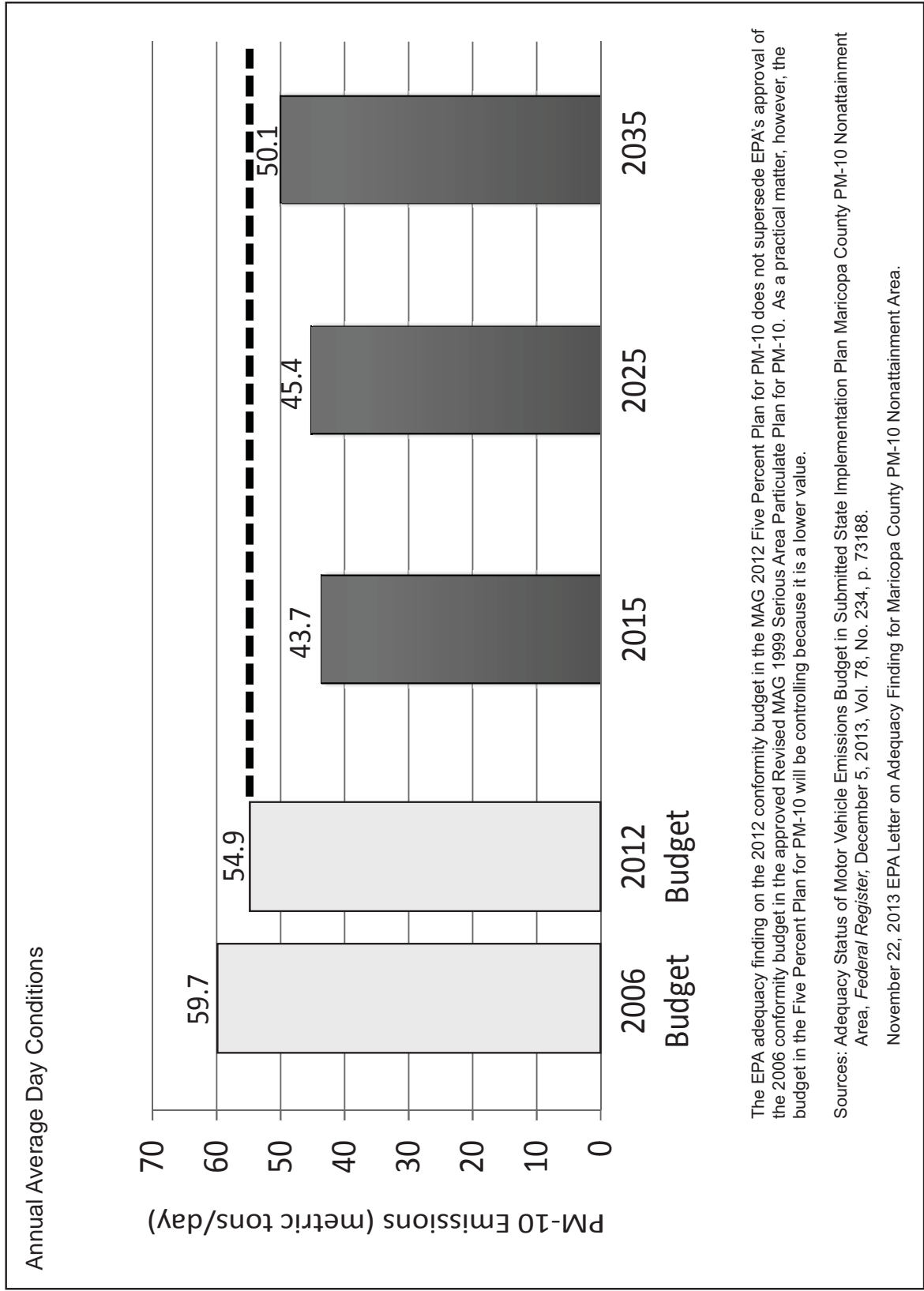
Maricopa County Nonattainment and Maintenance Areas



ES-9

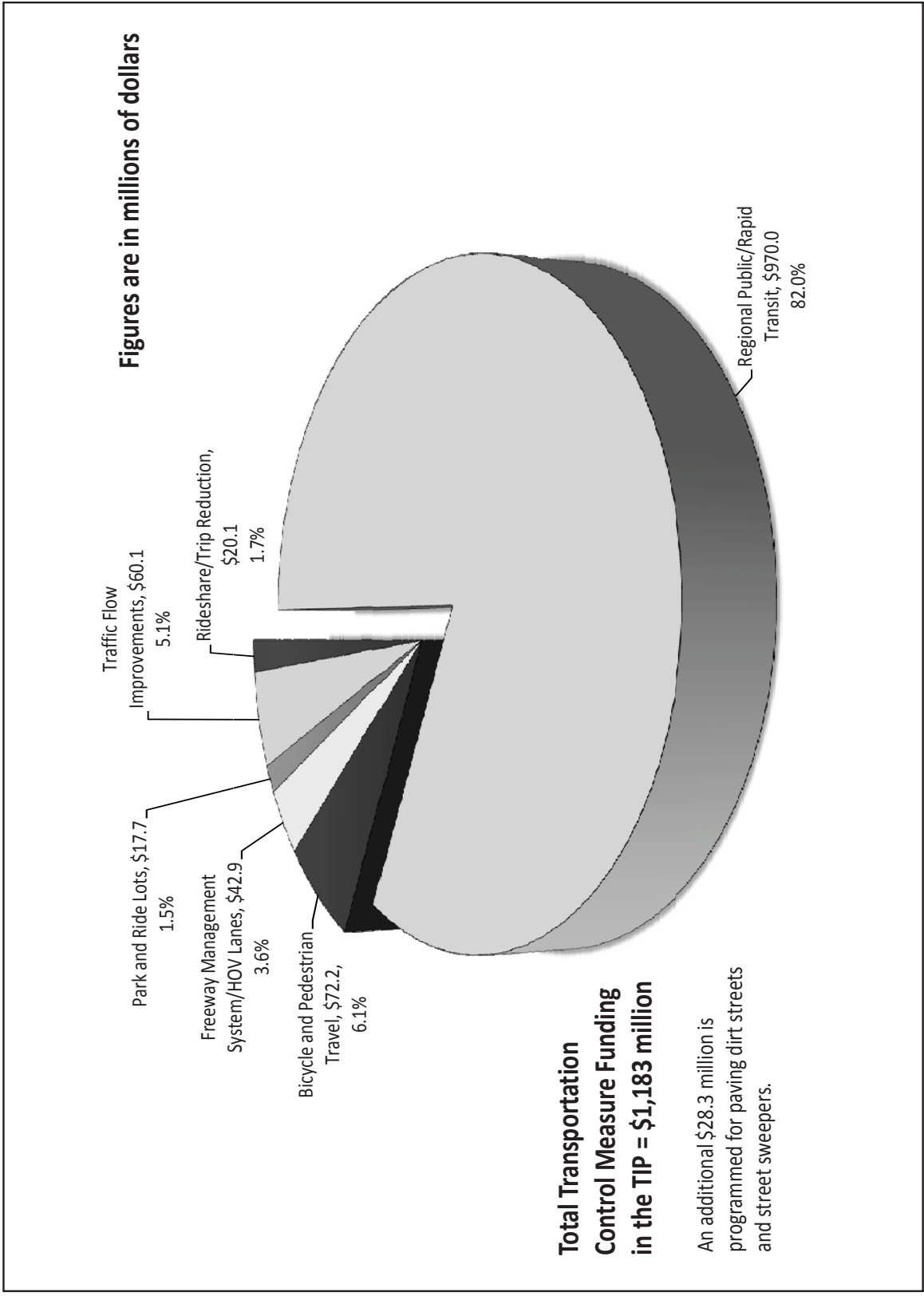


**Figure ES-5: PM-10 Results for Conformity Budget Test**  
Maricopa County Nonattainment and Maintenance Areas



ES-10

**Figure ES-6: Transportation Control Measure Funding in the FY 2014-2018 MAG Transportation Improvement Program**



ES-11

**PINAL COUNTY NONATTAINMENT AREAS**

For the Pinal County nonattainment areas, there are no adequate or approved motor vehicle emissions budgets for conformity. Therefore, the conformity interim emissions tests were applied. The build/no-build tests were conducted for PM-10 for the West Pinal PM-10 Nonattainment Area and for PM-2.5 and NOx for the West Central Pinal PM-2.5 Nonattainment Area for the analysis years of 2015, 2025, and 2035. For each test, the required emissions estimates were developed using the transportation and emission modeling approaches required under the federal transportation conformity rule and summarized in this document.

For PM-10, for each analysis year the projected emissions for the build scenario are not greater than the projected emissions for the no-build scenario. Since the PM-10 emissions predicted for the build scenarios are not greater than the PM-10 emissions predicted for the no-build scenarios, the conformity interim emission test is satisfied. It is also reasonable to expect the build emissions would not exceed the no-build emissions for the time periods between the analysis years. The results of the regional emissions analysis for PM-10 are presented in Figure ES-7.

For PM-2.5, for each analysis year the projected emissions for the build scenario are not greater than the projected emissions for the no-build scenario. Since the PM-2.5 emissions predicted for the build scenarios are not greater than the PM-2.5 emissions predicted for the no-build scenarios, the conformity interim emission tests are satisfied. It is also reasonable to expect the build emissions would not exceed the no-build emissions for the time periods between the analysis years. The results of the regional emissions analysis for PM-2.5 are presented in Figure ES-8.

For NOx, for each analysis year the projected emissions for the build scenario are not greater than the projected emissions for the no-build scenario. Since the NOx emissions predicted for the build scenarios are not greater than the NOx emissions predicted for the no-build scenarios, the conformity interim emission tests are satisfied. It is also reasonable to expect the build emissions would not exceed the no-build emissions for the time periods between the analysis years. The results of the regional emissions analysis for NOx are presented in Figure ES-9.

**Figure ES-7: PM-10 Results for Conformity Interim Emission (Build/No-Build) Test**  
Pinal County PM-10 Nonattainment Area

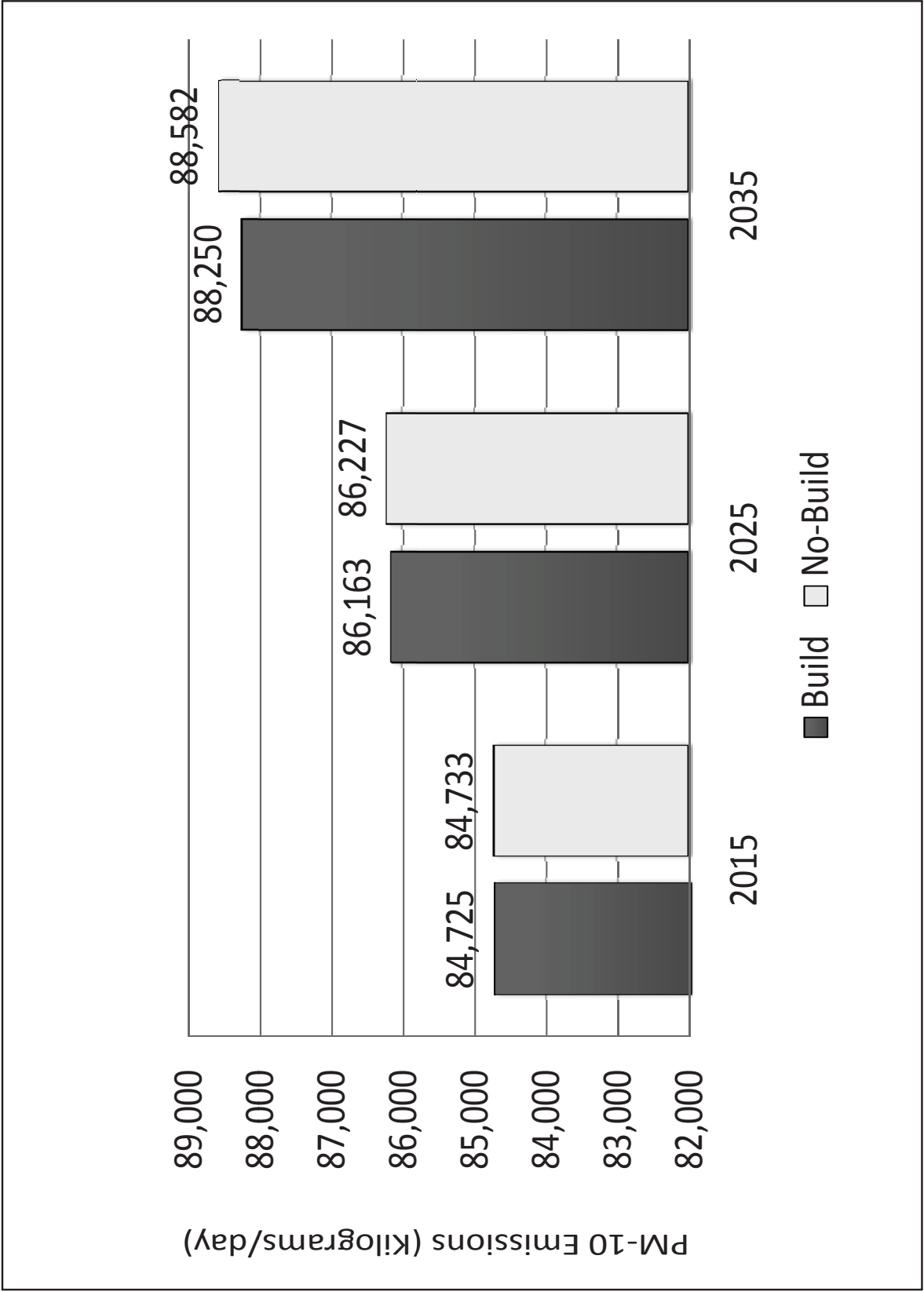
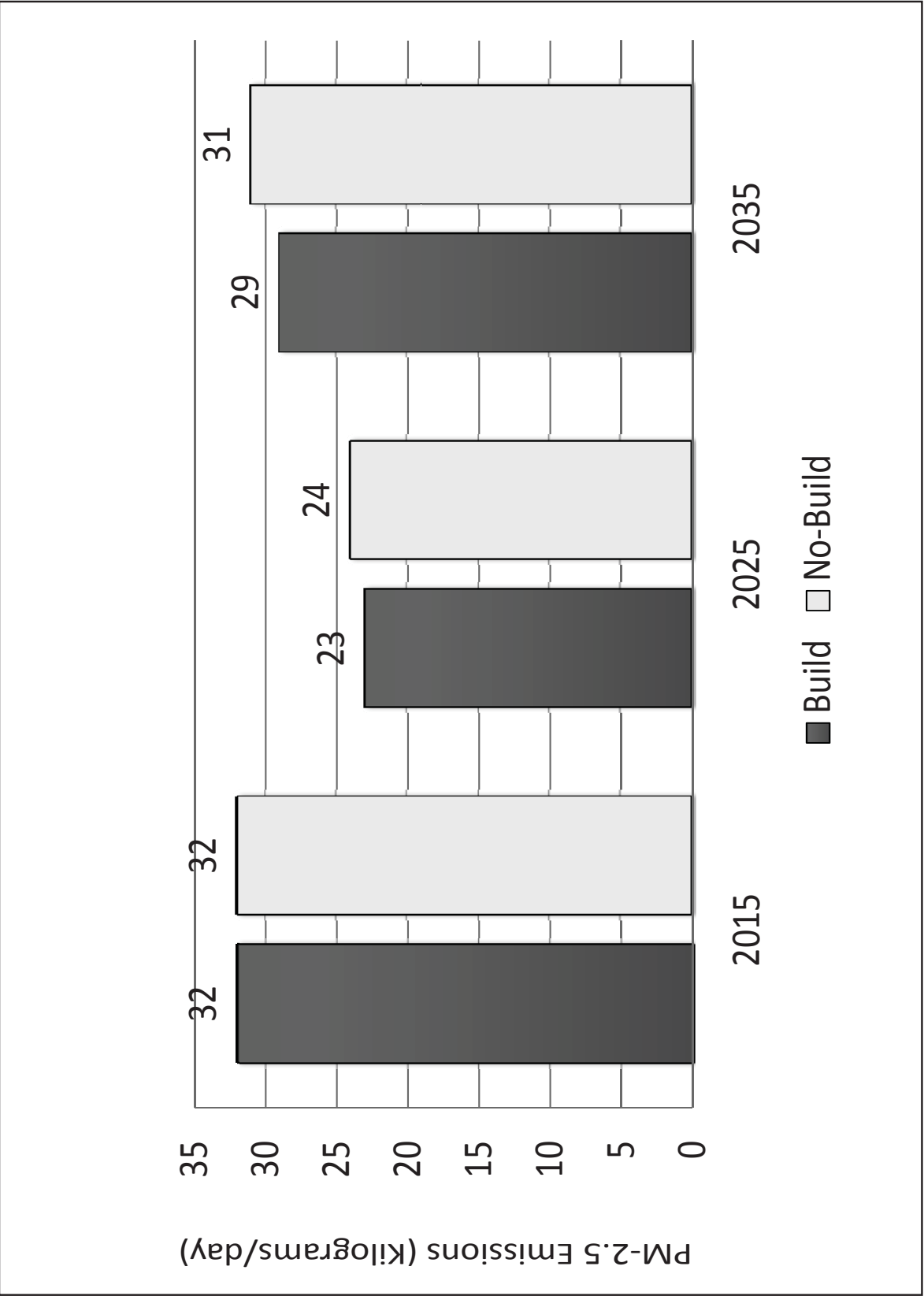


Figure ES-8: PM-2.5 Results for Conformity Interim Emission (Build/No-Build) Test

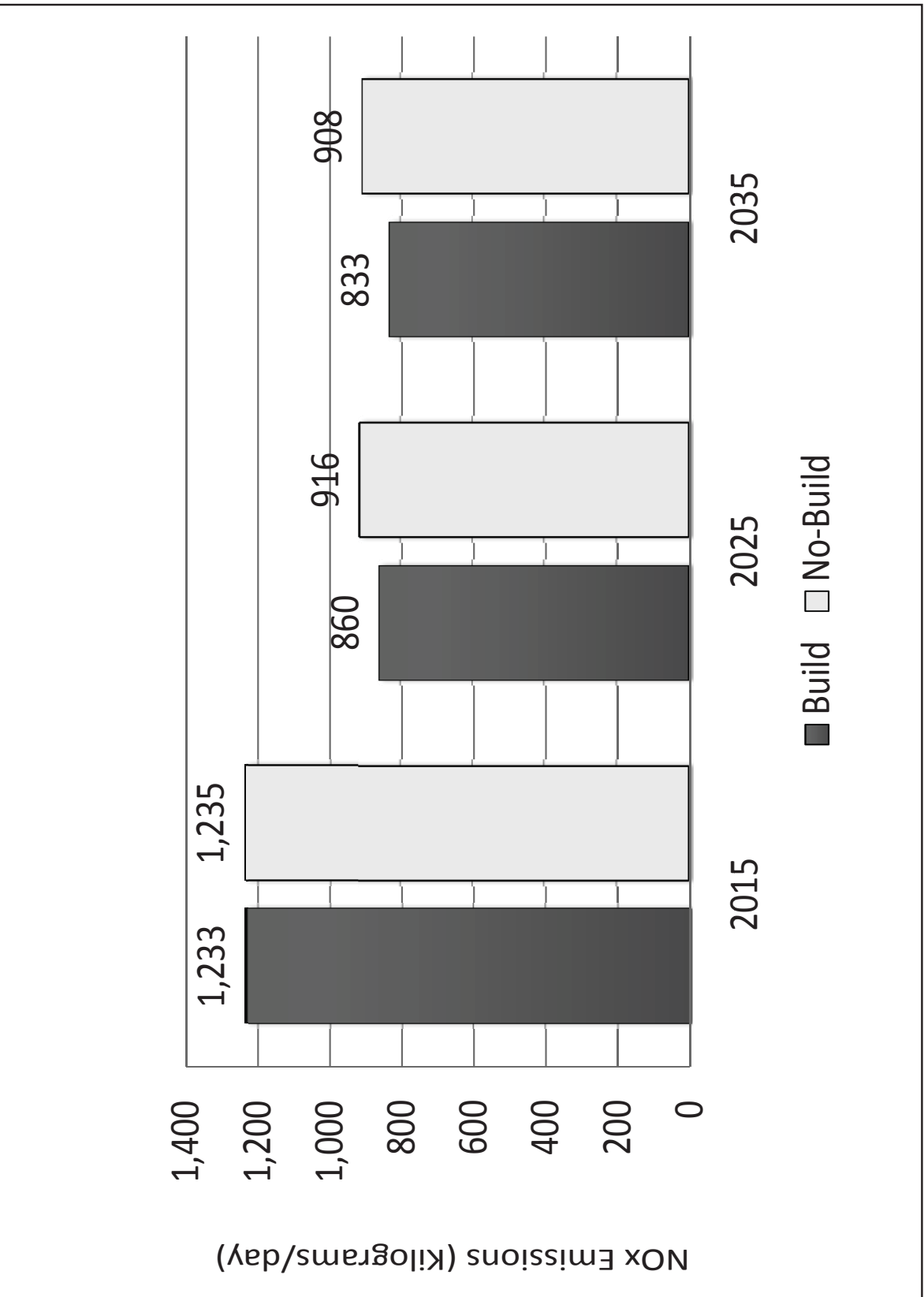
Pinal County PM-2.5 Nonattainment Area



ES-14

Figure ES-9: NOx Results for Conformity Interim Emission (Build/No-Build) Test

Pinal County PM-2.5 Nonattainment Area



ES-15



**REPORT ORGANIZATION**

The report is organized into six chapters. Chapter 1 provides an overview of the applicable federal and state conformity rules and requirements, air quality implementation plans, and conformity test requirements. Chapter 2 contains a discussion of the latest planning assumptions. Chapter 3 includes a summary of the transportation model characteristics, key socioeconomic data, and other data related to the land use and transportation system forecasts, and Chapter 4 describes the air quality modeling used to estimate emission factors and mobile source emissions. Chapter 5 contains the documentation required under the federal transportation conformity rule for transportation control measures. The results of the conformity analysis for the MAG FY 2014-2018 Transportation Improvement Program and 2035 MAG Regional Transportation Plan and the new Pinal County nonattainment areas are provided in Chapter 6.

Excerpts from the applicable air quality plans, consultation documentation, and other related information are contained in the appendices. The transcript of the public hearing conducted on the draft report as well as the MAG response to the comments received on the conformity analysis during the 30-day consultation period on the draft report are provided in the appendices.

**1 FEDERAL AND STATE REGULATORY REQUIREMENTS**

The Maricopa Association of Governments is the designated Metropolitan Planning Organization (MPO) for Maricopa County and portions of Pinal County including Apache Junction, Florence, and Maricopa. As a result of this designation, MAG prepares the Transportation Improvement Program and Regional Transportation Plan, and the associated conformity analyses. The FY 2014-2018 MAG Transportation Improvement Program and 2035 MAG Regional Transportation Plan includes an expanded MAG region in 2013. The FY 2014-2018 MAG Transportation Improvement Program serves as a detailed guide for preservation, expansion, and management of public transportation services. The 2035 MAG Regional Transportation Plan covers FY 2014 through FY 2035 providing the blueprint for future transportation investments in the region. The Regional Transportation Plan includes funding for freeways and highways, streets, regional bus and high capacity transit, as well as bicycle and pedestrian facilities, commensurate with available funding. In addition, this conformity analysis supports a finding of conformity on the FY 2014-2018 MAG Transportation Improvement Program and 2035 MAG Regional Transportation Plan for the Maricopa Association of Governments metropolitan planning area.

On May 9, 2013, the MAG Metropolitan Planning Area Boundary was expanded due to the 2010 Census urbanized area updates. For transportation planning and programming purposes, the Federal Highway Administration regulations state that at a minimum, the Metropolitan Planning Area must encompass the entire existing urbanized area boundary as well as the contiguous geographic area(s) likely to become urbanized within the next 20 years. The updated urbanized area boundary for the MAG region included areas within Pinal County. Due to this expansion, the MAG Regional Council amended the MAG By-laws to recognize the new Metropolitan Planning Area Boundary and to provide for new members from Pinal County within the new boundary. The MAG Metropolitan Planning Area Boundary now includes the Town of Florence, City of Maricopa, the portion of the Gila River Indian Community within Pinal County, and unincorporated areas within Pinal County.

Also, on May 6, 2013, the new Sun Corridor Metropolitan Planning Organization was designated in the Pinal County area. The Sun Corridor Metropolitan Planning Area Boundary includes the cities of Casa Grande, Eloy, Coolidge, and unincorporated areas of Pinal County.

Both the MAG Metropolitan Planning Area Boundary and the Sun Corridor Metropolitan Planning Area Boundary include portions of the West Pinal PM-10 Nonattainment Area and





FEDERAL AND STATE CONFORMITY RULES

Clean Air Act Amendments

Section 176(c) of the Clean Air Act (CAA, 1990) requires that Federal agencies and Metropolitan Planning Organizations (MPOs) not approve any transportation project, program, or plan which does not conform with the approved State Implementation Plan (SIP). The 1990 amendments to the Clean Air Act expanded Section 176(c) to more explicitly define conformity to an implementation plan to mean:

Conformity to the plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and that such activities will not (i) cause or contribute to any new violation of any standard in any area; (ii) increase the frequency or severity of any existing violation of any standard in any area; or (iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

The expanded Section 176(c) also provided conditions for approval of transportation plans, programs, and projects; requirements that the Environmental Protection Agency (EPA) promulgate conformity determination criteria and procedures no later than November 15, 1991; and a requirement that States submit their conformity procedures to EPA by November 15, 1992. The initial November 15, 1991 deadline for conformity criteria and procedures was not met by EPA.

Federal Rule

Supplemental interim conformity guidance was issued on June 7, 1991 (EPA/U.S. DOT, 1991a and 1991b) for carbon monoxide, ozone, and particulate matter less than or equal to ten microns in diameter. The applicable period of this guidance was designated as Phase 1 of the interim period. EPA subsequently promulgated the Conformity Final Rule, in the November 24, 1993 *Federal Register* (EPA, 1993). The Rule became effective on December 27, 1993. The federal Transportation Conformity Final Rule has been revised several times since its initial release. The first set of amendments, finalized on August 7, 1995, (EPA, 1995a) aligned the dates of conformity lapses due to SIP failures with the application of Clean Air Act highway sanctions for certain ozone areas and all areas with disapproved SIPs with a protective finding.

The second set of amendments was finalized on November 14, 1995 (EPA, 1995b). This set allowed any transportation control measure (TCM) from an approved SIP to proceed during a conformity lapse, and aligned the date of conformity lapses with the date of application of Clean Air Act highway sanctions for any failure to submit or submissions of an incomplete control strategy SIP. The second set also corrected the nitrogen oxides provisions of the transportation conformity rule consistent with the Clean Air Act and previous commitments made by EPA. Finally, the amendments extended the grace period

for areas to determine conformity to a submitted control strategy SIP, and established a grace period for determining conformity on transportation plans and programs in recently designated nonattainment areas. This grace period was later overturned in *Sierra Club v. EPA* in November 1997.

The third set of amendments was finalized August 15, 1997 (EPA, 1997a). These amendments streamlined the conformity process by eliminating the reliance on the classification system of "Phase II interim period," "transitional period," "control strategy period," and "maintenance period" to determine whether the budget test and/or emission reduction tests apply. The amendments also changed the time periods during which the budget test and the build/no-build test are required.

To incorporate provisions from the *Sierra Club v. EPA* court decision, EPA promulgated an amendment to the transportation conformity rule on April 10, 2000 that eliminated a one-year grace period for new nonattainment areas before conformity applies (EPA, 2000). Then on August 6, 2002, the EPA promulgated an amendment to the transportation conformity rule which requires conformity to be determined within 18 months of the effective date of the EPA *Federal Register* notice on a budget adequacy finding in an initial SIP submission and established a one-year grace period before conformity is required in areas that are designated nonattainment for a given air quality standard for the first time (EPA, 2002b).

On July 1, 2004, EPA published the final rule, Transportation Conformity Rule Amendments for the New Eight-Hour Ozone and PM-2.5 National Ambient Air Quality Standards and Miscellaneous Revisions for Existing Areas; Transportation Conformity Rule Amendments - Response to Court Decision and Additional Rule Changes (EPA, 2004a). The rule describes transportation conformity requirements for the new eight-hour ozone and fine particulate matter (PM-2.5) standards. The rule also incorporates existing EPA and United States Department of Transportation (U.S. DOT) guidance that implements the March 2, 1999, court decision and provides revisions that clarify the existing regulation and improve its implementation. On July 20, 2004, EPA issued a *Federal Register* notice that corrects two errors in the preamble to the July 1, 2004 final rule.

On February 14, 2006, EPA and U.S. DOT jointly issued guidance on the implementation of the transportation conformity-related provisions from the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The transportation bill, which became law on August 10, 2005, made several changes to the transportation conformity provisions in Section 176(c) of the Clean Air Act. On January 24, 2008, EPA issued a final rule on the transportation conformity amendments to implement the conformity provisions contained in SAFETEA-LU (EPA, 2008a). A summary of the key conformity provisions are:

- Additional time is provided for areas to redetermine conformity of existing transportation plans and programs from 18 months to two years after the date that EPA finds a motor vehicle emissions budget to be adequate or approves an

implementation plan that establishes a motor vehicle emissions budget, or when EPA promulgates an implementation plan that establishes or revises a motor vehicle emissions budget.

- The requirement for frequency of conformity determinations on updated transportation plans and programs is changed from three to four years, except when the MPO elects to update a transportation plan or program more frequently, or when the MPO is required to determine conformity after EPA finds a motor vehicle emissions budget to be adequate or approves an implementation plan that establishes a motor vehicle emissions budget, or when EPA promulgates an implementation plan that establishes or revises a motor vehicle emissions budget.
- Conformity determinations for transportation plans shall include the final year of the transportation plan as a horizon year, or optionally, after consultation with the air pollution control agency and the public and consideration of comments, the MPO may elect the longest of the following periods: the first 10-year period of the transportation plan; the latest year in the implementation plan that contains a motor vehicle emissions budget; the year after the completion date of a regionally significant project if the project is included in the transportation improvement program or the project requires approval before the subsequent conformity determination.

In addition, if the MPO elects to determine conformity for a period less than the last horizon year of the transportation plan, the conformity determination must include a regional emissions analysis for the last year of the transportation plan and for any year shown to exceed emission budgets from a previous conformity determination, for information only. The analysis years selected for the 2014 MAG Conformity Analysis are described later in this section, and include the last year of the 2035 MAG Regional Transportation Plan.

- Allows the substitution of transportation control measures in an implementation plan that achieve equivalent or greater emissions reductions than the control measure to be replaced and that are consistent with the schedule provided for control measures in the plan. The substitution or addition of a transportation control measure shall not require a new conformity determination for the transportation plan or a revision of the implementation plan.
- An additional 12 month grace period is provided after a missed deadline before conformity lapses on a transportation plan or program. This provision applies to two types of conformity determination deadlines: the deadline resulting from the requirement to determine conformity for the transportation plan and program at regular intervals and the deadlines resulting from the requirement for a conformity redetermination within two years of an EPA action approving or finding a motor vehicle emissions budget adequate.

- Requires a conformity SIP amendment addressing requirements from Title 40 CFR sections 93.105, 93.122(a)(4)(ii), and 93.125(c) of the federal transportation conformity regulations.

On March 14, 2012, EPA published the Transportation Conformity Rule Restructuring Amendments. This rule restructured sections 40 CFR 93.109 and 93.119 so that they apply to any new or revised federal air quality standard. The rule also allows any nonattainment area that EPA determines has clean air quality data to satisfy transportation conformity test requirements by using on-road emissions from the most recent year of clean data as the budgets for that standard rather than using the interim emissions tests per 40 CFR 93.119 (EPA, 2012b).

#### State Rule

State rules for transportation conformity were adopted on April 12, 1995, by the Arizona Department of Environmental Quality (ADEQ), in response to requirements in Section 176(c)(4)(C) of the Clean Air Act as amended in 1990 (ADEQ, 1995). These rules became effective upon their certification by the Arizona Attorney General on June 15, 1995 and, as required by the federal conformity rule, were submitted to EPA as a revision to the State transportation conformity SIP.

To date, a State transportation conformity SIP has not received approval by EPA. Section 51.390(b) of the federal conformity rule states: "Following EPA approval of the State conformity provisions (or a portion thereof) in a revision to the applicable implementation plan, conformity determinations would be governed by the approved (or approved portion of the) State criteria and procedures." The federal transportation conformity rule therefore still governs, as a transportation conformity SIP has not yet been approved for this area.

The State rule specifies that MPOs (i.e., MAG, for this region) must develop specific conformity guidance and consultation procedures and processes. MAG has developed and adopted two conformity guidance documents to meet State requirements. MAG developed the "Transportation Conformity Guidance and Procedures" document, which was adopted initially on September 27, 1995 by the MAG Regional Council. The document was revised by the MAG Regional Council on March 27, 1996 (MAG, 1996b). This guidance document addresses both the determination of "regional significance" status for individual transportation projects, and the process by which regionally significant projects may be approved.

MAG also developed the "Conformity Consultation Processes" document, which was adopted on February 28, 1996 by the MAG Regional Council (MAG, 1996a). This guidance document details the public and interagency consultation processes to be used



in the development of regional transportation plans, programs, and projects within the Maricopa County nonattainment and maintenance areas.

Case Law

On November 14, 1997, the U.S. Court of Appeals for the District of Columbia issued an opinion in *Sierra Club v. EPA* involving the 1995 transportation conformity amendment that allowed new nonattainment areas a one-year grace period. Under this ruling, conformity applied as soon as an area was designated nonattainment. The EPA issued a final rule on April 10, 2000 in the *Federal Register* deleting 40 CFR 93.102(d) that allowed the grace period for new nonattainment areas (EPA, 2000). Then, on October 27, 2000, the FY 2001 EPA Appropriations bill included an amendment to Section 176(c) of the Clean Air Act that adds the one-year grace period to the statutory language.

On March 2, 1999, the U.S. Court of Appeals for the District of Columbia issued an opinion in *Environmental Defense Fund v. EPA* involving the 1997 transportation conformity amendments. In general, the court struck down 40 CFR 93.120(a)(2) which permitted a 120-day grace period after disapproval of a SIP; determined that the EPA must approve a “safety margin” prior to its use for conformity in 40 CFR 93.124(b); concluded that a submitted SIP budget must be found by EPA to be adequate, based on criteria found in 40 CFR 93.118(e)(4) before it can be used in a conformity determination; and ended a provision that allowed “grandfathered” projects to proceed during a conformity lapse. Following the court ruling, the EPA and U.S. DOT issued guidance to address implementation of conformity requirements based on the court findings. The EPA issued guidance contained in a May 14, 1999 memorandum (EPA, 1999c). In addition, the U.S. DOT issued guidance on June 18, 1999 that incorporates all U.S. DOT guidance in response to the court decision in a single document (U.S. DOT, 1999). On July 1, 2004, transportation conformity rule amendments were published in the *Federal Register* to incorporate provisions of the *Environmental Defense Fund v. EPA* court decision.

On October 20, 2006, the U.S. Court of Appeals for the District of Columbia filed an opinion vacating a provision of the transportation conformity rule at 40 CFR 93.109(e)(2)(v) that allowed areas to use the interim emission tests instead of the one-hour budgets. All other provisions regarding the use of the interim emissions tests remain unaffected by the court decision. Table 1 summarizes the criteria for conformity determinations for transportation projects, programs, and plans, as specified in amendments to the federal conformity rule.

**CONFORMITY RULE REQUIREMENTS**

The federal regulations identify general criteria and procedures that apply to all transportation conformity determinations, regardless of pollutant and implementation plan status. These include:

1) **Conformity Tests** — Sections 93.118 and 93.119 specify emission tests (budget and interim emissions) that the TIP and RTP must satisfy in order for a determination of conformity to be found. The final transportation conformity rule requires a submitted SIP motor vehicle emissions budget to be affirmed as adequate by EPA prior to use for making conformity determinations. The budget must be used on or after the effective date of EPA’s finding of adequacy.

2) **Methods / Modeling:**

**Latest Planning Assumptions** — Section 93.110 specifies that conformity determinations must be based upon the most recent planning assumptions in force at the time the conformity analysis begins, which is “the point at which the MPO or other designated agency begins to model the impact of the proposed transportation plan or TIP on travel and/or emissions. New data that becomes available after an analysis begins is required to be used in the conformity determination only if a significant delay in the analysis has occurred, as determined through interagency consultation”. This section of the conformity rule also requires reasonable assumptions to be made regarding transit service and changes in projected fares. All analyses were conducted using the latest planning assumptions and emissions models in force at the time the conformity analysis started on September 29, 2013.

**Latest Emissions Models** — Section 93.111 requires that the latest emission estimation models specified for use in SIPs must be used for the conformity analysis.

3) **Timely Implementation of TCMs** — Section 93.113 provides a detailed description of the steps necessary to demonstrate that the TIP and RTP are providing for the timely implementation of TCMs, as well as demonstrate that the plan and/or program is not interfering with this implementation. TCM documentation is included in Chapter Five of the Conformity Analysis.

4) **Consultation** — Section 93.105 requires that the conformity determination be made in accordance with the consultation procedures outlined in the federal regulations. These include:

- MAG is required to provide reasonable opportunity for consultation with local air quality and transportation agencies, state air and transportation agencies, the U.S. DOT and EPA (Section 93.105(c)(1)).
- MAG is required to establish a proactive public involvement process which provides opportunity for public review and comment prior to taking formal action on a conformity determination (Section 93.105(e)).

TABLE 1.  
CONFORMITY CRITERIA FROM THE FINAL RULE

Applicability	Pollutant	Section	Requirement
All Actions at All Times	CO, Ozone, PM-10	93.110	Latest Planning Assumptions
		93.111	Latest Emissions Model
		93.112	Consultation
Transportation Plan (RTP)	CO, Ozone, PM-10	93.113(b)	TCMs
		93.118 and/or 93.119	Emissions Budget and/or Interim Emissions
TIP	CO, Ozone, PM-10	93.113(c)	TCMs
		93.118 and/or 93.119	Emissions Budget and/or Interim Emissions
Project (From a Conforming Plan and TIP)	CO, Ozone, PM-10	93.114	Currently Conforming Plan and TIP
		93.115	Project From a Conforming Plan and TIP
	CO and PM-10	93.116	CO, PM-10, and PM-2.5 Hot Spots
	PM-10	93.117	PM-10 and PM-2.5 Control Measures
Project (Not From a Conforming Plan or TIP)	CO, Ozone, PM-10	93.113(d)	TCMs
		93.114	Currently Conforming Plan and TIP
	CO and PM-10	93.116	CO, PM-10, and PM-2.5 Hot Spots
	PM-10	93.117	PM-10 and PM-2.5 Control Measures
	CO, Ozone, PM-10	93.118 and/or 93.119	Emissions Budget and/or Interim Emissions

Source: Adapted from (EPA, 2012c), Section 93.109(b), "Table 1 - Conformity Criteria".

Under the interagency consultation procedures, the RTP is prepared by MAG staff with guidance from the MAG Transportation Policy Committee, the MAG Management Committee, and the MAG Regional Council. Copies of the final Draft are provided to MAG member agencies and others, including the Federal Transit Administration (FTA), Federal Highway Administration (FHWA), Arizona Department of Transportation (ADOT), ADEQ, Valley Metro/RPTA, City of Phoenix Public Transit Department, Pinal County Air Quality Control District (PACQCD), Central Arizona Governments (CAG), Sun Corridor Metropolitan Planning Organization, Maricopa County Air Quality Department (MCAQD), and EPA. The RTP is required to be publicly available and an opportunity for public review and comment is provided.

The TIP is prepared by MAG staff with the assistance of the MAG modal committees, Transportation Review Committee, and Transportation Policy Committee. Copies of the Draft TIP are provided to MAG member agencies and others, including FTA, FHWA, ADOT, ADEQ, Valley Metro/RPTA, City of Phoenix Public Transit Department, MCAQD, CAG, PACQCD, Sun Corridor Metropolitan Planning Organization, and EPA for review. As with the RTP, the TIP is required to be publicly available and an opportunity for public review and comment is provided.

AIR QUALITY PLANS AND DESIGNATIONS

Maricopa County Nonattainment and Maintenance Areas

Portions of Maricopa County are currently designated as nonattainment or maintenance for the National Ambient Air Quality Standards (NAAQS) for carbon monoxide (CO), eight-hour ozone, and particulate matter less than or equal to ten microns in diameter (PM-10). Air quality plans have been prepared to address carbon monoxide, one-hour ozone, eight-hour ozone, and PM-10:

- The Revised MAG 1999 Serious Area Carbon Monoxide Plan, reflecting the repeal of the remote sensing program by the Arizona Legislature in 2000, was submitted to EPA in March 2001 and approved by EPA effective April 8, 2005;
- The MAG 2003 Carbon Monoxide Redesignation Request and Maintenance Plan for the Maricopa County Nonattainment Area was submitted to EPA in June 2003 and approved by EPA effective April 8, 2005;
- The MAG 2013 Carbon Monoxide Maintenance Plan for the Maricopa County Area was submitted to EPA in April 2013.

- The EPA approved and promulgated a Revised 1998 15 Percent Rate of Progress Plan for Ozone (Revised ROP FIP) for the Maricopa County nonattainment area, effective August 5, 1999;
- The Serious Area Ozone State Implementation Plan for Maricopa County was prepared by ADEQ and submitted to EPA in December 2000 to meet the Serious Area requirements. No budget is contained in the Serious Area Ozone Plan. EPA approved the Serious Area Ozone Plan, effective June 14, 2005;
- The MAG 2004 One-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa County Nonattainment Area was submitted to EPA in May 2004 and approved by EPA effective June 14, 2005;
- The MAG 2007 Eight-Hour Ozone Plan for the Maricopa Nonattainment Area was submitted to EPA by June 15, 2007 and approved by EPA effective July 13, 2012;
- The MAG 2009 Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area was submitted to EPA in March 2009;
- The Revised MAG 1999 Serious Area Particulate Plan for PM-10 was submitted to EPA in February 2000 and approved by EPA effective August 26, 2002;
- The MAG 2007 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area was submitted to EPA by December 31, 2007. On September 9, 2010, EPA proposed to partially approve and partially disapprove the Five Percent Plan. On January 25, 2011, prior to any final EPA action, Arizona withdrew the Five Percent Plan from EPA consideration. On February 9, 2011, EPA published a notice of withdrawal of the May 30, 2008 adequacy finding on the PM-10 motor vehicle missions budget from the Five Percent Plan, effective January 31, 2011. On February 14, 2011, EPA made a finding that Arizona failed to submit the plan as required under the Clean Air Act, which triggered the sanctions clocks and obligation to impose a federal implementation plan if a new complete plan is not submitted. This EPA finding began an 18-month clock for mandatory application of sanctions and a two-year clock for a Federal Implementation Plan. The EPA published a corrected notice of withdrawal on February 28, 2011; and
- The MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area was submitted to EPA on May 25, 2012. On July 20, 2012, EPA issued a completeness finding that stopped the 18-month clock for mandatory application of sanctions. On April 19, 2013 and August 23, 2013, EPA proposed approval of several statutes included in the MAG 2012 Five Percent Plan for PM-10 that regulate PM-10 emissions from fugitive dust

sources. On January 14, 2014, the Environmental Protection Agency signed a notice proposing to approve the MAG 2012 Five Percent Plan for PM-10.

The boundaries of the nonattainment and maintenance areas are identified below, followed by a summary of the attainment status for each pollutant for the Maricopa County region.

**Nonattainment and Maintenance Boundaries**

Maricopa County nonattainment and maintenance areas are shown in Figure 2. The carbon monoxide maintenance area boundary encompasses 1,814 square miles (approximately 20 percent) of the County. This boundary was originally defined in 1974.

On March 9, 2005, EPA published a final rule redesignating portions of Maricopa County to attainment for carbon monoxide and also removed the Gila River Indian Community from the Maricopa County maintenance area, effective April 8, 2005 (EPA, 2005a).

Portions of the Maricopa County area, including the Gila River Indian Community, were designated nonattainment for one-hour ozone in September 1979. On June 14, 2005, EPA redesignated the area to attainment for one-hour ozone. The associated designations and classifications for the one-hour standard were revoked on June 15, 2005. On November 10, 2005, EPA published a direct final rule to correct the boundary of the Phoenix metropolitan one-hour ozone nonattainment area to exclude a portion of the Gila River Indian Community, effective January 9, 2006.

On April 15, 2004, EPA designated an eight-hour ozone nonattainment area located mainly in Maricopa County and Apache Junction in Pinal County. On April 30, 2004, EPA published the air quality designations and classifications for the 1997 eight-hour ozone standard that includes T1N, R8E and sections 1 through 12 of T1S, R8E in Pinal County (EPA, 2004b). This eight-hour ozone nonattainment area covered approximately 4,880 square miles.

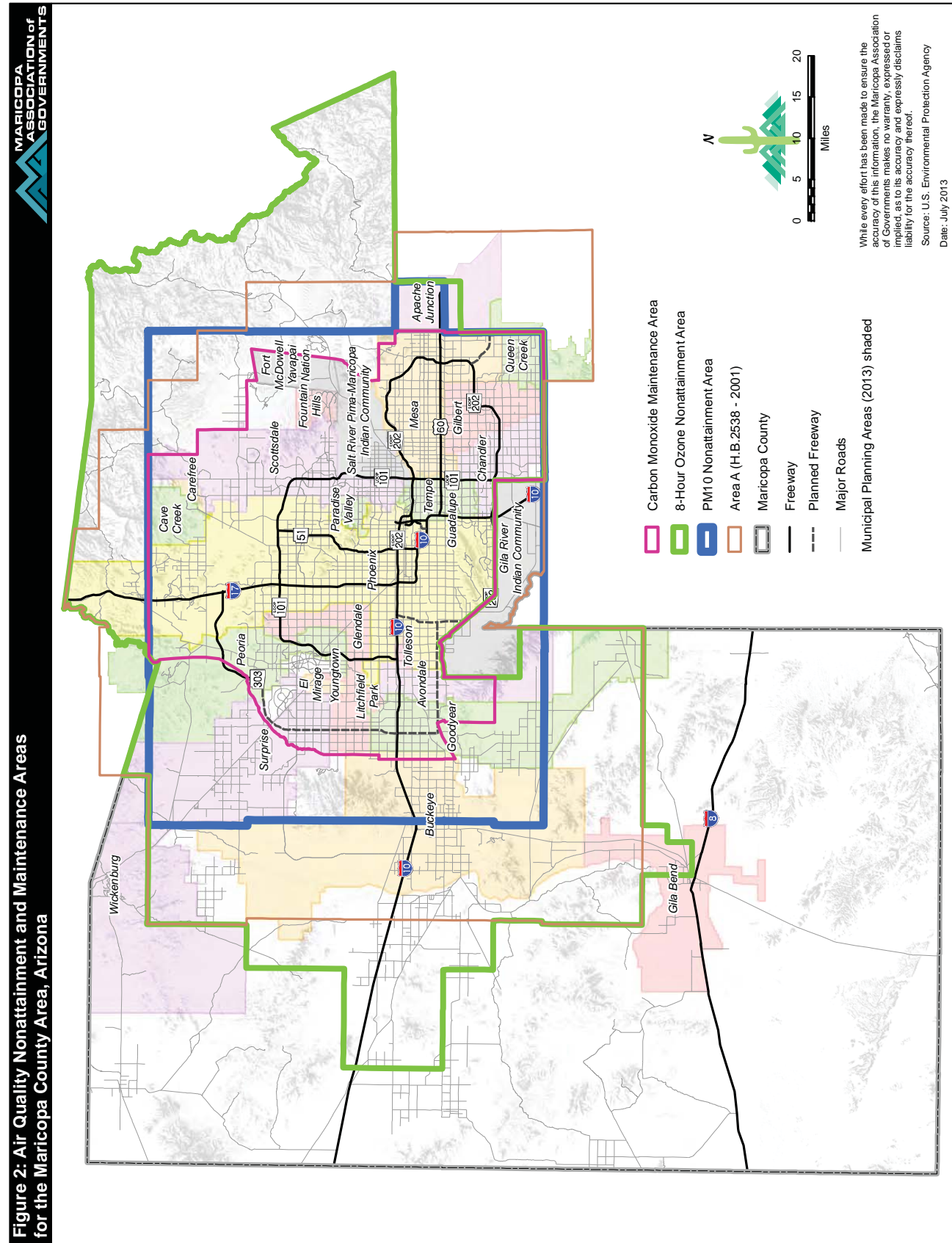
In 2008, EPA strengthened the eight-hour ozone standard. On April 30, 2012, EPA published the final rule designating nonattainment areas for the 2008 eight-hour ozone standard. For the 2008 eight-hour ozone nonattainment area, the existing nonattainment area boundary for the 1997 eight hour ozone standard for the Maricopa County nonattainment area was expanded to the west and southwest. The new boundary is shown in Figure 2. The 2008 eight-hour ozone nonattainment area covers approximately 5,018 square miles.

Consistent with conformity test requirements at 40 CFR 93.109(c)(2)(iii)(B), the regional emissions analysis compares the projected emissions from the 2008 eight-hour ozone nonattainment area for each analysis year with the budgets from the EPA-approved MAG 2007 Eight-Hour Ozone Plan.

Following promulgation of the PM-10 standard in 1987, EPA identified a larger PM-10 nonattainment area in 1990. The PM-10 nonattainment area encompasses 2,916 square



Figure 2- Air Quality Nonattainment and Maintenance Areas for the Maricopa County Area, Arizona



miles, consisting of a 48 by 60 mile rectangular grid encompassing eastern Maricopa County, plus a six by six mile section that includes a portion of the City of Apache Junction in Pinal County.

Attainment Status

Following the requirements of the 1990 Clean Air Act Amendments, EPA initially identified the MAG region as a “Moderate” nonattainment area for the eight-hour CO standard, with a design value of 12.6 parts per million (ppm), exceeding the current NAAQS of 9.0 ppm. The standard was not achieved by the Clean Air Act deadline of December 31, 1995. The area was reclassified to “Serious” by operation of law with an effective date of August 28, 1996 (EPA, 1996b). The new carbon monoxide attainment date was December 31, 2000. No violations of the carbon monoxide standard have occurred since 1996. The State, in a July 23, 1999 letter, requested a carbon monoxide attainment determination from EPA.

In June 2003, the MAG 2003 Carbon Monoxide Redesignation Request and Maintenance Plan for the Maricopa County Nonattainment Area was submitted to EPA. The CO Maintenance Plan demonstrated that all Clean Air Act requirements have been met and requested that EPA redesignate the area to attainment for carbon monoxide. On September 22, 2003, EPA published a final attainment determination for the carbon monoxide standard (EPA, 2003). On March 9, 2005, EPA published the final rule in the *Federal Register* approving the Revised MAG 1999 Serious Area Carbon Monoxide Plan and the Carbon Monoxide Maintenance Plan and designating the carbon monoxide area to attainment, effective April 8, 2005 (EPA, 2005a).

In April 2013, the MAG 2013 Carbon Monoxide Maintenance Plan for the Maricopa County Area was submitted to EPA. This plan satisfies Section 175A(b) of the Clean Air Act that requires an additional plan revision for maintaining the primary air quality standard for ten years after the expiration of the initial ten-year period be submitted to EPA eight years after redesignation of the area to attainment.

Under the 1990 Clean Air Act Amendments, the Maricopa County nonattainment area was classified as “Moderate” for the one-hour ozone standard. The standard was not achieved by the deadline of November 19, 1996. On November 6, 1997, EPA reclassified the area to “Serious” for ozone (EPA, 1997b), effective February 13, 1998 (EPA, 1998a). The new ozone attainment date was November 19, 1999. Prior to EPA’s revocation of the one-hour ozone standard in 2005, no violations of the one-hour ozone standard had occurred since 1996. The State, in a February 21, 2000 letter, requested an ozone attainment determination. On May 30, 2001, the Environmental Protection Agency published a final attainment determination for the one-hour ozone standard (EPA, 2001a).

The MAG 2004 One-hour Ozone Redesignation Request and Maintenance Plan for the Maricopa County Nonattainment Area was submitted to EPA in May 2004. The MAG One-Hour Ozone Maintenance Plan demonstrated that all Clean Air Act requirements had been

met and requested that EPA redesignate the area to attainment for one-hour ozone. On June 14, 2005, EPA published the final rule in the *Federal Register* approving the One-Hour Ozone Maintenance Plan and redesignating the one-hour ozone area to attainment (EPA, 2005b). EPA revoked the one-hour ozone standard on June 15, 2005.

On April 30, 2004, EPA published the final rule designating eight-hour ozone nonattainment areas, effective June 15, 2004. The eight-hour ozone nonattainment area in Maricopa and Pinal Counties is classified under Section D, Subpart 1, of the Clean Air Act, referred to as “Basic” nonattainment, with an attainment date of June 15, 2009. The MAG 2007 Eight-Hour Ozone Plan for the Maricopa Nonattainment Area was submitted to EPA by June 15, 2007. The MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area was submitted to EPA in March 2009. On June 13, 2012, EPA approved the MAG 2007 Eight-Hour Ozone Plan including the emissions budgets, effective July 13, 2012 (EPA, 2012d).

In 2008, EPA strengthened the eight-hour ozone standard. On April 30, 2012, EPA published the final rule designating nonattainment areas for the 2008 eight-hour ozone standard. For the 2008 eight-hour ozone nonattainment area, the existing nonattainment area boundary for the 1997 eight hour ozone standard for the Maricopa County nonattainment area was expanded to the west and southwest.

Under Section 107(d)(4) of the 1990 Clean Air Act Amendments, the PM-10 nonattainment area was initially classified as “Moderate,” with an attainment deadline of December 31, 1994. The standard was not achieved by that date. EPA reclassified the region to “Serious” in May 1996, with an effective date of June 10, 1996 (EPA, 1996a). The new attainment date for PM-10 was December 31, 2001 for Serious areas; however, the Revised MAG 1999 Serious Area Particulate Plan for PM-10 for the Maricopa County Nonattainment Area contained a request to extend the attainment date to December 31, 2006, as allowed in the Clean Air Act Amendments (MAG, 2000). In the July 25, 2002 *Federal Register*, the Environmental Protection Agency published the final approval of the Revised MAG 1999 Serious Area Particulate Plan for PM-10, including the request to extend the attainment date to December 31, 2006 (EPA, 2002a).

On May 25, 2007, EPA issued a final rule finding that the Maricopa County nonattainment area did not attain the PM-10 standard by December 31, 2006. In accordance with Section 189(d) of the Clean Air Act, MAG prepared a Five Percent Plan for PM-10 that was submitted to EPA by December 31, 2007 (MAG, 2007b). On September 9, 2010, EPA proposed to partially approve and partially disapprove the Five Percent Plan. On January 25, 2011, prior to any final EPA action, Arizona withdrew the Five Percent Plan from EPA consideration. On February 9, 2011, EPA published a notice of withdrawal of the May 30, 2008 adequacy finding on the PM-10 motor vehicle missions budget from the Five Percent Plan, effective January 31, 2011. On February 14, 2011, EPA made a finding that Arizona failed to submit the plan as required under the Clean Air Act, which triggered the sanctions clocks and obligation to impose a federal implementation plan if a new complete plan is not submitted. This EPA finding began an 18-month clock for mandatory

application of sanctions and a two-year clock for a Federal Implementation Plan. The EPA published a corrected notice of withdrawal on February 28, 2011.

The MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area was submitted to EPA on May 25, 2012. On July 20, 2012, EPA issued a completeness finding that stopped the 18-month clock for mandatory application of sanctions. On January 14, 2014, the Environmental Protection Agency signed a notice proposing to approve the MAG 2012 Five Percent Plan for PM-10.

In addition, on July 18, 1997 EPA promulgated federal air quality standards for PM-2.5. On January 5, 2005, EPA published a notice designating the Maricopa County area as an attainment area for PM-2.5, effective April 5, 2005.

Pinal County Nonattainment Areas

On February 3, 2011, EPA published the final rule designating a portion of Pinal County as nonattainment for the 2006 24-hour PM-2.5 standard based on 2006-2008 data, effective March 7, 2011. The West Central Pinal PM-2.5 Nonattainment Area covers approximately 323 square miles in the west central part of Pinal County.

Also, on May 31, 2012, EPA published the final rule designating the West Pinal PM-10 nonattainment area, effective July 2, 2012. EPA classified the nonattainment area as moderate. The West Pinal PM-10 Nonattainment Area covers approximately 1,326 square miles in the western half of Pinal County.

**Nonattainment Boundaries**

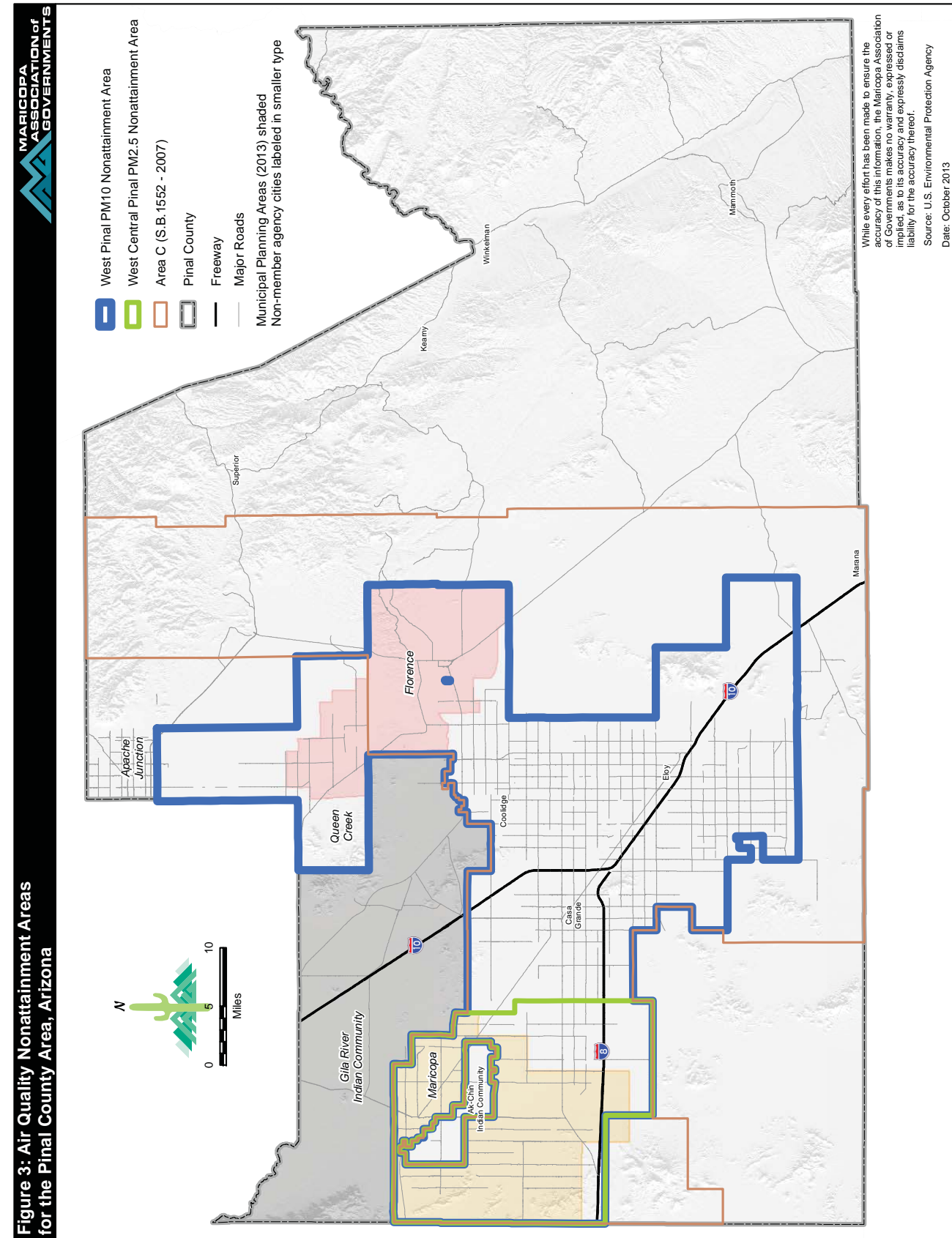
As shown in Figure 3, portions of the West Pinal PM-10 Nonattainment Area and West Central Pinal PM-2.5 Nonattainment Area are located within the metropolitan planning area boundaries of both MAG and the Sun Corridor Metropolitan Planning Organization.

**Attainment Status**

At the time of designation, EPA indicated that the State of Arizona is required to submit a SIP for the West Central Pinal PM-2.5 Nonattainment Area within three years following the March 7, 2011 effective date. On September 4, 2013, EPA published in the *Federal Register* a determination that the West Central Pinal PM-2.5 Nonattainment Area has attained the 2006 24-hour PM-2.5 standard based on clean data at the monitor during the 2010-2012 monitoring period.

In the May 31, 2012 final rulemaking, EPA indicated that the State of Arizona is required to submit a revision to the SIP for the West Pinal PM-10 Nonattainment Area within 18 months following the July 2, 2012 effective date.





**CONFORMITY TEST REQUIREMENTS**

Maricopa County Nonattainment and Maintenance Areas

Specific conformity test requirements established for the carbon monoxide maintenance area and the eight-hour ozone and PM-10 nonattainment areas are summarized below. The Carbon Monoxide Redesignation Request and Maintenance Plan, submitted to EPA in June 2003, contained 2006 and 2015 emissions budgets for carbon monoxide. These carbon monoxide budgets were found to be adequate by EPA on September 29, 2003. On March 9, 2005, EPA published the final rule in the *Federal Register* approving the Carbon Monoxide Maintenance Plan, including the emissions budgets, effective April 8, 2005. In April 2013, the MAG 2013 Carbon Monoxide Maintenance Plan for the Maricopa County Area was submitted to EPA. The new 2025 conformity budget in this plan will be used, if EPA finds it to be adequate or approves the plan. In this case, the 2025 budget will be utilized in addition to the 2015 budgets already approved by EPA.

The MAG 2007 Eight-Hour Ozone Plan, submitted to EPA by June 15, 2007, contained 2008 conformity budgets for the ozone precursors, VOC and NOx. These emission budgets were found to be adequate by EPA, effective November 9, 2007. On June 13, 2012, EPA approved the MAG 2007 Eight-Hour Ozone Plan including the emissions budgets, effective July 13, 2012. The MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan was submitted to EPA in March 2009. The maintenance plan established 2025 conformity budgets for VOC and NOx. These budgets will be used, if EPA finds them to be adequate or approves the Eight-Hour Ozone Maintenance Plan. In this case, the 2025 conformity budgets for ozone precursors will be utilized in addition to the 2008 budgets established by the MAG 2007 Eight-Hour Ozone Plan.

The Revised MAG 1999 Serious Area Particulate Plan for PM-10 for the Maricopa County Nonattainment Area was submitted to EPA in February 2000. This Plan established a PM-10 conformity budget of 59.7 metric tons per day for the attainment year of 2006. EPA approved the Revised MAG 1999 Serious Area PM-10 Plan and the conformity budget, effective August 26, 2002.

The MAG 2007 Five Percent Plan for PM-10 was submitted to EPA by December 31, 2007. This plan established a PM-10 conformity budget for the attainment year of 2010. The conformity budget was found to be adequate by EPA on July 1, 2008. On September 9, 2010, EPA proposed to partially approve and partially disapprove the Five Percent Plan. On January 25, 2011, prior to any final EPA action, Arizona withdrew the Five Percent Plan from EPA consideration. On February 9, 2011, EPA published a notice of withdrawal of the May 30, 2008 adequacy finding on the PM-10 motor vehicle missions budget from the Five Percent Plan, effective January 31, 2011. On February 14, 2011, EPA made a finding that Arizona failed to submit the plan as required under the Clean Air Act, which triggered the sanctions clocks and obligation to impose a federal implementation plan if a new complete plan is not submitted. This EPA finding began an 18-month clock



for mandatory application of sanctions and a two-year clock for a Federal Implementation Plan. The EPA published a corrected notice of withdrawal on February 28, 2011.

The MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area was submitted to EPA on May 25, 2012. On July 20, 2012, EPA issued a completeness finding that stopped the 18- and 24-month clocks for the mandatory application of sanctions. On April 19, 2013 and August 23, 2013, EPA proposed approval of several statutes included in the MAG 2012 Five Percent Plan for PM-10 that regulate PM-10 emissions from fugitive dust sources. On September 10, 2013, EPA advised that MAG should include in this conformity analysis the budgets from submitted plans so that an adequacy finding on a submitted SIP does not interfere with the conformity process. In the 2014 MAG Conformity Analysis, MAG conducted the conformity analysis with the budgets from the submitted plans. On December 5, 2013, EPA found the conformity budget in the MAG 2012 Five Percent Plan for PM-10 adequate for transportation conformity purposes, effective December 20, 2013.

The descriptions of the conformity tests that were performed for carbon monoxide, eight-hour ozone, and PM-10, as part of the 2014 MAG Conformity Analysis, are detailed below.

**Carbon Monoxide**

The MAG 1999 Serious Area Carbon Monoxide Plan for the Maricopa County Nonattainment Area was submitted to the EPA in July 1999 (MAG, 1999). The MAG 1999 Serious Area Carbon Monoxide Plan used the required EPA emissions model to assess the emission reduction measures required to demonstrate attainment and established a CO emissions budget of 411.6 metric tons per day for 2000 for the modeled area. The EPA issued a notice of adequacy effective December 14, 1999 in the *Federal Register* finding that the submitted CO motor vehicle emissions budget contained in the MAG 1999 Serious Area Carbon Monoxide Plan for the Maricopa County Nonattainment Area was adequate for transportation conformity purposes (EPA, 1999b).

The Revised MAG 1999 Serious Area Carbon Monoxide Plan for the Maricopa County Nonattainment Area was submitted to EPA in March 2001 (MAG, 2001). The Revised Plan reflected the repeal of the Random Onroad Testing Requirements (Remote Sensing Program) from the Vehicle Emissions Inspection Program by the Arizona Legislature in 2000. The Revised Plan used the required EPA emissions model to assess the emission reduction measures required to demonstrate attainment and established a CO emissions budget of 412.2 metric tons per day for 2000 for the modeled area. The EPA issued a notice of adequacy in the *Federal Register* on October 17, 2001, finding that the submitted CO motor vehicle emissions budget contained in the Revised MAG 1999 Serious Area Carbon Monoxide Plan for the Maricopa County Nonattainment Area was adequate for transportation conformity purposes (EPA, 2001b). The conformity budget for CO of 412.2 metric tons per day replaced the previous budget of 411.6 metric tons per day.

In June 2003, the MAG 2003 Carbon Monoxide Redesignation Request and Maintenance Plan was submitted to EPA (MAG, 2003). The CO Maintenance Plan used the EPA-approved MOBILE6 emissions model to develop a 2006 emissions budget for carbon monoxide of 699.7 metric tons per day and a 2015 budget of 662.9 metric tons per day. EPA found the 2006 and 2015 budgets to be adequate for conformity purposes, effective October 14, 2003. The 2006 budget applies to horizon years from 2006 through 2014 and the 2015 budget, to horizon years after 2014. The regional emissions analysis projected for the TIP and RTP must be less than or equal to these budgets.

On September 22, 2003, EPA published a final attainment determination for the carbon monoxide standard (EPA, 2003). In addition, on March 9, 2005, EPA published the final rule in the *Federal Register* approving the Revised MAG 1999 Serious Area Carbon Monoxide Plan and the MAG Carbon Monoxide Redesignation Request and Maintenance Plan as part of the redesignation of Maricopa County to an attainment area for carbon monoxide, effective April 8, 2005 (EPA, 2005a).

In April 2013, the MAG 2013 CO Maintenance Plan for the Maricopa County Area was submitted to EPA (MAG, 2013). The MAG 2013 CO Maintenance Plan used the EPA-approved MOVES model to develop a 2025 mobile source emissions budget of 559.4 metric tons per day. When EPA finds the new budget to be adequate or approves the MAG 2013 CO Maintenance Plan, the new 2025 CO budget will be applied to conformity horizon years of 2025 and beyond. Until this occurs, the EPA-approved 2015 budget will continue to be used for horizon years of 2015 and beyond.

**Eight-Hour Ozone**

On May 21, 2012, EPA published the final rule implementing the 2008 eight-hour ozone standard and also revoking the 1997 eight-hour ozone standard for transportation conformity purposes one year after the effective date of designations for the 2008 ozone standard (i.e., July 20, 2013). No backsliding will result from the revocation for purposes of transportation conformity, as areas designated nonattainment for the 2008 ozone standard will be required to use any existing adequate or approved motor vehicle emissions budgets for a prior ozone standard when determining conformity for the 2008 ozone standard until budgets for the 2008 ozone standard are either found adequate or are approved. This section discusses the conformity test requirements for the Maricopa nonattainment area for the 2008 eight-hour ozone standard. Ozone is a secondary pollutant, generated by chemical reactions in the atmosphere involving volatile organic compounds (VOC) and nitrogen oxides (NOx). The Eight-Hour Ozone Plan for the Maricopa Nonattainment Area (MAG, 2007a) addresses the 1997 eight-hour ozone standard of 0.08 parts per million and establishes conformity budgets for VOC and NOx in the modeled attainment year of 2008. The 2008 emissions budgets for the eight-hour ozone nonattainment area are 67.9 metric tons per day for VOC and 138.2 metric tons per day for NOx. EPA published a *Federal Register* notice finding these budgets to be adequate, effective November 9, 2007. On June 13, 2012, EPA approved the MAG 2007

Eight-Hour Ozone Plan including the emissions budgets, effective July 13, 2012 (EPA, 2012d).

The MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area (MAG, 2009) was submitted to EPA in March 2009. The Maintenance Plan establishes conformity budgets for VOC and NO<sub>x</sub> in the modeled maintenance year of 2025. The 2025 emissions budgets for the eight-hour ozone nonattainment area are 43.8 metric tons per day for VOC and 101.8 metric tons per day for NO<sub>x</sub>. If EPA publishes a *Federal Register* notice finding these new ozone precursor budgets to be adequate or approves the Maintenance Plan, both the 2008 and 2025 budgets for VOC and NO<sub>x</sub> will be used.

For the 2008 eight-hour ozone nonattainment area, the existing nonattainment area boundary for the 1997 eight-hour ozone standard for the Maricopa County nonattainment area was expanded to the west and southwest. Consistent with conformity test requirements at 40 CFR 93.109(c)(2)(iii)(B), the regional emissions analysis compared the projected emissions from the 2008 eight-hour ozone nonattainment area for each analysis year with the budgets from the EPA-approved MAG 2007 Eight-Hour Ozone Plan.

#### PM-10

The Revised MAG 1999 Serious Area Particulate Plan for PM-10 for the Maricopa County Nonattainment Area was submitted to EPA in February, 2000. This Plan established a PM-10 conformity budget of 59.7 metric tons per day for the attainment year of 2006. EPA approved the Revised MAG 1999 Serious Area PM-10 Plan, effective August 26, 2002.

As required by Clean Air Act Section 189(d), the MAG 2007 Five Percent Plan for PM-10 was submitted to EPA by December 31, 2007. The Plan established a PM-10 emissions budget for onroad mobile sources in the modeled attainment year of 2010. The 2010 conformity budget for PM-10 in the Plan was 103.3 metric tons per day for the PM-10 nonattainment area. EPA published a *Federal Register* notice finding the PM-10 budget to be adequate, effective July 1, 2008.

On September 9, 2010, EPA proposed to partially approve and partially disapprove the Five Percent Plan. On January 25, 2011, prior to any final EPA action, Arizona withdrew the Five Percent Plan from EPA consideration. On February 9, 2011, EPA published a notice of withdrawal of the May 30, 2008 adequacy finding on the PM-10 motor vehicle emissions budget from the Five Percent Plan, effective January 31, 2011. On February 28, 2011, EPA published a corrected notice of withdrawal.

On May 25, 2012, the MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area was submitted to EPA. The 2012 budget established in this Plan is 54.9 metric tons per day. On September 10, 2013, EPA advised that MAG should include in this conformity analysis the budgets from submitted plans so that an adequacy finding on a submitted SIP does not interfere with the conformity process. In the 2014 MAG

Conformity Analysis, MAG conducted the conformity analysis with the budget from the submitted plan and the motor vehicle emissions budget of 59.7 metric tons per day from the Revised MAG 1999 Serious Area Particulate Plan for PM-10, approved by EPA effective August 26, 2002. On December 5, 2013, EPA found the conformity budget in the MAG 2012 Five Percent Plan for PM-10 adequate for transportation conformity purposes, effective December 20, 2013.

Section 93.122(e)(2) of the federal conformity rule requires that PM-10 from construction-related fugitive dust be included in the regional PM-10 emissions analysis, if it is identified as a contributor to the nonattainment problem in a PM-10 plan. The motor vehicle emissions budget established in the Revised MAG 1999 Serious Area PM-10 Plan includes vehicle exhaust, tire wear, brake wear, reentrained dust from travel on paved roads, travel on unpaved roads, and road construction. Therefore, emissions from road construction are included as part of the PM-10 estimates developed for this conformity analysis.

#### Pinal County Nonattainment Areas

EPA designated a new PM-10 nonattainment area in Pinal County, effective July 2, 2012. Until the new Pinal County PM-10 Nonattainment Area has a conformity budget that has been found to be adequate or approved by EPA, a build/no-build analysis will be performed in accordance with the latest EPA conformity guidance (EPA, 2012c). The no-build network included regionally significant highways open to traffic and transit service in operation by December 31, 2012. In accordance with Section 93.119(h) of EPA conformity regulations, the no-build network also included all regionally significant projects in the Pinal PM-10 nonattainment area, regardless of funding source, which are currently under construction or undergoing right-of-way acquisition, are programmed in FY 2011 of the conforming MAG TIP, or have completed the National Environmental Policy Act (NEPA) process. The build networks included MAG TIP and RTP projects in the portion of the nonattainment area located within the MAG MPA, as well as regionally significant highway and transit projects in the remainder of the West Pinal nonattainment area, that are scheduled to be open to the public by 2015, 2025 and 2035.

EPA also designated a new PM-2.5 nonattainment area in Pinal County, effective March 7, 2011. On September 4, 2013, EPA published in the *Federal Register* a determination that the West Central Pinal PM-2.5 Nonattainment Area has attained the 2006 24-hour PM-2.5 standard based on clean data at the monitor during the 2010-2012 monitoring period. Conformity analyses must also be performed for the PM-2.5 nonattainment area, even if EPA issues a clean data finding. For the 2014 Conformity Analysis, a build/no-build analysis was performed by applying the assumptions described above to the smaller Pinal PM-2.5 nonattainment area. Since EPA or the Arizona Department of Environmental Quality have not determined that nitrogen oxide (NO<sub>x</sub>) emissions are an insignificant contributor to the PM-2.5 attainment problem, per Section 93.119(f)(9) of EPA conformity regulations, NO<sub>x</sub>, as well as PM-2.5 emissions from onroad mobile sources, must be included in the build/no-build analysis for the Pinal PM-2.5 nonattainment area.

ANALYSIS YEARS

Maricopa County Nonattainment and Maintenance Areas

In selecting analysis years for the Maricopa County nonattainment and maintenance areas, which have EPA-approved mobile source emissions budgets, the conformity rule (Section 93.118(d)) requires that: (1) if the attainment year is in the time frame 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. For the 2014 MAG Conformity Analysis, onroad mobile source emissions of carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NOx), and PM-10 were estimated for the analysis years 2015, 2025, and 2035. These three years were used to compare mobile source emissions with EPA-approved budgets for CO, VOC, NOx and PM-10.

The year 2015 was modeled for CO, because there is an EPA-approved emissions budget for the maintenance year of 2015 in the MAG 2003 Carbon Monoxide Redesignation Request and Maintenance Plan (MAG, 2003). The year 2015 was also modeled for VOC and NOx since 2015 is the attainment year for the 2008 eight-hour ozone standard, and for PM-10. The year 2025 was modeled for VOC and NOx, because it is the maintenance year in the Eight-Hour Ozone Redesignation Request and Maintenance Plan (MAG, 2009). The year 2025 was modeled for CO, since it is the maintenance year in the MAG 2013 Carbon Monoxide Maintenance Plan (MAG, 2013). The year 2025 was also modeled for PM-10, because it is an intermediate year that meets the federal conformity requirement that analysis years be no more than ten years apart. The year 2035 was modeled for all pollutants, since it is the last year of the 2035 MAG Regional Transportation Plan.

Pinal County Nonattainment Areas

In selecting build/no-build analysis years for the Pinal County nonattainment areas, which do not have mobile source emissions budgets, the conformity rule (Section 93.119(g)) indicates that the years must be no more than ten years apart, the first year must be no more than five years beyond the year in which the conformity determination is being made, and the last year must be aligned with the transportation plan (i.e., the 2035 MAG Regional Transportation Plan which contains some projects in the Pinal nonattainment areas). These three criteria are met by the years 2015, 2025 and 2035. For the 2014 MAG Conformity Analysis, mobile source emissions were estimated for the build and no-build scenarios for 2015, 2025 and 2035. PM-10 emissions (exhaust, tire wear and brake wear) were estimated for the Pinal PM-10 nonattainment area, while PM-2.5 (exhaust, tire wear, brake wear, and reentrained dust from paved and unpaved roads) and nitrogen oxide exhaust emissions were estimated for the Pinal PM-2.5 nonattainment area.

2 LATEST PLANNING ASSUMPTIONS

The Clean Air Act states that “the determination of conformity shall be based on the most recent estimates of emissions, and such estimates shall be determined from the most recent population, employment, travel, and congestion estimates as determined by the MPO or other agency authorized to make such estimates.” On January 18, 2001, the U. S. DOT issued guidance developed jointly with EPA to provide additional clarification concerning the use of latest planning assumptions in conformity determinations (U.S. DOT, 2001). In December 2008, EPA published revisions to the 2001 guidance entitled, “Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations” (EPA, 2008b).

Key elements of this guidance are identified below:

- Areas are strongly encouraged to review and strive towards regular five-year updates of planning assumptions, especially population, employment, and vehicle registration assumptions.
- The latest planning assumptions must be derived from the population, employment, travel and congestion estimates that have been most recently developed by the MPO (or other agency authorized to make such estimates) and approved by the MPO.
- Conformity determinations that are based on information that is older than five years should include written justification for not using more recent information. For areas where updates are appropriate, the conformity determination should include an anticipated schedule for updating assumptions.

The latest planning assumptions used in the 2014 MAG Conformity Analysis are summarized in Table 2. The methodology and scheduled updates for the planning assumptions are discussed below.

The conformity regulations (EPA, 2012c) indicate that “the conformity determination...must be based upon the most recent planning assumptions in force at the time the conformity analysis begins...as determined through the interagency consultation process.” It has been determined through the consultation process that the “time that the conformity analysis begins” is the day that the first traffic assignment is submitted for travel demand modeling for the 2014 MAG Conformity Analysis. For this conformity analysis, “time that the conformity analysis begins” was September 29, 2013.



TABLE 2. LATEST PLANNING ASSUMPTIONS FOR MAG CONFORMITY DETERMINATIONS

Assumption	Source	MAG Models	Next Scheduled Update
Population and Employment	Under the Governor's Executive Order 2011-04, official County projections are updated every 3 to 4 years. These official projections are used by all agencies for planning purposes. Following the release of the 2010 U.S. Census data, the Arizona Department of Administration (ADOA) prepared a new set of Maricopa County projections in December 2012. MAG developed a set of employment projections for Maricopa County that are consistent with the ADOA population projections and also prepared subcounty population and employment projections. The MAG Regional Council approved the subcounty socioeconomic projections in June 2013. In addition, Central Arizona Governments (CAG) approved the Pinal County subcounty socioeconomic projections, based on the ADOA Pinal County projections, in June 2013.	AZ-SMART (UrbanSim/OPUS)	Under the Governor's Executive Order 2011-04, official county socioeconomic projections will be developed by the Arizona Department of Administration (ADOA). It is anticipated that ADOA will complete the county level projections in 2015 and MAG will prepare subcounty socioeconomic projections for adoption by the MAG Regional Council within six months after receipt of the ADOA county level projections.
Traffic Counts	The highway models were validated in 2013 for the 2011 base year, using approximately 3,300 traffic counts collected in 2011.	TransCAD	Region-wide traffic counts are typically collected by MAG every 2-4 years, if funds are available.
Vehicle Miles of Travel	The passenger travel demand models were calibrated in 2012-2013 using data from the 2008-2009 home interview survey, 2009 Transearch data, 2010-2011 regional transit on-board survey, 2011 Truck GPS data, and 2012 Airport and ASU surveys. The recalibration effort included a complete update of the regional travel demand model based on the relevant data sets listed above. Trip generation and trip distribution were recalibrated based on the 2008-2009 National Household Travel Survey Arizona Add-On sample and 2006-2009 American Community Survey and Public Use Microdata Sample data sets. Mode choice was recalibrated based on the 2010 on-board survey. The truck model was recalibrated based on the new 2009 Transearch data and 2011 Truck GPS data from ATRI. Special generator sub-models were recalibrated based on 2012 regional airports and ASU travel surveys. The external travel model was recalibrated in 2011 based on the 2008 external travel study. Volume-delay functions were recalibrated in 2012-2013 based on the 2011 commercial speed data. The overall base year for the recalibrated and validated model is 2011.	TransCAD	MAG has completed a major update, development and recalibration of the regional transportation model in FY 2013. The FY 2014 Unified Planning Work Program (UPWP) includes funding for the initiation of the next series of travel surveys in calendar years 2014-2016. These surveys will form a foundation for the next round of model development and updates. Various commercial data sources will be used to maintain and incrementally update the models in between the major recalibration updates.
Speeds	The highway models were validated using 49 million traffic speed records purchased from NOKIA for calendar year 2011.	TransCAD	Travel speed studies are conducted periodically to validate the transportation models. MAG has also purchased commercial speed data for future estimation and model calibration purposes.
Vehicle Registrations	July 2013 vehicle registrations were provided by ADOT.	MOVES2010b	When newer data become available from ADOT.
Implementation Measures	Latest implementation status of commitments in prior SIPs.	N/A	Updated for every conformity analysis.

POPULATION AND EMPLOYMENT

In accordance with the Governor's Executive Order 2011-04, official county socioeconomic projections based on the 2010 U.S. Census have been developed by the Arizona Department of Administration (ADOA). The ADOA methodology is described at <http://www.workforce.az.gov/pubs/demography/ArizonaPopulationProjections2012.pdf>. ADOA completed the county level projections in December 2012. MAG prepared subcounty socioeconomic projections for Maricopa County that were adopted by the MAG Regional Council in June 2013. The Central Arizona Governments (CAG) also approved subcounty population projections for Pinal County, based on the official ADOA projections, in June 2013.

The travel and speed estimates produced by the MAG transportation models for the analysis years in the 2014 MAG Conformity Analysis are based on the MAG and CAG subcounty population and employment projections that are consistent with the ADOA projections and the 2010 U.S. Census.

Methodology

ADOA prepared the official Arizona population projections by county, using 2010 U.S. census data as the base. MAG used official ADOA population projections consistent with the 2010 U.S. Census. These projections for Maricopa County were distributed to smaller geographic areas by MAG using the latest available data and a state-of-the-art land use model system called AZ-SMART. The nationally-recognized UrbanSim microsimulation model was integrated into AZ-SMART and used to allocate county projections of households and employment to regional market areas based upon the pre-existing location of these activities, land consumption, and transportation system accessibility. The allocation of population and employment from market areas to land use parcels was accomplished with UrbanSim, which simulates real-estate development and locates population and employment based on measures such as accessibility to employment, adjacent land uses, highway access, and proximity to other development, et cetera.

Population and employment at the land use parcel level in the MAG planning area were aggregated to TAZs using AZ-SMART. The subcounty socioeconomic projections developed with the AZ-SMART model were approved by the MAG Regional Council in June 2013.

Since the MAG transportation modeling area includes Pinal County, in collaboration with the Central Arizona Governments (CAG), MAG has also prepared socioeconomic projections for Pinal County. MAG prepared projections by Municipal Planning Area (MPA) using ADOA population control totals for Pinal County. The projections by MPA were approved by the CAG Regional Council in June 2013. MAG then prepared the projections at the traffic analysis zone (TAZ) level by controlling to the MPA control totals approved by CAG. AZ-SMART, the MAG socioeconomic modeling system, was utilized to produce the

MPA and TAZ projections for Pinal County. The TAZ projections have been reviewed by CAG and its member agencies.

Next Scheduled Update

In June 2011, the Arizona Department of Administration (ADOA) was designated as the State agency responsible for preparing official population estimates and projections for the State of Arizona. The next update of the TAZ socioeconomic projections for Maricopa County will be based on the official ADOA county-level projections, required by Executive Order 2011-04. It is anticipated that ADOA will provide the next set of county level projections, based on Census data, to MAG in 2015 and MAG will prepare the subcounty level projections for Maricopa County for approval by the MAG Regional Council within six months after receiving the county level projections from ADOA.

**TRAFFIC COUNTS**

The highway traffic volumes estimated by the MAG transportation models were validated in 2013 for the 2011 base year, using approximately 3,300 traffic count locations collected by MAG in 2011 and 49 million traffic speed records purchased from NOKIA for calendar year 2011. MAG transportation models have been re-calibrated in 2012-2013 based on the travel surveys conducted in 2008-2012. New model validations are based on the model runs with updated socioeconomic input files and recalibrated transportation models. Use of the most recent traffic counts to validate the models is consistent with the federal conformity guidance which strongly encourages areas to update the planning assumptions for network-based travel models at least every five years (EPA, 2008b).

Methodology

MAG uses TransCAD software, as well as custom developed programs, to perform travel demand modeling. TransCAD provides a geographic information systems (GIS) interface that facilitates transportation modeling. The MAG transportation models follow a traditional four-step process: trip generation, trip distribution, mode choice, and traffic/transit assignment. Trip generation determines the number of person trips produced and attracted by traffic analysis zone. Trip distribution links the productions and attractions by TAZ. The nested logit mode choice model determines the number of person trips allocated to automobile and transit modes. The mode choice model is sensitive to highway and transit travel times, as well as pricing variables. Highway and transit route choice is determined in the assignment step, based on operating costs, travel times, and distances. Capacity-restrained traffic assignments are performed for the AM peak period, mid-day, the PM peak period, and night time. A feedback loop between traffic assignment and trip distribution is utilized to achieve near-equilibrium highway speeds. Revised documentation of the transportation models, reflecting results of the FY 2013 recalibration, is currently under development.

Next Scheduled Update

Region-wide traffic counts are typically collected by MAG every 2-4 years and commercial speed data is normally purchased every 1-2 years, if funding is available.

**VEHICLE MILES OF TRAVEL**

MAG completed recalibration of the regional transportation model in 2013. The models were recalibrated using new socioeconomic data based on the latest Arizona Department of Administration (ADOA) population projections and 2010 Census data. The recalibration of the models is based on data from a 2008-2009 household travel survey, 2010-2011 regional transit on-board survey, two 2012 special generator travel surveys (ASU and regional airports), traffic counts and speed data collected in 2011, as well as the latest American Community Survey Data and Public Use Microdata Sample. New 2011 GPS truck data and new commercial commodity flow data were also purchased to develop and recalibrate the truck model. The external travel model was also recalibrated in 2011 based on the 2008 external travel study. The base year for the model calibration and validation is 2011.

The transportation models simulate peak and daily traffic volumes on more than 30,000 highway links, as well as the transit trips on bus and light rail routes. Vehicle miles of travel (VMT) by link, output by the highway assignment process, are input to the MAG MOVESLink model used to estimate onroad mobile source emissions for conformity analyses.

Transportation model estimates of vehicle volumes are validated using actual traffic counts. The MAG transportation models were validated against approximately 3,300 traffic counts collected in 2011 for the 2011 base year. Table 3 summarizes the validation results by area type for freeways and arterials. Both the R-squared ( $R^2$ ) and Percent Root Mean Square Error (% RMSE) statistics indicate that there is a good fit between transportation model-estimated 2011 weekday traffic volumes and traffic count data.

In previous MAG conformity analyses, transportation model estimates of VMT were reconciled with the VMT reported by the Highway Performance Monitoring System (HPMS) in order to comply with Section 93.122(b) of the Transportation Conformity Regulations. These regulations require that regional emissions analyses in serious, severe, and extreme ozone nonattainment areas and serious carbon monoxide nonattainment areas, with urbanized area populations over 200,000, meet certain network-based modeling requirements, including reconciliation of modeled VMT with HPMS.

Since EPA approved the MAG Carbon Monoxide and One-Hour Ozone Redesignation Request and Maintenance Plans in 2005, the Maricopa area is no longer a serious nonattainment area for carbon monoxide or one-hour ozone. In addition, the area was not classified as a serious, severe or extreme nonattainment area for the 1997 eight-hour

TABLE 3.  
AGGREGATED MODEL VALIDATION RESULTS  
MODEL-ESTIMATED 2011 WEEKDAY VOLUMES VS. 2011 TRAFFIC COUNTS

	Freeways and Arterials	
Area Type	R <sup>2</sup>	% RMSE
CBD	0.977	23.9%
Outlying CBD	0.975	20.8%
Mixed Urban	0.936	29.0%
Suburban	0.898	41.0%
Rural	0.953	40.3%
All	0.960	28.3%

ozone standard and has not violated this standard since 2005. Effective July 20, 2012, the Maricopa area was classified as a marginal nonattainment area for the new, more stringent, 2008 eight-hour ozone standard. In the future, if the Maricopa area is classified as serious, severe or extreme for a more stringent eight-hour ozone standard, the VMT estimated by the transportation models will be reconciled against HPMS VMT for the most recent model calibration year.

The requirement to reconcile travel demand model output to HPMS traffic volumes does not apply to the Pinal County nonattainment areas, because the urbanized area population is less than 200,000. In addition, the areas are in nonattainment for particulates, rather than ozone or carbon monoxide.

As indicated above, the requirements of Section 93.122(b) do not apply to the Maricopa County nonattainment or maintenance areas or the Pinal County nonattainment areas. Therefore, reconciliation of modeled VMT with HPMS is not required for the 2014 MAG Conformity Analysis. However, it is important to note that the most recent comparison of model-estimated and HPMS VMT for the travel demand model calibration year of 2011 concluded that the model and HPMS VMT estimates were nearly identical.

Next Scheduled Update

The MAG FY 2014 Unified Planning Work Program establishes a three-year on-call contract for the travel data collection and subsequent MAG model recalibration and updates. New travel surveys are scheduled for the 2014-2016 calendar years with subsequent model recalibration and updates.

**SPEEDS**

Speeds obtained from the capacity-restrained traffic assignments are “fed-back” in the travel demand modeling chain. The trip distribution, mode choice, and traffic assignment steps of the chain are executed until PM peak period trip tables and link volumes are in equilibrium. In addition to vehicle miles of travel, the MAG transportation models calculate system performance measures such as vehicle hours of travel and volume to capacity ratios.

Periodically, MAG conducts speed studies or purchases commercial speed data to compare model-estimated speeds with empirical data. MAG purchased 2011 speed data from NOKIA that was used to update the speeds estimated by the MAG transportation models in 2013, as discussed in the Methodology section below.

Methodology

MAG used the 2011 NOKIA region-wide speed data and ADOT freeway detector data to improve the speed estimates produced by the transportation models. Comparisons of



2011 transportation model-estimated speeds with speeds obtained from NOKIA 2011 speed data are illustrated in Figures 4 through 11. Estimated versus observed speeds by area type for arterials and freeways are shown for four time periods: A.M. peak (6 am to 9 am), mid-day (9 am to 2 pm), P.M. peak (2 pm to 6 pm), and night time (6 pm - 6 am).

In the transportation modeling area, the TransCAD-estimated speeds for arterials and freeways are within nine percent of the observed peak and off-peak speeds for all area types and the maximum difference in overall speeds is five miles per hour, with most of the speeds having a much smaller difference. The differences in speed by time period, functional class, and area type, shown in Figures 4 through 11, demonstrate that the model-estimated speeds are in reasonable agreement with observed arterial and freeway speeds during all of the peak and off-peak time periods.

Next Scheduled Update

MAG has purchased private-sector speed data for 2012. The data is being processed and will be used in ongoing model updates. New model validations will be based on the model runs with updated input files and recalibrated transportation models.

VEHICLE REGISTRATIONS

Vehicle registrations for Maricopa and Pinal Counties in July 2013 are the latest provided to MAG by the Motor Vehicle Division of the Arizona Department of Transportation (ADOT). In the 2014 MAG Conformity Analysis, the July 2013 registrations were input to the latest version of MOVES to estimate onroad mobile source emissions. MOVES derives the vehicle population and age distribution for estimating wintertime CO emissions from the July 2013 registrations. The vehicle registration data provided by ADOT has been converted to MOVES format. MAG will use newer vehicle registration data when provided by ADOT.

FIGURE 4.  
2011 ESTIMATED VS. OBSERVED A.M. PEAK SPEEDS ON ARTERIALS

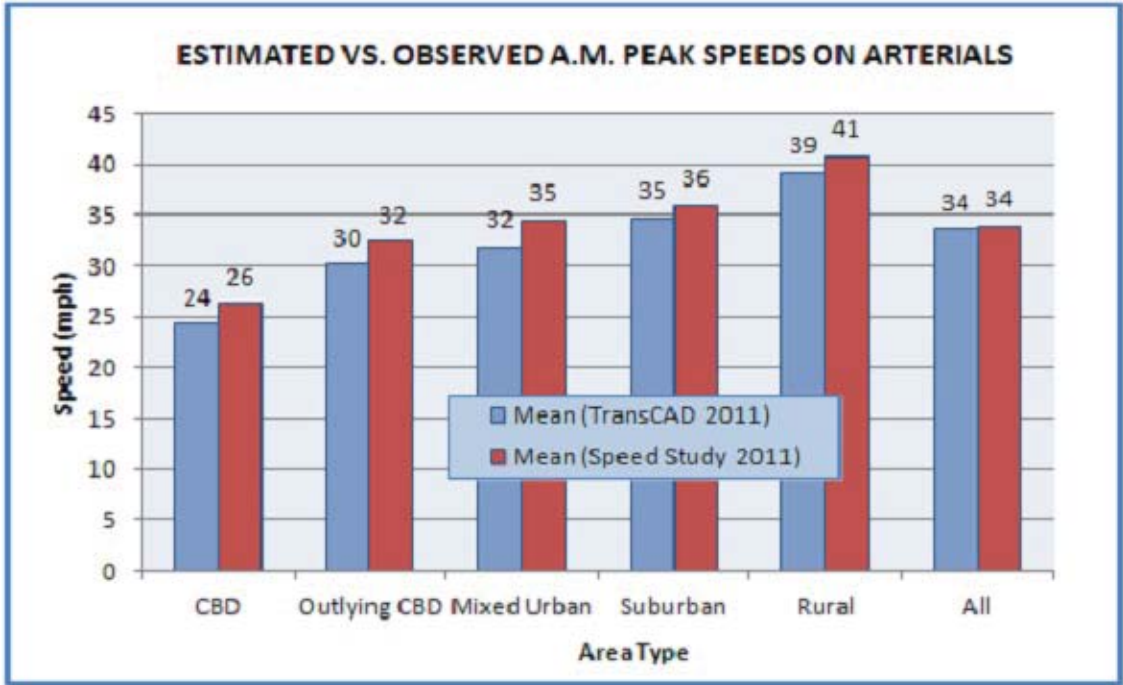


FIGURE 5.  
2011 ESTIMATED VS. OBSERVED A.M. PEAK SPEEDS ON FREEWAYS

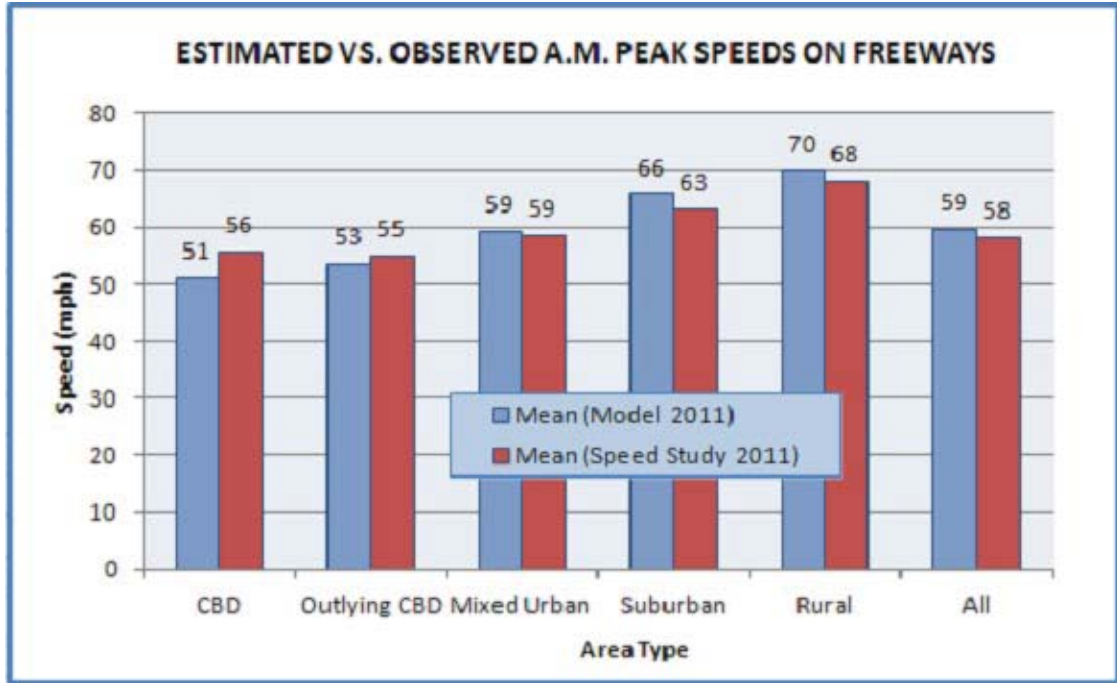


FIGURE 6.  
2011 ESTIMATED VS. OBSERVED MID-DAY SPEEDS ON ARTERIALS

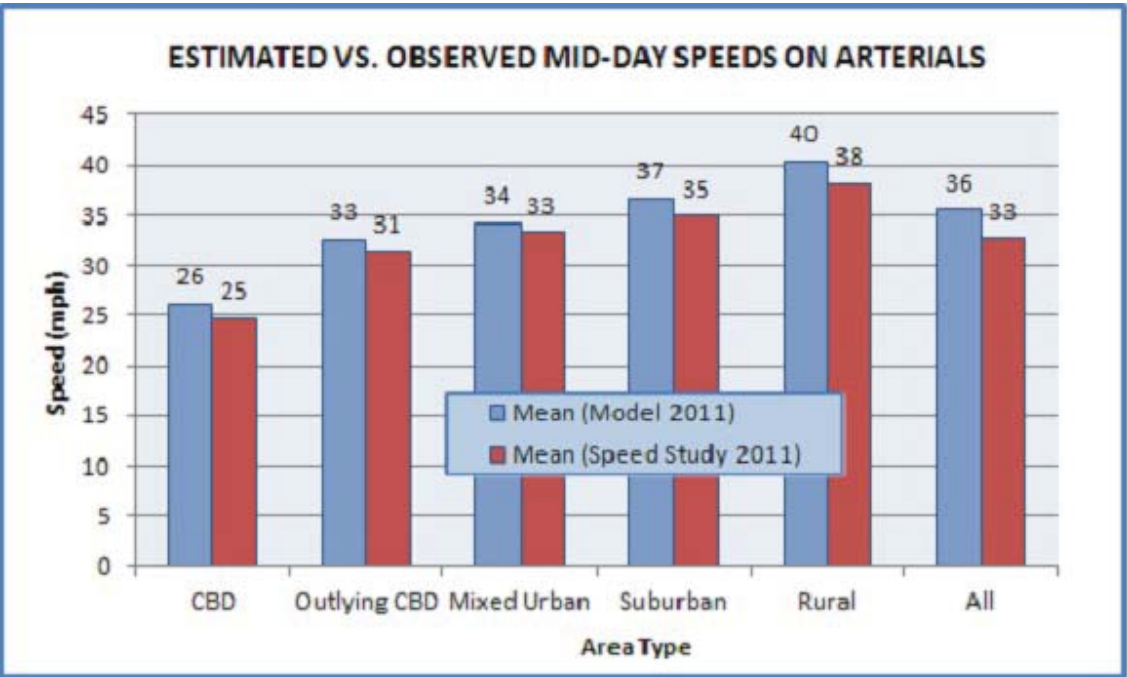


FIGURE 7.  
2011 ESTIMATED VS. OBSERVED MID-DAY SPEEDS ON FREEWAYS

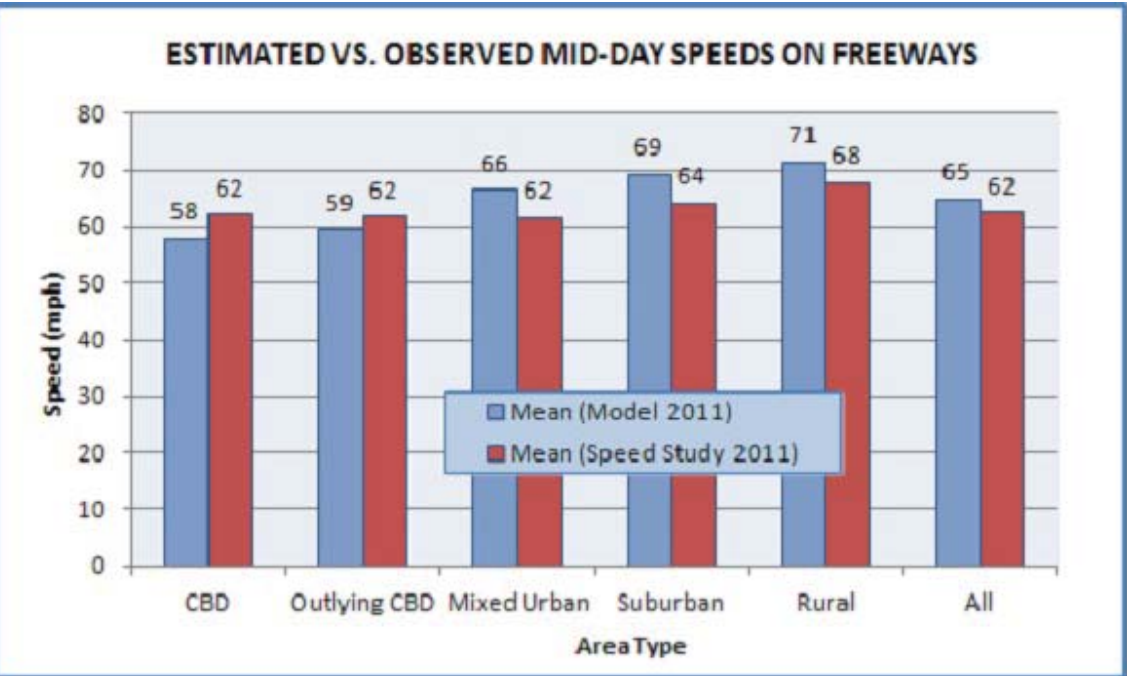


FIGURE 8.  
2011 ESTIMATED VS. OBSERVED P.M. PEAK SPEEDS ON ARTERIALS

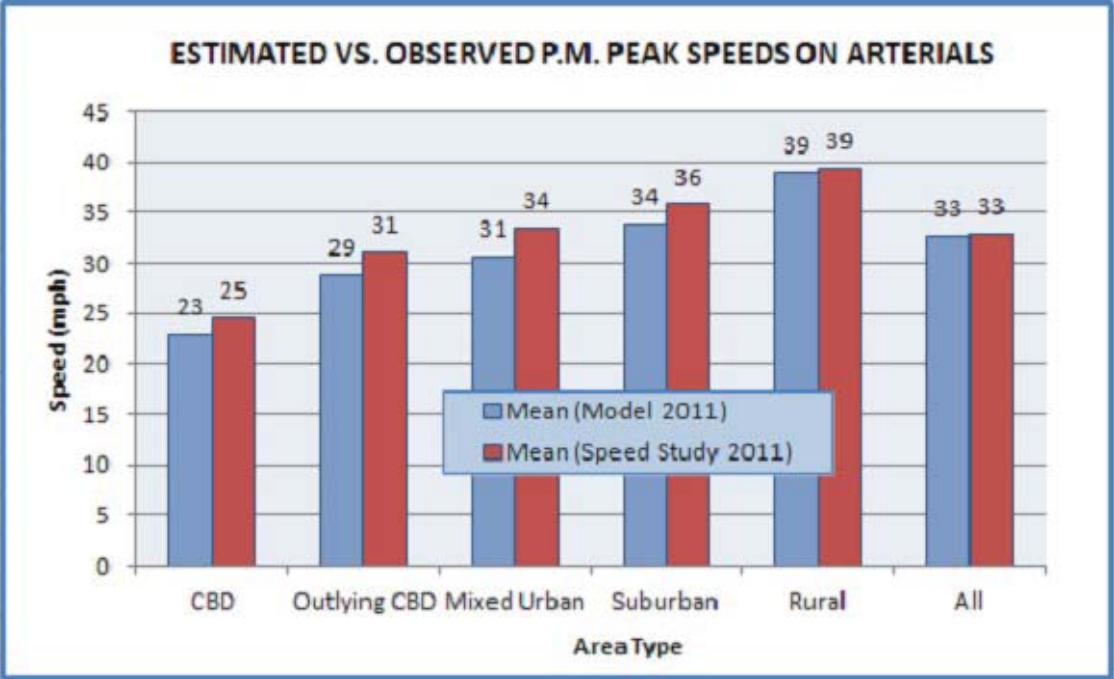


FIGURE 9.  
2011 ESTIMATED VS. OBSERVED P.M. PEAK SPEEDS ON FREEWAYS

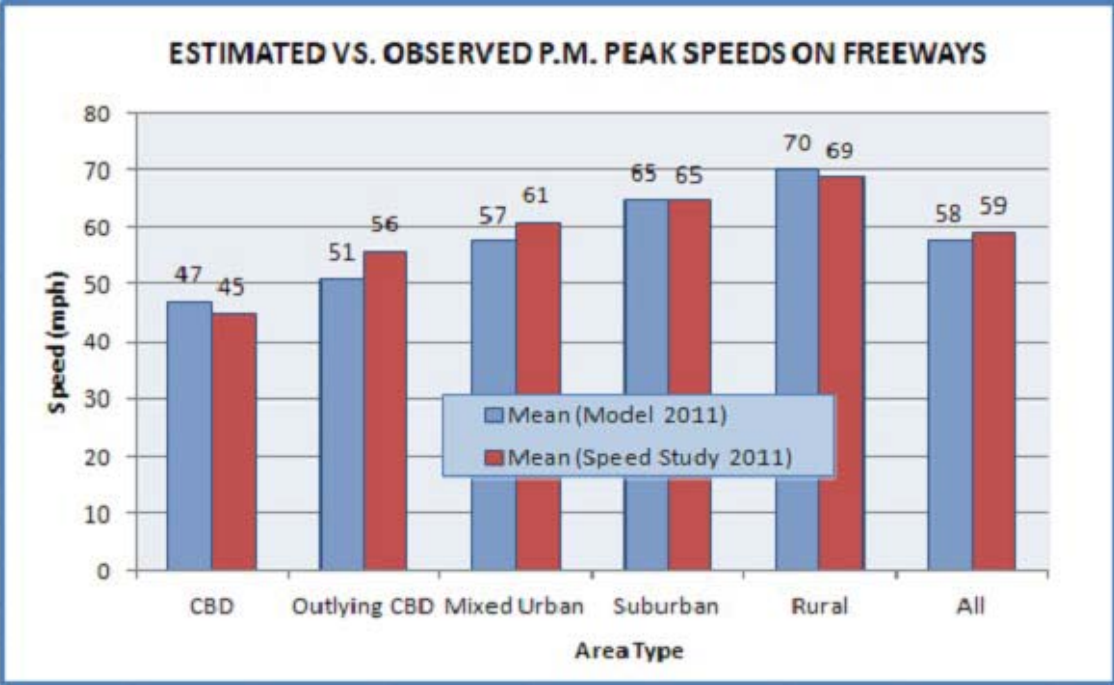


FIGURE 10.  
2011 ESTIMATED VS. OBSERVED NIGHT TIME SPEEDS ON ARTERIALS

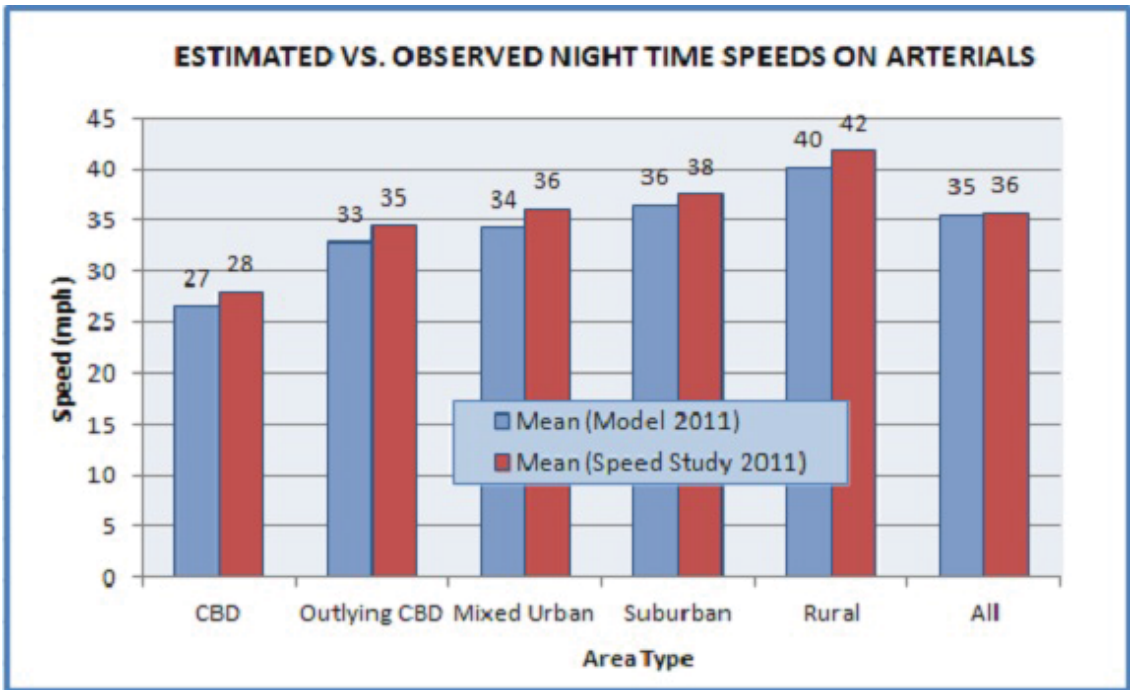
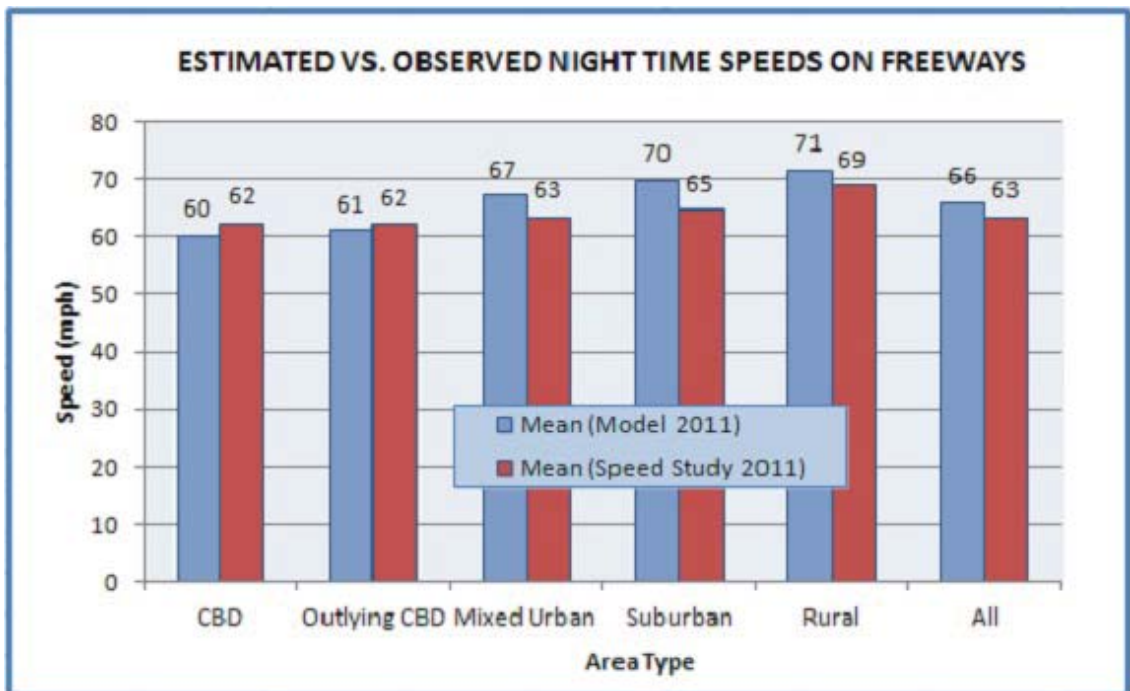


FIGURE 11.  
2011 ESTIMATED VS. OBSERVED NIGHT TIME SPEEDS ON FREEWAYS



**IMPLEMENTATION MEASURES**

Maricopa County Nonattainment and Maintenance Areas

For the Maricopa County nonattainment and maintenance areas, emission reduction credit was assumed for the committed measures in the applicable SIPs, including the measures shown in Table 4. The emission reductions assumed for these committed measures reflect the latest implementation status of all measures for which emission reduction credits were assumed in the applicable SIPs. As required by the conformity rule, the applicable transportation control measures (TCMs) are fully documented in Chapter 5.

Emission reduction credit was applied for committed control measures and committed contingency measures contained in the applicable MAG air quality plans. Credit may also be taken for Congestion Mitigation and Air Quality Improvement (CMAQ) projects in the MAG Transportation Improvement Program, if credit for these measures was not quantified in the air quality plans. In addition, emission reduction credit for strengthening of existing control measures or implementation of new control measures, specifically identified in the MAG TIP or RTP, was incorporated into the analysis, where appropriate. Chapter 4 describes the assumptions made in calculating emission reduction credit for committed measures in the MAG air quality plans.

Pinal County Nonattainment Areas

Since no State Implementation Plan (SIP) revisions have been submitted to EPA for the Pinal County nonattainment areas, emission reductions were assumed for sources in these areas that are currently controlled by Arizona state laws. For the 2014 MAG Conformity Analysis, a six percent reduction was applied to PM-10 emissions from vehicles traveling on agricultural unpaved roads in the Pinal PM-10 nonattainment area. This reduction reflects requirements of the Arizona Agricultural Best Management Practices (BMPs) that apply to all moderate PM-10 nonattainment areas in the state. The Agricultural BMPs went into effect when EPA designated West Pinal to be a moderate PM-10 nonattainment area, effective July 2, 2012.

The six percent reduction is based on assumptions used in calculating agricultural unpaved road emissions in the 2008 Periodic Emissions Inventory for PM-10 prepared by the Maricopa County Air Quality Department (MCAQD, 2011). The six percent reduction was applied in each conformity analysis year for both the build and no-build scenarios in the Pinal PM-10 nonattainment area.

In addition, PM-10 emission reduction credit was taken in the Pinal PM-10 nonattainment area for projects that are scheduled to pave unpaved roads. These projects are identified in Chapter 4. The emission reductions due to BMPs and paving projects were not applied to the Pinal PM-2.5 nonattainment area, because unpaved road emissions are not part of the conformity analysis for that area.



TABLE 4.  
COMMITTED MEASURES IN THE  
MARICOPA COUNTY NONATTAINMENT AND MAINTENANCE AREAS <sup>4</sup>

Measure #	Reference	Measure Description	Pollutant(s)
1	CO Maintenance Plan <sup>1</sup>	CARB Phase 2 with 3.5 Percent Oxygenate in Winter	CO
1	Eight-Hour Ozone Maintenance Plan <sup>2</sup>	Summer Fuel Reformulation with 7 psi from May 1 through September 30	VOC, NOx
2 2	CO Maintenance Plan Eight-Hour Ozone Maintenance Plan	Phased-In Emission Test Cutpoints	CO, VOC, NOx
3 3	CO Maintenance Plan Eight-Hour Ozone Maintenance Plan	One-Time Waiver from Vehicle Emissions Test	CO, VOC, NOx
5 4C 16	CO Maintenance Plan Eight-Hour Ozone Maintenance Plan Serious Area PM-10 Plan <sup>3</sup>	Coordinate Traffic Signal Systems	CO, VOC, NOx, PM-10
6 5C	CO Maintenance Plan Eight-Hour Ozone Maintenance Plan	Develop Intelligent Transportation Systems	CO, VOC, NOx
7 4	CO Maintenance Plan Eight-Hour Ozone Maintenance Plan	Tougher Enforcement of Vehicle Registration and Emission Test Compliance	CO, VOC, NOx
1C 6	CO Maintenance Plan Eight-Hour Ozone Maintenance Plan	Expansion of Area A Boundaries (HB 2538)	CO, VOC, NOx
2C 1C	CO Maintenance Plan Eight-Hour Ozone Maintenance Plan	Gross Polluter Option for I/M Program Waivers	CO, VOC, NOx
3C 2C	CO Maintenance Plan Eight-Hour Ozone Maintenance Plan	Increase Waiver Repair Limit Options	CO, VOC, NOx
3C	Eight-Hour Ozone Maintenance Plan	Federal Heavy Duty Diesel Vehicle Emissions Standards	VOC, NOx

<sup>1</sup>Carbon Monoxide Redesignation Request and Maintenance Plan for the Maricopa County Nonattainment Area, May 2003 (MAG, 2003).

<sup>2</sup>Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area, February 2009 (MAG, 2009).

<sup>3</sup>Revised MAG 1999 Serious Area Particulate Plan for PM-10 for the Maricopa County Nonattainment Area, February 2000 (MAG, 2000).

<sup>4</sup>The EPA approved these measures effective June 14, 2005 in the Final Rule Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes; Arizona; Redesignation of Phoenix to Attainment for the 1-Hour Ozone Standard. *Federal Register*, June 14, 2005, Vol.70, No. 113, p. 34362.

3 TRANSPORTATION MODELING

The transportation modeling performed for the 2014 MAG Conformity Analysis for the FY 2014-2018 MAG Transportation Improvement Program and 2035 MAG Regional Transportation Plan is based on the latest planning assumptions, as required in the federal conformity rule (40 CFR 93.110) and documented in Chapter 2. A summary of the transportation model characteristics, key socioeconomic data, and other data related to the land use and transportation system forecasts is provided in this chapter.

TRANSPORTATION MODELS

MAG regional transportation modeling is performed using TransCAD software for both highway and transit network assignments. The transportation models forecast AM peak period, mid-day, PM peak period, and night time vehicle traffic, as well as daily transit ridership, for the MAG transportation modeling area. The transportation modeling area currently contains 3,009 traffic analysis zones and covers an area of approximately 16,080 square miles. The latest calibration of the highway models was completed in 2013, using data from the 2008-2009 household travel survey. The base year for the validations was 2011. The latest validation of the highway models was completed in 2013, using approximately 3,300 traffic counts collected in 2011. The transit models were re-calibrated in 2013 based on data from the 2010-2011 on-board bus survey. The MAG truck model, volume delay functions, and external travel model were updated and recalibrated in 2012-2013 based on the 2011 NOKIA speed data, 2011 truck ATRI data, 2009 Transearch data, and 2008 External Travel Survey.

The MAG transportation models exhibit the following characteristics, which are consistent with the federal transportation conformity rule (Section 93.122(b)):

- The traffic volumes simulated by the MAG transportation models were validated in 2013 against approximately 3,300 traffic counts collected in 2011. This validation demonstrated a good statistical fit between actual and model-estimated daily traffic volumes, as measured by an overall percent root mean square error of 28.3 percent. Revised documentation of the transportation models, reflecting results of the 2013 recalibration, is currently under development.
- The population, households, and employment inputs to the travel demand models are based on the Arizona Department of Administration (ADOA)

population projections consistent with the 2010 U.S. Census. The official Maricopa County socioeconomic projections based on ADOA county projections were approved by the MAG Regional Council in June 2013. The Pinal County socioeconomic projections were approved by the Central Arizona Governments (CAG) Regional Council in June 2013. These projections were prepared using the AZ-SMART land use model system and UrbanSim.

- The population and employment projections used in the conformity analysis are consistent with the transportation system alternatives considered. In the MAG land use models, transportation system accessibility influences the allocation of population and employment to smaller geographic areas. The UrbanSim model was integrated into AZ-SMART and used to allocate county projections of households and employment to regional market areas based upon the pre-existing location of these activities, land consumption, and transportation system accessibility, expressed in terms of PM peak travel times. These congested travel times are derived from an appropriate capacity-restrained traffic assignment for each forecast year. The allocation of population and employment from market areas to land use parcels is accomplished with UrbanSim. UrbanSim uses transportation system accessibility measures, such as proximity to the closest highway, in determining the likelihood that a land use parcel will develop during a given forecast interval. AZ-SMART also aggregates population, households, and employment projections by land use parcel to the TAZ-level for input to the transportation models. Congested travel times output by the transportation models are “fed-back” into the land use models to ensure that there is consistency between the transportation system assumptions and the land use projections.
- The transportation models perform capacity-restrained traffic assignments. Restrained assignments are produced for the AM peak period, mid-day, PM peak period, and night time, with volumes and congestion estimated for each period.
- Speeds obtained from the capacity-restrained traffic assignments are “fed-back” in the travel demand modeling chain. The trip distribution, mode choice, and traffic assignment steps of the chain are executed until PM peak period trip tables and link volumes are in equilibrium (percent root mean square error of five percent or less). The travel impedances used in the mode choice model include travel times and costs associated with each of the following modes: auto-drivers, carpools (2 and 3+ persons), and transit, (i.e., shuttle bus, local bus, express bus, and light rail, commuter rail).
- The travel impedances used in the trip distribution and traffic assignment steps of the MAG travel demand modeling are a composite function of highway travel times and costs. The nested logit mode choice model is sensitive to highway and transit travel times, as well as pricing variables.

- As a result of the feedback loop in the MAG travel demand modeling process, the final peak and off-peak speeds are sensitive to the capacity-restrained volumes on each highway segment represented in the network. Data from the MAG 2011 commercial speed data set were used to ensure that the capacity-restrained speeds and delays output by the transportation models are consistent with empirical data. Figures 3 through 10 provide a comparison of observed and model-estimated speeds for the peak and off-peak periods. For both freeways and arterials, the TransCAD-estimated speeds are within nine percent of the observed speeds for all area types and the maximum difference in overall speeds is five miles per hour, but most are substantially lower. This indicates that the capacity-restrained speeds produced by the transportation models are in reasonable agreement with the most recently-collected empirical data.

**SOCIOECONOMIC PROJECTIONS**

Section 93.110 of the federal conformity rule requires that the population and employment projections used in the conformity analysis be the most recent estimates that have been officially approved by the Metropolitan Planning Organization (i.e., MAG for the Maricopa County nonattainment and maintenance areas). The 2014 conformity analysis is based on socioeconomic projections that were approved by the MAG Regional Council and Central Arizona Governments (CAG) in June 2013.

In accordance with the Arizona Governor’s Executive Order 2011-04, the population projections used for all State agency planning purposes were updated by the Arizona Department of Administration (ADOA) consistent with the 2010 U.S. Census. MAG then prepared socioeconomic projections by traffic analysis zone (TAZ), based on the ADOA county-level population projections. MAG allocated the projections for Maricopa County to TAZs using the AZ-SMART model system. The official Maricopa County socioeconomic projections based on ADOA county projections were approved by the MAG Regional Council in June 2013.

In addition, socioeconomic projections for Pinal County were prepared by MAG utilizing AZ-SMART and were approved by the Central Arizona Governments (CAG). The projections by Municipal Planning Area (MPA) for Pinal County were approved by the CAG Regional Council in June 2013 and the TAZ projections are based upon the approved MPA projections.

The TAZ population, households and employment projections take into account the transportation improvements contained in the conforming TIP (FY 2011-2015) and RTP (2010 Update) in effect at the time the projections were approved. For the 2014 MAG Conformity Analysis, the projections of population, households, and employment by TAZ were input to the MAG transportation models to estimate auto and transit trips, VMT, and congestion for each analysis year.

# TRAFFIC ESTIMATES

This section describes the development of the highway and transit networks that were used to perform the 2014 MAG Conformity Analysis for the FY 2014-2018 Transportation Improvement Program and 2035 MAG Regional Transportation Plan. A summary of the population, employment, and travel characteristics for the MAG transportation modeling area for each “build” scenario in the 2014 MAG Conformity Analysis is presented in Table 5. The vehicle miles of travel forecasts for each of the pollutant specific modeling areas for Maricopa and Pinal Counties are presented in Appendix C.

## Transportation Network Assumptions

Not all of the street and freeway projects included in the TIP qualify for inclusion in the highway network. Projects which call for study, design, right-of-way acquisition, or non-capacity improvements are not included in the networks. When these projects result in actual facility construction projects, the associated capacity changes are coded into the network, as appropriate. Since the networks define capacity in terms of the number of through traffic lanes, only construction projects that increase the lane-miles of through traffic are included. Generally, MAG highway networks include only the one-mile grid system of streets, plus freeways. This includes all streets classified as arterials, as well as some collectors.

Traffic on collectors and local streets not explicitly coded on the highway network are simulated in the models by use of abstract links called “centroid connectors”. These represent collectors, local streets and driveways which connect a neighborhood to a regionally significant roadway. Centroid connectors also include travel occurring on public and private unpaved roads and alleys.

## Highway Networks

The network used in the 2015, 2025 and 2035 no-build scenarios for the Pinal County nonattainment areas contains regionally significant highways open to traffic by December 31, 2012. In addition, the no-build network includes regionally significant projects in the Pinal County PM-10 nonattainment area, regardless of funding source, that meet one of the following criteria: are under construction, undergoing right of way acquisition, programmed in FY 2011 of the conforming MAG TIP, or have completed the National Environmental Policy Act (NEPA) process. These criteria comply with Section 93.119(h) of EPA conformity regulations.

The 2015, 2025 and 2035 networks used in the conformity budget analyses for the Maricopa nonattainment and maintenance areas and as the build scenarios for the Pinal County nonattainment areas assume implementation of all qualifying highway projects in the FY 2014-2018 MAG Transportation Improvement Program (TIP) and 2035 MAG Regional Transportation Plan (RTP), as well as other regionally significant projects to be implemented in the Pinal County area.

TABLE 5.  
TRAFFIC NETWORK COMPARISON FOR BUILD SCENARIOS EVALUATED FOR  
THE 2014 MAG CONFORMITY ANALYSIS

Year	Total Population <sup>a</sup> (thousands)	Total Employment <sup>a</sup> (thousands)	Average Weekday VMT <sup>b</sup> (millions)	Average PM Peak Period Speed <sup>c</sup>	Freeway Lane Miles <sup>d</sup>
2015	4,794	2,014	107.3	37.2	4,736
2025	5,916	2,650	136.0	36.4	5,286
2035	7,038	3,149	166.7	35.3	5,817

- <sup>a</sup> Population and employment estimates are for the 16,080 square mile transportation modeling area in Maricopa and Pinal Counties. Total population includes resident population in households and group quarters, transient population and seasonal population. Total employment includes number of workers in public, retail, office, industrial, work-at-home, construction, non-site based and other land use employees.
- <sup>b</sup> Vehicle miles of travel (VMT) is obtained from the summation of VMTs in the AM, Mid-Day, PM and Night Time from the “build” traffic assignments for the transportation modeling area.
- <sup>c</sup> Average speed on freeways, HOV lanes, expressways, arterials, ramps and collector-distributor roads in the transportation modeling area during the P.M. peak period.
- <sup>d</sup> Freeways, expressways, ramps, HOV lanes, and collector-distributor roads are included in the lane miles reported for freeways in the transportation modeling area.



The 2015 network includes highway projects in the TIP scheduled to be open to traffic by December 31, 2015. The 2025 network includes highway projects in the RTP through the year 2025, as well as projects in the TIP. The 2035 assumes implementation of all highway projects in the RTP, as well as all qualifying highway projects in the TIP. It is important to note that the “build” transportation modeling networks include the regionally significant highway projects in the Maricopa County nonattainment and maintenance areas, as well as the Pinal County nonattainment areas.

Coding Conventions

Specific coding conventions or criteria are applied to determine whether a project qualifies for highway network coding. This results in coding of all arterial streets and some collectors. The coding conventions are:

- (1) Capacity-related projects on existing links or extensions of existing links on the base highway network are coded in future networks. This includes projects on freeways, the mile-street grid, and half-mile streets already on the base network.
- (2) Capacity-related projects which are not on links or extensions of links in the base network are coded, if the street is considered a logical part of the one-mile street grid system. If the project is on a half-mile street, it is considered for inclusion on a case-by-case basis. The key factors considered in making this assessment include:
  - the density of current and future development and travel in the area of the project;
  - whether the change may be accommodated without increasing the number of zones; and
  - whether the change is consistent with standard network coding practices.

Transit Networks and Operations

Transit networks are input to the mode choice step of the MAG transportation models to determine the number of person trips made by transit, which in turn, removes vehicle trips from the highways. For all analysis years, the bus and rail networks reflect the latest planning information available at the time the conformity analysis began.

Maricopa Nonattainment and Maintenance Areas

The most recent information on transit ridership and operating policies is provided by Valley Metro/Regional Public Transportation Authority (Valley Metro/RPTA, 2012). Information on current transit fares is provided in Table 6 (Valley Metro/RPTA, 2013b).

TABLE 6.  
SUMMARY OF TRANSIT FARES FOR  
VALLEY METRO SERVICE

Valley Metro Service	Fares
Local Bus/LINK/Light Rail	
1-Ride	\$2.00
All Day Pass	\$4.00
All Day Pass (purchased on-board)	\$6.00
7-Day	\$20.00
15-Day	\$33.00
31-Day	\$64.00
Semester Pass	\$195.00
Express/Rapid Bus	
1-Ride	\$3.25
All Day Pass	\$6.50
All Day Pass (purchased on-board)	\$8.50
31-Day	\$104.00

Note: Reduced fares are available to persons with disabilities, seniors age 65 and older, Medicare card holders, and youths ages 6 through 18. Youths age 5 and under ride for free when accompanied by a fare-paying caretaker or guardian age 18 or older (Valley Metro/RPTA, 2013b).

The information on fares and transit operations in this section of the conformity analysis is provided to address federal transportation conformity requirements.

Current Fixed Route Service

Valley Metro fixed route scheduled service is provided to an area of approximately 266 square miles within the MAG region by Avondale, Chandler, Gilbert, Glendale, Goodyear, Guadalupe, Litchfield Park, Mesa, Peoria, Phoenix, RPTA, Scottsdale, Tempe, Tolleson, and the Sun City area of Maricopa County. In addition, the METRO 20-mile light rail system connects the cities of Phoenix, Tempe, and Mesa. According to Valley Metro, there were 57 local routes providing fixed route service, 15 express bus routes, one limited stop route, five RAPID commuter express routes, and circulator routes located in Avondale, Glendale, Mesa, Phoenix, Scottsdale, and Tempe. Based on the FY 2012 Transit Performance Report for the period ending June 30, 2012, there were 57,489,998 fixed route boardings and 13,553,490 light rail boardings. In FY 2012, there were 73,045,336 system total boardings including fixed route, light rail, paratransit (856,347 boardings) and vanpools (1,145,501 boardings), an increase of 5.16 percent from FY 2011.

Other Existing Transit Services

Eight paratransit systems operate within Maricopa County, including East Valley Dial-A-Ride, Glendale Dial-A-Ride, Mobility Services, Peoria Dial-A-Ride, Phoenix Dial-A-Ride, Ridechoice, Scottsdale Taxi, and Surprise Dial-A-Ride. These services generally operate within the area with fixed route bus service.

The Maricopa County Special Transportation Services department operates prescheduled service. Transportation is provided for eligible persons, which includes seniors, persons with disabilities, and low income individuals, for specific trip purposes in portions of Maricopa County unserved by other systems. This service provides public transportation to individuals in outlying areas of the region. Vanpool service operated by Valley Metro is discussed in Chapter 5, which reviews transportation control measures that have been implemented in the region.

In addition, 17 shuttle and circulator transit services have been implemented across the region with different operating schedules, including: Tempe Free Local Area Shuttle (FLASH) and Tempe Orbit serving various neighborhoods in the city including the Arizona State University campus area; Phoenix Business Circulator 19<sup>th</sup> Avenue Connector, Phoenix Downtown Area Shuttle (DASH) serving the Downtown Phoenix-Copper Square area; Ahwatukee Local Explorer (ALEX) serving Ahwatukee and west Chandler areas; Phoenix Maryvale Area Ride for You (MARY) serving the Maryvale area of Phoenix; Sunnyslope Neighborhood Circulator (SMART) serving the Sunnyslope area of Phoenix; Glendale Urban Shuttle (GUS) providing transit in the Glendale Central Corridor; Mesa Downtown BUZZ, and the Miller Road Trolley, Downtown Trolley, and Neighborhood Trolley serving areas of Scottsdale.

Recent Transit Service Changes

Valley Metro/Regional Public Transportation Authority reports a number of transit service changes in FY 2012. The changes are as follows:

- Services reductions on local routes 40, 96, and 108;
- Route eliminations on local routes 76 and 131 and on rural route 660 Wickenburg;
- New routes included the 563 Buckeye Express, circulator routes on Scottsdale Miller Road Trolley and Avondale ZOOM, and the local route 251 on 51<sup>st</sup> Avenue.

**Pinal Nonattainment Areas**

The City of Coolidge operates the Cotton Express that provides fixed route bus service and curb-to-curb paratransit service in Coolidge. The Cotton Express is a local circulator that provides bus service between neighborhoods and business, schools, and government offices. Fares range from \$1.25 for one-way, \$2.50 for daily, and \$45.00 for monthly fare for age 12 to adult.

The City of Coolidge also operates the Central Arizona Regional Transit (CART) bus system that provides regional transportation services in central Pinal County including Florence, Coolidge, and Casa Grande. Fares range from \$2.00 for one-way, \$4.00 for daily, \$80.00 for monthly, and \$120.00 for local and regional month fare for ages 13 to 54. Table 7 provides a summary of the transit fares for the Cotton Express and the Central Arizona Regional Transit bus system.

The MAG transportation models and the highway and transit networks described above are utilized to estimate daily vehicle travel and transit ridership in the MAG transportation modeling area. The primary input to the air quality modeling process is transportation model estimates of daily vehicle traffic and speeds on each highway link, along with the attendant link lengths and coordinate data, for each nonattainment and maintenance area. A detailed description of the MAG emissions models is provided in Chapter 4.

TABLE 7.  
SUMMARY OF TRANSIT FARES FOR  
COTTON EXPRESS AND CENTRAL ARIZONA REGIONAL TRANSIT SERVICES

Fixed Route Transit Services in Pinal County	Fares
<b>Cotton Express</b>	
One-way	\$1.25
Daily	\$2.50
7-Day	\$17.50
Monthly	\$45.00
<b>Central Arizona Regional Transit</b>	
One-way	\$2.00
Daily	\$4.00
Monthly	\$80.00
Local & Regional Monthly	\$120.00

Note: For the Cotton Express, reduced fares are available to those age 3 to 11; age 2 and younger ride free. In addition, paratransit fares are available for adults over 55. For the Central Arizona Regional Transit service, lower fares apply to children 12 and under or students, and lower month as well as lower local and regional month fares apply to senior/disabled 55 and up.

4 AIR QUALITY MODELING

For the 2014 MAG Conformity Analysis, the models which have been used to estimate carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NOx), and particulates (PM-10 and PM-2.5) are MOVES2010b, for motor vehicle emission factors; AP-42, for emission factors from reentrained dust produced by vehicles traveling on paved and unpaved roads; and MOVESLink, for the calculation of spatially and temporally allocated onroad vehicle emissions using the emission factors from the above models and travel and speed data from the TransCAD transportation model.

In December 2009, EPA issued policy guidance on the use of MOVES2010 for transportation conformity, indicating that there would be a two-year grace period before MOVES2010 would be required for new conformity determinations (EPA, 2009). In the March 2, 2010 *Federal Register*, EPA announced the release of MOVES2010, which triggered the start of a two-year grace period which ended on March 2, 2012 (EPA, 2010). In March of 2012, EPA extended the grace period for one year (EPA, 2012a). Conformity analyses that begin after March 2, 2013 are required to use MOVES2010 for new transportation plan and TIP conformity determinations and regional emissions analyses. Since the 2014 MAG Conformity Analysis began after March 2, 2013, MOVES2010b was used to estimate motor vehicle emission factors.

In the 2014 MAG Conformity Analysis, modeling assumptions from the latest air quality plans submitted to EPA have been used to perform the 2014 MAG Conformity Analysis. The latest planning assumptions have been substituted for modeling inputs used in these air quality plans, as appropriate. Regional emissions have been estimated for the conformity analysis years of 2015, 2025, and 2035. The conformity rule requirements for the selection of the analysis years are summarized in Chapter 1.

MAG conducted interagency consultation in August 2013 on the transportation conformity processes, including the models, associated methods, and assumptions to be applied in the 2014 MAG Conformity Analysis. Appendix B contains copies of the consultation correspondence.

Air quality modeling for the 2014 MAG Conformity Analysis was performed for two different sets of nonattainment and maintenance areas: the Maricopa County nonattainment and maintenance areas and the Pinal County nonattainment areas. The conformity analysis for the Maricopa County areas involves the comparison of 2015, 2025 and 2035 emissions with EPA-approved budgets for the Carbon Monoxide Maintenance Area and the Ozone and PM-10 Nonattainment Areas. The conformity analysis for the Pinal County areas



involves a comparison of build and no-build emissions in 2015, 2025 and 2035 for the West Pinal PM-10 Nonattainment Area and West Central Pinal PM-2.5 Nonattainment Area. The air quality modeling assumptions for the Maricopa and Pinal areas are described separately in this chapter.

### MARICOPA COUNTY NONATTAINMENT AND MAINTENANCE AREAS

For the Maricopa County nonattainment and maintenance areas, air quality modeling inputs not dependent on the MAG Transportation Improvement Program or Regional Transportation Plan or the latest planning assumptions were derived from the Carbon Monoxide Redesignation Request and Maintenance Plan (MAG, 2013) for CO; the Eight-Hour Ozone Redesignation Request and Maintenance Plan (MAG, 2009) for VOC and NOx; and the MAG 2012 Five Percent Plan (MAG, 2012) for PM-10. The modeling efforts have been kept as consistent as possible among the pollutants modeled. Some differences in the modeling assumptions are necessary due to the different time periods modeled for different pollutants (e.g., temperatures, fuel properties).

On January 18, 2001, the U.S. DOT issued guidance developed jointly with EPA to provide additional clarification concerning the use of latest planning assumptions in conformity determinations. In December 2008, EPA published revisions to the 2001 guidance entitled “Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations” (EPA, 2008b). The guidance indicates that periodic inventory updates may be used as a source for recent modeling data.

The most recent periodic inventory available for carbon monoxide is the 2008 Periodic Emissions Inventory for Carbon Monoxide for the Maricopa County, Arizona, Nonattainment Area (MCAQD, 2012a). This inventory represents an annual average day rather than the episode days used in the CO attainment and maintenance plans. Since the conformity budgets were established using episode days, it is more appropriate to use the 2013 CO Maintenance Plan modeling assumptions in the conformity analysis.

The most recent periodic inventory available for ozone is the 2008 Periodic Emissions Inventory for Ozone Precursors for the Maricopa County, Arizona, Nonattainment Area (MCAQD, 2012b). The periodic inventory provides VOC and NOx emissions for the eight-hour ozone nonattainment area. The periodic inventory represents an annual average day rather than the episode days used in the 2009 Eight-Hour Ozone Maintenance Plan. Since the conformity budgets were established using these episode days, it is more appropriate to use the 2009 Eight-Hour Ozone Maintenance Plan modeling assumptions in the conformity analysis.

The most recent periodic inventory available for PM-10 is the Revised 2008 Periodic Emission Inventory for PM-10 for the Maricopa County, Arizona, Nonattainment Area (MCAQD, 2011). This inventory was used in developing the 2008 base case emissions

for the MAG 2012 Five Percent Plan for PM-10. Assumptions from the MAG 2012 Five Percent Plan that were used in estimating PM-10 emissions for the MAG 2014 Conformity Analysis are documented in the PM-10 section below.

The MOVES2010b and MOVESLink models and input assumptions used in estimating onroad vehicle emissions for the Maricopa County maintenance and nonattainment areas are described in the next two sections.

#### MOVES2010b

MOVES2010b is a model developed by EPA for the purpose of estimating motor vehicle emission factors for specified vehicle fleet, fuel, temperature, and speed conditions. This model is used to estimate carbon monoxide, ozone precursor, and particulate (exhaust, tire wear, and brake wear) motor vehicle emission factors for the Maricopa County nonattainment and maintenance areas.

The MOVES2010b model generates estimates of motor vehicle emission factors in units of grams of pollutant emitted per vehicle mile of travel. MOVES2010b uses a locally-derived motor vehicle registration distribution (by model year) of 30 years. For the 2014 MAG Conformity Analysis, July 2013 vehicle registrations for Maricopa County, obtained from the Arizona Department of Transportation, were used as input to MOVES2010b. MOVES2010b also incorporates fleet turnover to newer, cleaner vehicles over time, which counters the increase in regional emissions that occur with growth in vehicle miles of travel. Other factors, such as fuel quality and vehicle speed, are also important.

Inspection and maintenance (I/M) program benefits were assumed in the modeling. The I/M runs reflect the provisions of the enhanced inspection program which was implemented in January 1995 and the measure “Phased-in I/M Cutpoints” (see Table 4), implemented in January 2000. The cutpoint values used are the MOVES2010b default Phase 2 cutpoints. For the three horizon years modeled in this analysis, it was assumed that the onboard diagnostic (OBD) test would be used for the model year 1996 and newer vehicles with an exemption for all vehicles of the current plus four model years.

MOVES2010b runs were weighted to account for vehicles driving in the modeling area that do not participate in the I/M program. Therefore, each modeled scenario required runs with and without the I/M program benefits. For this analysis, it was assumed that 91.6 percent of eligible onroad vehicles participate in the I/M program. This fraction reflects an increase in the participation in the I/M program due to implementation of the measure, “Tougher Registration Enforcement” (see Table 4). For all scenarios modeled for this analysis, the inputs for each run included oxygenated gasoline with an assumed market share of 100 percent ethanol. The gasoline volatility and average oxygen content of the ethanol blend gasoline were based on fuel inspection data provided to MAG by the Arizona Department of Weights and Measures.

The MOVES2010b runs that reflected the I/M program assumed vehicle waiver rates of 1.3 percent or 1.0 percent, dependent upon model year. These fractions reflected the lower waiver rates resulting from the implementation of the measure, “One Time I/M Waiver” (see Table 4). The output from the MOVES2010b model includes emission factors by hour, roadway facility type, pollutant, and area type.

The MOVES2010b input files shown in Appendix P were used to calculate carbon monoxide emission factors for the conformity analysis year of 2015. This represents one example of the MOVES2010b input files which vary by pollutant and analysis year.

MOVESLink

MOVESLink software processes link data files output by the MAG transportation model, TransCAD. The program calculates emissions for roadway links in the MAG highway networks. Traffic volumes for four time periods (AM peak, mid-day, PM peak, and night time) for each link are converted into hourly volumes based upon traffic count data collected in Maricopa County in 2007. Hourly emission factors are developed by running MOVES2010b for each facility type, area type, and vehicle class using link speeds by time of day.

The transportation models are designed to model average weekday traffic patterns, which typically do not represent conditions on the specific episode day used to demonstrate attainment or maintenance and establish the conformity budget. As a result, MOVESLink applies day of the week and month of the year conversion factors that are consistent with the MAG 2013 Maintenance Plan for CO and the 2009 Eight-Hour Ozone Redesignation Request and Maintenance Plan for VOC and NOx. PM-10 emissions are assumed to represent an annual average day.

The transportation model inputs to MOVESLink consist of database formatted files that contain link-specific data and a node coordinate definitions file. MOVESLink also requires as input:

- A table containing adjustment factors used to allocate traffic volumes for four time periods to hourly traffic volumes.
- A matrix of emission factors for a range of hours, facility types, area types, and vehicle classes (generated by the MOVES model).
- The ratio of vehicles participating in the I/M program.
- The year being modeled.

The next three sections discuss the air quality modeling assumptions for each pollutant for which conformity in the Maricopa County maintenance and nonattainment areas has been performed. These pollutants are carbon monoxide, ozone (VOC and NOx) and PM-10.

Carbon Monoxide

For the 2014 MAG Conformity Analysis for the Maricopa area, the applicable test for carbon monoxide consists of the emissions budget test, as discussed in Chapter 1. The 2003 Carbon Monoxide Maintenance Plan includes a 2006 budget of 699.7 metric tons per day and a 2015 budget of 662.9 metric tons per day. These budgets represent the motor vehicle emissions for carbon monoxide based on episode day conditions. On September 29, 2003, EPA found the motor vehicle emissions budgets contained in the 2003 Carbon Monoxide Maintenance Plan to be adequate for conformity purposes, effective October 14, 2003. On March 9, 2005, EPA published the final rule in the *Federal Register* approving the Carbon Monoxide Maintenance Plan, including the conformity budgets, effective April 8, 2005. Since the first conformity analysis year in the 2014 MAG Conformity Analysis is 2015, the CO emissions estimated for 2015, 2025 and 2035 are compared with the EPA-approved 2015 CO budget of 662.9 metric tons per day.

MAG submitted a second CO maintenance plan to EPA in March 2013 that establishes a 2025 conformity budget of 559.4 metric tons per day (MAG, 2013). If EPA takes action to find this budget to be adequate or approves the 2013 CO Maintenance Plan before the 2014 MAG Conformity Analysis is approved by the U.S. Department of Transportation (DOT), conformity with the new 2025 budget would be required. To ensure that this conformity analysis is approvable by DOT, Table 12 shows that the 2025 and 2035 CO emissions are also less than the 2025 budget proposed in the 2013 CO Maintenance Plan.

Vehicle registrations from July 2013, obtained from the Arizona Department of Transportation, were used as input to MOVES2010b for CO. Regional onroad emissions were modeled using the TransCAD (traffic), MOVES2010b (emission factors), and MOVESLink (emissions allocation) models.

The overall modeling approach used in this analysis is consistent with that used to develop the 2025 CO emissions budget in the 2013 CO Maintenance Plan. The MOVES2010b model was used to estimate carbon monoxide emission factors. Traffic data (vehicle miles of travel and speeds by link) were generated by the TransCAD transportation model. The MOVESLink program was used to derive VMT by link for the CO maintenance area from the TransCAD transportation model output and calculate emissions using MOVES2010b emission factors and the traffic assignment data. Committed control measures from the 2003 CO Maintenance Plan were included in the conformity analysis, as appropriate. These measures are listed in Table 4 and detailed descriptions can be found in the 2003 CO Maintenance Plan (MAG, 2003).

The CO outputs from MOVESLink include an hourly, gridded onroad mobile source emissions file and several summary files containing emissions and traffic data in the maintenance area. The CO analysis reflects a Friday in December, consistent with the analysis used to set the CO budgets.

Eight-Hour Ozone

For the 2014 MAG Conformity Analysis, the applicable test for eight-hour ozone consists of the emissions budget tests for volatile organic compounds (VOC) and nitrogen oxides (NOx), as discussed in Chapter 1. The Eight-Hour Ozone Plan for the Maricopa Nonattainment Area (MAG, 2007a) establishes conformity budgets for VOC and NOx in the modeled attainment year of 2008. The 2008 emission budgets for the eight-hour ozone nonattainment area are 67.9 metric tons per day for VOC and 138.2 metric tons per day for NOx. EPA published a *Federal Register* notice finding these budgets to be adequate, effective November 9, 2007. On June 13, 2012, EPA approved the MAG 2007 Eight-Hour Ozone Plan, including the emissions budgets, effective July 13, 2012.

MAG also submitted an Eight-Hour Ozone Maintenance Plan to EPA in March 2009 (MAG, 2009). The Maintenance plan establishes 2025 budgets for VOC (43.8 metric tons per day) and NOx (101.8 metric tons per day). If EPA takes action to find these budgets to be adequate or approves the 2009 Eight-Hour Ozone Maintenance Plan before the 2014 MAG Conformity Analysis is approved by the U.S. DOT, conformity with the new 2025 budget would be required. To ensure that this conformity analysis is approvable, Table 12 shows that the 2025 and 2035 VOC and NOx emissions are also less than the 2025 budget proposed in the 2009 Eight-Hour Ozone Maintenance Plan.

EPA published the final rule designating boundaries for the 2008 eight-hour ozone standard on April 30, 2012. This rule expanded the boundary of the Maricopa eight-hour ozone nonattainment area by approximately 138 square miles. The VOC and NOx emissions calculated for all conformity analysis years represent the larger 2008 eight-hour ozone area.

The MOVES2010b model was used to estimate VOC and NOx emission factors. Traffic data (vehicle miles of travel and speeds by link) were generated by the TransCAD transportation model. The MOVESLink program was used to derive VMT by link for the eight-hour ozone nonattainment area from the TransCAD transportation model output and calculate emissions using MOVES2010b emission factors and the traffic assignment data. Committed control measures were included in the conformity analysis, as appropriate. These measures are listed in Table 4 and detailed descriptions can be found in the 2007 Eight-Hour Ozone Plan.

Vehicle registrations from July 2013 obtained from the Arizona Department of Transportation were used as input to MOVES2010b. Temperatures and various adjustment factors from the 2009 Eight-Hour Ozone Maintenance Plan were also used for consistency. The MOVES2010b runs performed for the ozone analysis were very similar to those performed for the CO analysis, except that conditions were changed to reflect the summer of the given year rather than winter. Differences included temperature, fuel data, and the season modeled.

The outputs from the MOVES2010b model include emission factors specific to hour of the day, area type, facility type, and domain temperatures. VOC and NOx emissions were also

output by MOVES2010b separately depending upon the source type, such as exhaust running, evaporative resting, and crankcase evaporative emissions. These emission factors were used by the MOVESLink program to estimate the motor vehicle emissions for the eight-hour ozone nonattainment area. The VOC and NOx analysis reflects a Thursday in June, consistent with the analysis used to set the 2007 Eight-Hour Ozone Plan budgets.

PM-10

For the 2014 MAG Conformity Analysis, the applicable conformity test for PM-10 is the emissions budget test, as discussed in Chapter 1. The Revised MAG 1999 Serious Area PM-10 Plan established a 2006 motor vehicle emissions budget of 59.7 metric tons per day for the PM-10 nonattainment area (MAG, 2000). EPA approved the Revised MAG 1999 Serious Area PM-10 Plan, effective August 26, 2002. The motor vehicle emissions budget includes PM-10 emissions from exhaust, tire wear, brake wear, unpaved roads, paved roads and road construction.

MAG submitted a 2012 Five Percent Plan for PM-10 to EPA in May 2012 (MAG, 2012). The Five Percent Plan establishes a 2012 PM-10 budget of 54.9 metric tons per day for the PM-10 nonattainment area. On December 5, 2013, EPA found the PM-10 budget in the MAG 2012 Five Percent Plan to be adequate for transportation conformity purposes, effective December 20, 2013. Therefore, Table 12 shows that the 2015, 2025, and 2035 PM-10 emissions are less than this new conformity budget.

July 2013 vehicle registrations obtained from the Arizona Department of Transportation were used as input to MOVES2010b for PM-10. MOVES2010b and MOVESLink were applied to estimate PM-10 emissions from vehicle exhaust, tire wear, and brake wear. AP-42 equations were applied to estimate PM-10 emissions from vehicles traveling on paved and unpaved roads. In addition, PM-10 emissions from road construction were calculated for each analysis year.

The assumptions used in calculating PM-10 emissions from these sources are described in the subsections that follow. The final subsection discusses the emission reductions that have been assumed for the Maricopa County PM-10 nonattainment area in the 2014 MAG Conformity Analysis.

**Exhaust, Tire Wear and Brake Wear**

The MOVES2010b model was used to estimate PM-10 emission factors from exhaust, tire wear, and brake wear. Traffic data (vehicle miles traveled and speeds by link) were generated by the TransCAD transportation model. GIS was used to derive VMT by link for the PM-10 nonattainment area. The MOVESLink model was used to calculate emissions for the PM-10 nonattainment area using MOVES2010b emission factors and the traffic data.

The MOVESLink system processes emissions for the PM-10 nonattainment area by combining the link and node data (i.e., volumes, speeds, link locations, facility type, area



type) from the TransCAD transportation model with the PM-10 emission factors (specific to facility type, hour, etc.) generated by the MOVES2010b model. Other inputs to MOVESLink include the ratios for weighting the I/M and non-I/M emission factors and optional flags to apply control measure effects. The PM-10 analysis reflects an annual average day, consistent with the analysis performed to establish the budget in the Revised MAG 1999 Serious Area PM-10 Plan.

On May 19, 2004, EPA issued a *Federal Register* notice requiring the use of AP-42 in SIPs and conformity determinations that start on or after the two-year grace period of May 19, 2006 (EPA, 2004c). The EPA AP-42 equations were used to estimate PM-10 emissions due to reentrained dust from unpaved and paved roads.

PM-10 emission factors for reentrained dust from vehicles traveling on unpaved and paved roads in the Maricopa County PM-10 nonattainment area are calculated using the latest equations found in Sections 13.2.2 and 13.2.1.3, respectively, of AP-42, EPA Compilation of Air Pollutant Emission Factors. The AP-42 equation for paved roads was revised by EPA in January 2011.

The AP-42 equations for unpaved and paved roads are used to estimate PM-10 emission factors in grams per vehicle miles of travel (VMT). These emission factors are multiplied by unpaved and paved road VMT in the Maricopa County PM-10 nonattainment area to estimate uncontrolled PM-10 emissions from unpaved and paved roads. The assumptions used to estimate AP-42 emission factors and VMT for unpaved and paved roads are described in the next two sections.

**Unpaved Roads**

The AP-42 equation that calculates PM-10 emission factors for unpaved road fugitive dust requires as input the road surface material silt content, road surface moisture content, average vehicle speeds, and the annual number of wet days (with at least 0.01 inch of precipitation). For unpaved roads in the Maricopa County PM-10 nonattainment area, the silt content is 11.9 percent, the moisture content is 0.5 percent, and the average vehicle speeds are 25 mph for public unpaved roads, 20 mph for private unpaved roads, and 10 mph for unpaved alleys. These inputs to the AP-42 equations for unpaved roads are consistent with the assumptions used in the MAG 2012 Five Percent Plan for PM-10 (MAG, 2012).

During the period 2008-2012, there was an annual average of 32 days with at least 0.01 inch of precipitation in the Maricopa County area. This annual number of wet days, derived from National Weather Service data collected at Sky Harbor Airport, is also input to the AP-42 equation to calculate unpaved road emission factors.

The AP-42 emission factors for unpaved roads are multiplied by the VMT on public and private unpaved roads and alleys in the Maricopa County PM-10 nonattainment area. The vehicle miles of travel for public unpaved roads are derived from the 2009 MAG Unpaved

Road Inventory (URI) (MAG, 2010). According to the URI, there were 613.4 miles of public unpaved roads in the PM-10 nonattainment area in 2009. MAG utilized 2009 traffic counts on unpaved roads, supplemented by Geographic Information Systems (GIS) image recognition techniques, to estimate the daily VMT on public unpaved roads in 2009.

In February 2011, MAG conducted additional traffic counts on a random sample of unpaved roads and alleys in the PM-10 nonattainment area. MAG also conducted a comprehensive inventory of private unpaved roads in the PM-10 nonattainment area that was completed in September 2011.

The 2011 inventory indicated that there were 927.3 miles of private unpaved roads in the PM-10 nonattainment area. Based on updated information received in August 2012, the private unpaved road inventory was increased to 974.6 miles. The 2011 inventory indicated that 28 percent of the private unpaved roads were stabilized. In addition, the 2011 traffic counts indicated that 26 vehicles travel on private unpaved roads on an average weekday. This value is multiplied by 0.93 to convert to annual average daily traffic (AADT).

Due to the economic recession's dampening effect on construction activity, private unpaved road VMT is assumed to remain constant between 2011 and 2013. Using historical data on the growth of private unpaved roads between 2002 and 2013 and projected housing growth rates between 2010 and 2040, MAG has estimated that the annual increase in new private unpaved road miles will be 0.9 percent per year. After 2013, the 2014 MAG Conformity Analysis assumes that the recession has ended and private unpaved road mileage is increased by 0.9 percent per year.

MAG also used GIS to estimate that there were 650 miles of unpaved alleys in the PM-10 nonattainment area in 2009. The VMT on unpaved alleys is obtained by multiplying the miles of unpaved alleys by the average daily traffic. The average daily traffic for unpaved alleys, obtained from 2011 alley traffic counts, is four vehicles per day, which is used to estimate uncontrolled emissions (i.e., before applying reductions attributable to alley paving projects). The VMT on unpaved alleys is held constant for all conformity analysis years.

The VMT on public unpaved roads is also held constant for all conformity analysis years to estimate uncontrolled emissions (i.e., before applying reductions attributable to paving projects). The PM-10 emissions produced by public unpaved roads with 150 ADT or more is reduced by 50 percent to reflect the Maricopa County Rule 310.01 requirement that these roads needed to be paved or stabilized by June 10, 2004. It is assumed that these high volume dirt roads are being stabilized with dust suppressants that have a control efficiency of 50 percent.

The AP-42 equation, input assumptions, and resulting PM-10 emission factors for unpaved public roads, private roads and alleys are documented in Appendix R. Appendix R also identifies the VMTs and total uncontrolled emissions attributable to unpaved roads in the Maricopa County PM-10 nonattainment area.

**Paved Roads**

The AP-42 equation that calculates PM-10 emission factors for paved road fugitive dust requires as input the road surface silt loading, the average weight of vehicles traveling on paved roads, and the annual number of wet days (with at least 0.01 inch of precipitation). For the silt loadings, paved roads are split into three classes: freeways, with a silt loading of 0.02 grams per square meter; high-traffic arterials (non-freeways carrying 10,000 vehicles or more per average weekday), with a silt loading of 0.067 grams per square meter; and low-traffic arterials (non-freeways carrying less than 10,000 vehicle per average weekday), with a silt loading of 0.23 grams per square meter. These silt loadings are consistent with the MAG 2012 Five Percent Plan for PM-10.

Since the silt loadings are stratified by road type, vehicle weights are estimated separately for freeways, high-traffic arterials and low-traffic arterials. The average vehicle weights for freeways (3.71 tons) and arterials (2.83 tons) were calculated using 2013 vehicle registrations for Maricopa County; VMT for medium and heavy duty trucks and all vehicle types in the PM-10 nonattainment area, derived from a 2011 traffic assignment, and an average vehicle weight of 3.18 tons (EPA default value) for all road types.

During the period 2008-2012, there were an average of 32 days with at least 0.01 inch of precipitation in Maricopa County. This annual number of wet days, derived from National Weather Service data collected at Sky Harbor Airport, is also input to the AP-42 equation to calculate paved road emission factors.

The AP-42 equation for paved roads uses the assumptions above to estimate PM-10 emission factors in grams per vehicle mile of travel (VMT). The AP-42 emission factors for paved roads are multiplied by the VMT for freeways, high-traffic arterials, and low-traffic arterials to calculate uncontrolled paved road emissions. The VMTs for freeways and high and low traffic arterials in the Maricopa County PM-10 nonattainment area are derived from the MAG TransCAD transportation model for each conformity analysis year.

The AP-42 equation, input assumptions, and resulting PM-10 emission factors for freeways, high-traffic arterials, and low-traffic arterials are documented in Appendix R. Appendix R also identifies the VMTs and total uncontrolled emissions attributable to paved roads in the Maricopa County PM-10 nonattainment area.

**Road Construction**

As required by Section 93.122(e) of the federal transportation conformity rule, PM-10 emissions from road construction were estimated for each conformity analysis year. Road construction emissions were estimated using the methodology in the MAG 2012 Five Percent Plan, with the exception of an updated rule effectiveness rate. The methodology for calculating rule effectiveness, developed by the Maricopa County Air Quality Department (MCAQD) in coordination with EPA Region IX staff, is documented in Appendix 3 of the 2008 PM-10 Periodic Emissions Inventory (MCAQD, 2011). MCAQD reported to MAG in

May 2013 that the rule effectiveness for Rule 310 had declined from 94 to 93 percent between 2011 and 2012. The 2012 road construction emissions in the Maricopa PM-10 nonattainment area, estimated using a 93 percent rule effectiveness rate, are held constant for all conformity analysis years.

**Emission Reductions**

The 2014 MAG Conformity Analysis for the Maricopa County PM-10 nonattainment area includes credit for measures and projects that reduce PM-10 emissions. The projects that reduce unpaved and paved road emissions are described below. The PM-10 emission reductions associated with these projects are shown in Appendix R.

**PM-10 Certified Street Sweepers** - In the 2014 MAG Conformity Analysis, emission reduction credit is taken for PM-10 certified street sweepers purchased with MAG Congestion Mitigation and Air Quality Improvement (CMAQ) funds between January 1, 2001 and December 31, 2009. During this nine-year period, MAG member agencies purchased 123 PM-10 certified sweepers to replace conventional sweepers, increase the frequency of sweeping, and expand the area swept in the PM-10 nonattainment area. An inventory conducted by MAG for the period ending June 30, 2010 indicated that 23 of these sweepers were no longer in service as of December 31, 2009. The methodology used in calculating the benefit of these 100 sweepers in 2010 is consistent with that used in the MAG 2012 Five Percent Plan for PM-10. In conformity years after 2010, the benefit of PM-10 certified sweepers is increased based on the growth in VMT on non-freeways located in the PM-10 nonattainment area.

In addition, an ADOT contract, effective February 20, 2010, identifies the specific freeways, ramps and frontage roads in the PM-10 nonattainment area that are being swept with PM-10 certified sweepers, as well as the required sweeping frequency. The emission reduction credit for sweeping the roads identified in the ADOT contract was calculated for 2012. For all conformity analysis years after 2012, the credit is increased proportionally to the growth in VMT on the roads in the PM-10 nonattainment area that are being swept by the ADOT contractor. The VMT on these roads is derived from the TransCAD model output for each conformity analysis year.

**Unpaved Road and Alley Projects** - For the 2014 MAG Conformity Analysis, reduction credit was also taken for projects completed between January 1, 2008 and December 31, 2012 that paved or reduced speed limits on unpaved roads and alleys in the PM-10 nonattainment area. The emission reductions for projects completed by December 31, 2012 are consistent with those used in the MAG 2012 Five Percent Plan for PM-10. Credit for these projects is applied to all conformity analysis years.

In addition, the 2014 MAG Conformity Analysis takes credit for paving projects programmed in the MAG Transportation Improvement Program (TIP). Credit for TIP projects that pave unpaved roads and alleys prior to FY 2013 is taken in 2015; credit for TIP paving projects programmed in FY 2013-2018 is taken in the 2025 and 2035 conformity analysis years.

Chapter 9 of the 2035 MAG Regional Transportation Plan (RTP) indicates that ten miles of unpaved roads will be paved each year in the PM-10 nonattainment area. The 2014 MAG Conformity Analysis assumes that ten miles will be paved each year beginning in 2019 and continuing through 2035, the last year of the RTP.

**Paved Road Projects** - For the 2014 MAG Conformity Analysis, reduction credit was taken for projects completed between January 1, 2008 and December 31, 2012 that paved unpaved shoulders and overlaid roads with rubberized asphalt in the PM-10 nonattainment area. The emission reductions for projects completed by December 31, 2012 are consistent with those used in the MAG 2012 Five Percent Plan for PM-10. Credit for these projects is applied to all conformity analysis years.

**PINAL COUNTY PM-10 AND PM-2.5 NONATTAINMENT AREAS**

The air quality modeling assumptions for the three pollutants for which conformity in the Pinal County nonattainment areas has been performed are discussed below. These pollutants are PM-10, PM-2.5 and NOx.

For the 2014 MAG Conformity Analysis, the applicable conformity tests for PM-10 in the Pinal PM-10 nonattainment area and PM-2.5 and NOx in the Pinal PM-2.5 nonattainment area are the build/no-build analyses for 2015, 2025 and 2035, as discussed in Chapter 1. Pinal County vehicle registrations for July 2013, obtained from the Arizona Department of Transportation, were used as input to MOVES2010b for all three pollutants. MOVES2010 and MOVESLink were applied to estimate vehicle emissions for PM-10, PM-2.5 and NOx. AP-42 equations were applied to estimate PM-10 emission factors from vehicles traveling on paved and unpaved roads in the Pinal PM-10 nonattainment area.

Paved and unpaved road emissions were not estimated for the Pinal PM-2.5 nonattainment area, because Section 93.119(f)(8) of the EPA Transportation Conformity Regulations indicates that reentrained road dust only needs to be included in the conformity analysis for PM-2.5 nonattainment areas if EPA or the Arizona Department of Environmental Quality have made a finding and notified MAG and the U.S. Department of Transportation that these sources are a significant contributor to the PM-2.5 problem.

Road construction emissions were not included in the conformity analysis for the PM-10 nonattainment area, because Section 93.122(e)(2) of the Transportation Conformity Regulations state: “In PM10 nonattainment and maintenance areas with implementation plans which identify construction-related fugitive PM10 as a contributor to the nonattainment problem, the regional PM10 emissions analysis shall consider construction-related fugitive PM10 and shall account for the level of construction activity, the fugitive PM10 control measures in the applicable implementation plan, and dust-producing capacity of the proposed activities.” The MAG 2014 Conformity Analysis began on September 29, 2013. The Arizona Department of Environmental Quality issued the proposed Arizona State Implementation Plan Revision for the West Pinal County PM-10 Nonattainment Area for 30-

day public review and comment on November 7, 2013. Because no implementation plan for the Pinal County nonattainment area was available on the date that the MAG 2014 Conformity Analysis began, the requirement to include road construction emissions does not apply.

Traffic data (vehicle miles of travel and speeds by link) were generated with the TransCAD transportation model. GIS was used to derive VMT by link for the Pinal PM-10 and PM-2.5 nonattainment areas. The MOVESLink model was used to calculate emissions for each nonattainment area using MOVES2010b emission factors and the traffic data. The analysis for both the Pinal PM-10 and PM-2.5 nonattainment areas reflects data on an annual average day.

The MOVES2010b and MOVESLink models used in estimating onroad vehicle emissions for the Pinal County nonattainment areas are described in the next two sections. For the West Pinal PM-10 nonattainment area, output of the MOVESLink model represents PM-10 emissions from vehicle exhaust, tire wear and brake wear. For the West Central Pinal PM-2.5 nonattainment area, the MOVESLink output represents vehicle exhaust emissions for nitrogen oxides (NOx) and exhaust, tire wear and brake wear emissions for PM-2.5.

PM-10 emission factors for reentrained dust from vehicles traveling on unpaved and paved roads in the Pinal PM-10 nonattainment area are calculated using the latest equations found in Sections 13.2.2 and 13.2.1.3, respectively, of AP-42, EPA Compilation of Air Pollutant Emission Factors. The AP-42 equation for paved roads was revised by EPA in January 2011. The unpaved and paved road emission factors are multiplied by vehicle miles of travel to estimate unpaved and paved road emissions. The last two sections discuss the assumptions used to calculate particulate emissions from unpaved and paved roads in the Pinal PM-10 nonattainment area.

MOVES2010b

MOVES2010b is a model developed by EPA for the purpose of estimating motor vehicle emission factors for specified vehicle fleet, fuel, temperature, and speed conditions. This model is used to estimate particulate (exhaust, tire wear, and brake wear) emission factors for the Pinal PM-10 and PM-2.5 nonattainment areas and nitrogen oxide (NOx) exhaust emission factors for the Pinal PM-2.5 nonattainment area.

The MOVES2010b model generates estimates of motor vehicle emission factors in units of grams of pollutant emitted per vehicle mile of travel. MOVES2010b uses a locally-derived motor vehicle registration distribution (by model year) of 30 years. For the 2014 MAG Conformity Analysis, July 2013 vehicle registrations for Pinal County, obtained from the Arizona Department of Transportation, were used as input to MOVES2010b. MOVES2010b also incorporates fleet turnover to newer, cleaner vehicles over time, which counters the increase in regional emissions that occur with growth in vehicle miles of travel. Other factors, such as fuel quality and vehicle speed, are also important.



Inspection and maintenance (I/M) program benefits were assumed for the portion of Area A which is located in the Pinal PM-10 nonattainment area. The I/M runs reflect the provisions of the enhanced inspection program which was implemented in January 1995 and the measure “Phased-in Emission Test Cutpoints” (see Table 4), implemented in January 2000. The cutpoint values used are the MOVES2010b default Phase 2 cutpoints. For the three horizon years modeled in this analysis, it was assumed that the onboard diagnostic (OBD) test would be used for the model year 1996 and newer vehicles with an exemption for all vehicles of the current plus four model years.

MOVES2010b outputs were weighted to account for vehicles driving in the Pinal PM-10 nonattainment area that do not participate in the I/M program. Therefore, each modeled scenario required runs with and without the I/M program benefits. For this analysis, it was assumed that 91.6 percent of eligible onroad vehicles participate in the I/M program within the Area A portion of the Pinal PM-10 nonattainment area. This fraction reflects an increase in the participation in the I/M program due to implementation of the measure, “Tougher Enforcement of Vehicle Registration and Emission Test Compliance” (see Table 4). For all scenarios modeled for this analysis, the inputs for each run included oxygenated gasoline with an assumed market share of 100 percent ethanol. The gasoline volatility and average oxygen content of the ethanol blend gasoline were based on fuel inspection data provided to MAG by the Arizona Department of Weights and Measures.

The MOVES2010b runs that reflected the I/M program in Area A assumed vehicle waiver rates of 1.3 percent or 1.0 percent, dependent upon model year. These fractions reflected the lower waiver rates resulting from the implementation of “One Time Waiver from Vehicle Emissions Test” (see Table 4). The output from the MOVES2010b model includes emission factors by hour, roadway facility type, pollutant, and area type.

#### MOVESLink

MOVESLink software processes link data files output by the MAG transportation model, TransCAD. The program calculates emissions for roadway links in the MAG highway networks. Traffic volumes for four time periods (AM peak, mid-day, PM peak, and night time) for each link are converted into hourly volumes based upon traffic count data collected in Maricopa County in 2007. Hourly emission factors are developed by running MOVES2010b for each facility type, area type, and vehicle class using link speeds by time of day.

The transportation model inputs to MOVESLink consist of database formatted files that contain link-specific data and a node coordinate definitions file. MOVESLink also requires as input:

- A table containing adjustment factors used to allocate traffic volumes for four time periods to hourly traffic volumes.

- A matrix of emission factors for a range of hours, facility types, area types, vehicle classes, and vehicle ages (generated by the MOVES model).
- The ratio of vehicles participating in the I/M program.
- The year being modeled.

#### Unpaved Roads

The AP-42 equation that calculates PM-10 emission factors for unpaved road fugitive dust requires as input the road surface material silt content, road surface moisture content, average vehicle speed, and the annual number of wet days (with at least 0.01 inch of precipitation). The unpaved roads in the Pinal PM-10 nonattainment area are stratified by four categories (agricultural, public, private and trails) and a number of subcategories. The silt content, moisture content and speeds shown in Table 8 are inputs to the AP-42 equation for unpaved roads. These 2008 data were provided to MAG by the Pinal County Air Quality Control District in July 2013.

During the period 2008-2012, there was an annual average of 31 days with at least 0.01 inch of precipitation in Pinal County. This annual number of wet days, derived from Arizona Meteorological Network (AZMET) data collected in the City of Maricopa and City of Coolidge, is also input to the AP-42 equation to calculate unpaved road emission factors for the Pinal PM-10 nonattainment area.

The annual average daily traffic (AADT) and miles of unpaved roads by subcategory in the Pinal PM-10 nonattainment area are shown in Table 8. The AADT and miles represent 2008 data provided to MAG by the Pinal County Air Quality Control District in July 2013.

The AADT is multiplied by the miles to calculate VMT. The VMT is multiplied by the AP-42 emission factor to obtain the PM-10 unpaved road emissions for trails and each agricultural, public and private unpaved road subcategory. The daily unpaved road emissions calculated using AP-42 represent uncontrolled PM-10 emissions. The uncontrolled 2008 unpaved road emissions are held constant for all conformity analysis years.

Since no State Implementation Plans (SIPs) have been submitted to EPA for the Pinal County nonattainment areas, emission reductions are assumed for sources in Pinal County that are currently controlled by Arizona state laws. For the 2014 MAG Conformity Analysis, a six percent reduction has been applied to fugitive dust emissions from agricultural unpaved roads for the build and no-build scenarios in all conformity analysis years. This reduction reflects requirements of the state Agricultural Best Management Practices (BMPs) that apply to all moderate PM-10 nonattainment areas in Arizona. The Agricultural BMPs went into effect when EPA designated the West Pinal area to be a moderate nonattainment area for PM-10, effective July 2, 2012.

TABLE 8.  
DATA USED TO CALCULATE EMISSIONS FROM UNPAVED ROADS  
IN THE PINAL PM-10 NONATTAINMENT AREA

Categories/Subcategories		Silt Content	Moisture Content	Speed	AADT	Miles
Agricultural		14.9%	0.8%			
	Operations			10 mph	1.5	922.7
	Inspection			25 mph	0.5	2,830.7
	Harvest			15 mph	50.0	421.7
Public		7.1%	0.3%			
	Class A			20 mph	28.5	89.7
	Class B			25 mph	89.5	239.2
	Class C			30 mph	126.5	89.7
	Class D			35 mph	185.5	119.6
	Class E			40 mph	438.5	59.8
Private		14.4%	0.3%			
	Non-Irrigation			25 mph	25.0	893.2
	Principal Canal			25 mph	15.0	148.2
	Secondary Canal			15 mph	3.0	743.6
Trails		14.4%	0.3%	15 mph	2.0	1,244.0

The six percent reduction in agricultural unpaved road emissions is consistent with assumptions in the 2008 PM-10 Periodic Emissions Inventory for the Maricopa County, Arizona, Nonattainment Area, prepared by the Maricopa County Air Quality Department (MCADQ, 2011). This reduction is applied to both the build and no-build scenarios in each conformity analysis year (i.e., 2015, 2025, 2035).

The emissions from public unpaved roads are reduced in the build scenario to take credit for paving projects scheduled for implementation in the Pinal PM-10 nonattainment area. These fifteen paving projects and their implementation years are listed in Table 9.

The benefit of these projects is calculated using the AP-42 emission factor for public unpaved roads multiplied by the length and average daily traffic (ADT) of the road to be paved. The mileage and ADT for each paving project are shown in Table 9. The ADT is multiplied by 0.93 to convert to annual average daily traffic (AADT).

The AP-42 unpaved road emission benefit for each project is reduced by 1.47 grams per mile to account for the paved road emission rate of vehicles traveling on the newly paved road. To be conservative, this rate assumes that the newly-paved road does not have a paved shoulder or curb and gutter. If a traffic count has not been performed on the unpaved road, an ADT of 140 vehicles per day is assumed. This represents the average ADT for all public unpaved roads in the Pinal PM-10 nonattainment area in 2008.

The total PM-10 emissions reduction due to the paving projects is applied to the 2025 and 2035 build scenarios, based on the year of implementation. Credit for the paving projects implemented in FY 2016-2023 is applied in 2025; credit for the projects implemented in FY 2016-2034 is applied in 2035.

Paved Roads

The AP-42 equation that calculates PM-10 emission factors for paved road fugitive dust requires as input the road surface silt loading, the average weight of vehicles traveling on paved roads, and the number of wet days (with at least 0.01 inch of precipitation). The road surface silt loadings used for the Pinal PM-10 nonattainment area are 0.02 g/m<sup>2</sup> for freeways, 0.067 g/m<sup>2</sup> for high-traffic arterials, and 0.23 g/m<sup>2</sup> for low-traffic arterials and the average vehicle weights are 3.53 tons on freeways and 2.65 tons on arterials. These silt loadings and vehicle weights are consistent with assumptions in the MAG 2012 Five Percent Plan for PM-10 (MAG, 2012).

During the period 2008-2012, there was an annual average of 31 days with at least 0.01 inch of precipitation in Pinal County. This annual number of wet days, derived from AZMET data collected in the City of Maricopa and City of Coolidge, is also input to the AP-42 equation to calculate paved road emission factors for the Pinal PM-10 nonattainment area.

TABLE 9.  
PAVING PROJECTS IN THE PINAL COUNTY PM-10 NONATTAINMENT AREA

Agency	Fiscal Year	Location	Miles	ADT
Coolidge	2022	Bartlett Rd: Hwy 87 to 5th Street	0.46	31
Coolidge	2023	Randolph Rd: Hwy 87 to Vail Rd	1.00	140
Coolidge	2027	Macrae Rd: Coolidge Ave to Martin Rd	1.08	118
Coolidge	2027	Macrae Rd: Coolidge Ave to Vah Ki Inn Rd	1.01	174
Coolidge	2027	McCartney Rd: La Palma Rd to Sunshine Blvd	1.01	140
Coolidge	2027	Signal Peak Rd: Woodruff Rd to McCartney Rd	1.00	140
Coolidge	2028	McCartney Rd: Sunshine Blvd to Eleven Mile Corner	1.00	140
Coolidge	2030	Macrae Rd: Vah Ki Inn Rd to Hwy 87	1.02	130
Coolidge	2030	Val Vista Rd: Signal Peak Rd to 1/4 mi east of Curry Rd	1.28	57
Coolidge	2031	Val Vista Rd: Macrae Rd to 1/4 mi east of Curry Rd	1.21	67
Coolidge	2034	Eleven Mile Corner Rd: Barlett to Randolph Rd	1.47	140
Eloy	2016	Houser Rd: Frontier to Eleven Mile Corner	1.60	140
Florence	2025	Cooper Rd: Magma to Judd	1.00	500
Florence	2026	Canal Rd: Valley Farms to Hilscox	1.00	140
Maricopa	2018	Bolwin Rd: Hartman Rd to Murphy Rd	1.00	140

The resulting AP-42 emission factors are multiplied by the 2008 VMT for the Pinal PM-10 nonattainment area produced by the Arizona Department of Transportation using the TransCAD model. The TransCAD output is multiplied by 0.92 to convert from average weekday to annual average daily traffic. The total VMT is stratified by freeway, high-traffic arterials and low-traffic arterials using the percent of VMT for each of these categories in the Pinal PM-10 nonattainment area, obtained by applying GIS to a MAG 2011 traffic assignment. The resultant 2008 paved road emissions are consistent with the estimate in the Draft 2008 Periodic Emissions Inventory for PM-10, currently being developed by the Arizona Department of Environmental Quality for the Pinal PM-10 nonattainment area (Sierra Research, 2013).

For the conformity analysis years of 2015, 2025 and 2035, paved road emissions for the build and no-build scenarios are increased based on the growth in VMT estimated by the MAG TransCAD model for the Pinal PM-10 nonattainment area, relative to 2008. In 2025 and 2035, paved road emissions for the build scenario are higher than the no-build scenario. This increase is more than offset by the emission reductions attributable to the projects in Table 9 that pave unpaved roads in the Pinal PM-10 nonattainment area.



5 TRANSPORTATION CONTROL MEASURES

This chapter provides an update of the current status of transportation control measures identified in applicable implementation plans. Requirements of the federal conformity rule relating to transportation control measures (TCMs) are presented first, followed by a review of the applicable air quality implementation plans and TCM findings for the FY 2014-2018 MAG Transportation Improvement Program (TIP) and 2035 MAG Regional Transportation Plan. A review of the funding and current status of TCM implementation is presented. The chapter concludes with a measure-by-measure assessment of the current status of each transportation control measure.

FEDERAL CONFORMITY RULE REQUIREMENTS FOR TCMs

The federal conformity rule (40 CFR 93.113) requires that the TIP and Regional Transportation Plan “must provide for the timely implementation of TCMs in the applicable implementation plan.” The federal definition for the term “transportation control measure” is provided in 40 CFR 93.101:

“any measure that is specifically identified and committed to in the applicable implementation plan that is either one of the types listed in Section 108 of the CAA [Clean Air Act], or any other measure for the purpose of reducing emissions or concentrations of air pollutants from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions. Notwithstanding the first sentence of this definition, vehicle technology-based, fuel-based, and maintenance-based measures which control the emissions from vehicles under fixed traffic conditions are not TCMs for the purposes of this subpart.”

In the federal conformity rule, the definition provided for the term “applicable implementation plan” is:

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

Section 108(f)(1) of the Clean Air Act as amended in 1990 lists the following transportation control measures and technology-based measures:

- (i) programs for improved public transit;
- (ii) restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or high occupancy vehicles;
- (iii) employer-based transportation management plans, including incentives;
- (iv) trip-reduction ordinances;
- (v) traffic flow improvement programs that achieve emission reductions;
- (vi) fringe and transportation corridor parking facilities serving multiple occupancy vehicle programs or transit service;
- (vii) programs to limit or restrict vehicle use in downtown areas or other areas of emission concentration particularly during periods of peak use;
- (viii) programs for the provision of all forms of high-occupancy, shared-ride services;
- (ix) programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of non-motorized vehicles or pedestrian use, both as to time and place;
- (x) programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas;
- (xi) programs to control extended idling of vehicles;
- (xii) programs to reduce motor vehicle emissions, consistent with title II, which are caused by extreme cold start conditions;
- (xiii) employer-sponsored programs to permit flexible work schedules;
- (xiv) programs and ordinances to facilitate non-automobile travel, provision and utilization of mass transit, and to generally reduce the need for single-occupant vehicle travel, as part of transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity;
- (xv) programs for new construction and major reconstructions of paths, tracks or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest. For purposes of this clause, the Administrator shall also consult with the Secretary of the Interior; and
- (xvi) program to encourage the voluntary removal from use and the marketplace of pre-1980 model year light duty vehicles and pre-1980 model light duty trucks.

TCM Requirements For A Transportation Plan

The EPA regulations in 40 CFR 93.113(b) indicate that transportation control measure requirements for transportation plans are satisfied if two criteria are met:

- “(1) The transportation plan, in describing the envisioned future transportation

system, provides for the timely completion or implementation of all TCMs in the applicable implementation plan which are eligible for funding under Title 23 U.S.C. or the Federal Transit Laws, consistent with schedules included in the applicable implementation plan.

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

#### TCM Requirements For A Transportation Improvement Program

Similarly, in 40 CFR Section 93.113(c), EPA specifies three TCM criteria applicable to a transportation improvement program:

- “(1) An examination of the specific steps and funding source(s) needed to fully implement each TCM indicates that TCMs which are eligible for funding under title 23 U.S.C. or the Federal Transit Laws are on or ahead of the schedule established in the applicable implementation plan, or, if such TCMs are behind the schedule established in the applicable implementation plan, the MPO and DOT have determined that past obstacles to implementation of the TCMs have been identified and have been or are being overcome, and that all state and local agencies with influence over approvals or funding for TCMs are giving maximum priority to approval or funding of TCMs over other projects within their control, including projects in locations outside the nonattainment or maintenance area;
- (2) If TCMs in the applicable implementation plan have previously been programmed for federal funding but the funds have not been obligated and the TCMs are behind the schedule in the implementation plan, then the TIP cannot be found to conform:
  - if the funds intended for those TCMs are reallocated to projects in the TIP other than TCMs, or
  - if there are no other TCMs in the TIP, if the funds are reallocated to projects in the TIP other than projects which are eligible for federal funding intended for air quality improvement projects, e.g., the Congestion Mitigation and Air Quality Improvement Program; and
- (3) Nothing in the TIP may interfere with the implementation of any TCM in the applicable implementation plan.”

#### **APPLICABLE AIR QUALITY IMPLEMENTATION PLANS**

Only transportation control measures from applicable implementation plans for the MAG region are required to be updated for this analysis. For the 2014 MAG Conformity Analysis, the applicable implementation plans, according to the definition provided at the start of this chapter, are the Revised 1999 MAG Serious Area Particulate Plan for PM-10, Revised MAG 1999 Serious Area Carbon Monoxide Plan, Carbon Monoxide Redesignation Request and Maintenance Plan, MAG Eight-Hour Ozone Plan, and the One-Hour Ozone Redesignation Request and Maintenance Plan. The Environmental Protection Agency took final action on July 25, 2002 to approve the Revised 1999 Serious Area Particulate Plan for PM-10. On March 9, 2005, EPA published the final rule in the *Federal Register* approving the Revised MAG 1999 Serious Area Carbon Monoxide Plan and the Carbon Monoxide Maintenance Plan, effective April 8, 2005 (EPA, 2005a). EPA approved the MAG 2007 Eight-Hour Ozone Plan, effective July 13, 2012. Also, EPA approved the One-Hour Ozone Maintenance Plan, effective June 14, 2005.

In addition, the Revised 1998 15 Percent Rate of Progress (ROP) Federal Implementation Plan (FIP) for ozone and the Moderate Area Federal Implementation Plan for PM-10 are applicable plans. However, neither of these plans contained TCMs.

Although not approved and therefore not applicable by definition, TCMs in previous air quality plans submitted to EPA are discussed in this chapter for informational purposes. A summary of the commitments from the submitted plans are also included for informational purposes.

#### Applicable Implementation Plans for Carbon Monoxide

Since EPA has approved the Revised MAG 1999 Serious Area Carbon Monoxide Plan, this plan is applicable and the transportation control measures contained in the plan are discussed. The TCMs in the Serious Area Carbon Monoxide Plan are the same as those in the approved Serious Area PM-10 Plan. The Revised MAG 1999 Serious Area CO Plan provides a comprehensive implementation schedule for all of the control measures in Chapter Eight (pages 8-1 through 8-146). An assessment of the expected effectiveness of each measure is located in Chapter V of the Technical Support Document (TSD) of the Revised MAG 1999 Serious Area CO Plan. These chapters are contained in Appendix G of the conformity analysis. All TCMs for which emission reduction credit was taken in the Serious Area CO Plan have been implemented and are incorporated into the base year traffic assignment for the conformity analysis.

In addition, the EPA approved the Carbon Monoxide Redesignation Request and Maintenance Plan for the Maricopa County Nonattainment Area, effective April 8, 2005. The MAG 2013 Carbon Monoxide Maintenance Plan for the Maricopa County Area was submitted to EPA in March 2013. The Carbon Monoxide Maintenance Plans do not introduce any new TCMs; however, two TCMs, “Coordinate Traffic Signal Systems” and “Develop Intelligent Transportation Systems”, will continue to be implemented through the

maintenance year of 2025. However, no emission reduction credit is taken for these TCMs in conformity.

Submitted Implementation Plans for Carbon Monoxide

Two other submitted carbon monoxide plans provide information on additional transportation control measures. All TCMs for which emission reduction credit was taken in submitted carbon monoxide plans have been incorporated into the base year traffic assignment for the conformity analysis.

The MAG 1987 Carbon Monoxide Plan provides a comprehensive implementation schedule in Chapter Seven (pages 7-1 through 7-84) for all of the control measures of that Plan. Chapter Eight of the MAG 1987 CO Plan assessed the expected effectiveness of each measure. These chapters are located in Appendix D of the conformity analysis.

In the MAG 1993 Carbon Monoxide Plan, the control measures and implementation schedule are contained in Chapter Eight (pages 8-1 through 8-68). Chapter Nine of the MAG 1993 CO Plan presents an assessment of the expected effectiveness of each measure. These chapters are located in Appendix E. Similarly, Chapter Two of the MAG 1993 Carbon Monoxide Plan Addendum contains a description of additional measures provided under Arizona House Bill 2001 (see Appendix F).

Applicable Implementation Plan for Ozone

The MAG One-Hour Ozone Redesignation Request and Maintenance Plan, approved by EPA in June 2005, contains measures from the Revised MAG 1999 Serious Area Carbon Monoxide Plan and Carbon Monoxide Redesignation Request and Maintenance Plan, since most of those measures also reduce ozone. Therefore, no new TCMs are introduced.

In addition, EPA approved the MAG 2007 Eight-Hour Ozone Plan for the Maricopa Nonattainment Area, effective July 13, 2012. The MAG Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area was submitted to EPA in March 2009. These Plans do not introduce any new TCMs; however, two TCMs, “Coordinate Traffic Signal Systems” and “Develop Intelligent Transportation Systems”, will continue to be implemented through the maintenance year of 2025. No emission reduction credit is taken for these TCMs in conformity.

The other applicable ozone plan is the 15 Percent Rate of Progress (ROP) Federal Implementation Plan (FIP) promulgated by EPA on May 27, 1998 for the Maricopa County nonattainment area, effective June 26, 1998. On July 6, 1999, EPA issued the Final Rule for changes to the control strategy used in developing the Revised ROP FIP (EPA, 1999a). However, the Revised ROP FIP did not introduce any TCMs.

Submitted Implementation Plans for Ozone

Although there is no applicable implementation plan for ozone that specifies TCMs for this region, measures included in submitted plans for ozone are reviewed for informational purposes in this report. These measures have been implemented and any resulting creditable emission reduction benefits have been incorporated into the base year traffic assignment for the conformity analysis.

The selected control strategies in the 1978 Nonattainment Area Plan for CO and Photochemical Oxidants in the Maricopa County Urban Planning Area (BAQC, 1978) are contained in Chapter Four (pages 4-1 through 4-18) of that document. Chapter Five of that Plan addressed the expected impact of the selected control strategies. These chapters are provided in Appendix H. The 1978 Plan contained five transportation-related measures, of which only two would be considered TCMs under the EPA definition: Carpooling - Voluntary Program; and Modified Work Schedules - Voluntary Program.

TCMs from the 1987 MAG Ozone Plan for the Maricopa County Area have been documented in Appendix I of the conformity analysis. The MAG 1993 Ozone Plan and 1993 Ozone Plan Addendum contain additional TCMs that would reduce ozone related emissions, and these measures are documented in Appendices J and K.

The Serious Area Ozone State Implementation Plan for Maricopa County was submitted to EPA in December 2000 by the Arizona Department of Environmental Quality (ADEQ, 2000). This Plan contains a list of control measures; however no new TCMs are introduced on this list.

Applicable Implementation Plan for PM-10

On July 25, 2002, the EPA took final action to approve the Revised MAG 1999 Serious Area Particulate Plan for PM-10. A measure-by-measure review of TCMs contained in the Revised MAG 1999 Serious Area PM-10 Plan is provided later in this chapter. A comprehensive implementation schedule for all of the transportation control measures is provided in Chapter Seven (pages 7-1 through 7-285) of the Revised MAG 1999 Serious Area PM-10 Plan. An assessment of the expected effectiveness of each measure is located in Chapter V of the Technical Support Document of the Revised MAG 1999 Serious Area Particulate Plan for PM-10. These chapters are contained in Appendix M. The only TCM for which emission reduction credit was taken in the Serious Area PM-10 Plan was “Coordinate Traffic Signal Systems”.

Submitted Implementation Plans for PM-10

In addition, three submitted plans for PM-10, described below, are reviewed for information on transportation control measures. All TCMs in the submitted and applicable PM-10 plans have been implemented and any resulting creditable emissions reduction benefits have been incorporated into the base year traffic assignment for the conformity analysis.



On August 3, 1998, EPA promulgated a PM-10 Moderate Area Federal Implementation Plan (EPA, 1998b), effective September 2, 1998, but this Plan did not introduce any TCMs. The MAG 1988 Particulate Plan For PM-10, provides a comprehensive implementation schedule in Chapter Seven (pages 7-1 through 7-108) for all of the control measures of that Plan. Chapter Eight of the MAG 1988 PM-10 Plan assessed the expected effectiveness of each measure. These chapters are located in Appendix N. In the MAG 1991 Particulate Plan for PM-10 for the Maricopa County Area and 1993 Revisions, the control measures and implementation schedule are contained in Chapter Seven (see Appendix O).

In accordance with Section 189(d) of the Clean Air Act, the MAG 2007 Five Percent Plan for PM-10 was submitted to EPA by December 31, 2007. On September 9, 2010, EPA proposed to partially approve and partially disapprove the Five Percent Plan. On January 25, 2011, prior to any final EPA action, Arizona voluntarily withdrew the Five Percent Plan from EPA consideration.

On May 25, 2012, the MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area was submitted to EPA. The new MAG 2012 Five Percent Plan for PM-10 contains a wide variety of existing control measures and projects that have been implemented to reduce PM-10 and a new measure designed to reduce PM-10 during high risk conditions, including high winds. While the 2007 Five Percent Plan was withdrawn, a wide range of control measures in that plan continue to be implemented to reduce PM-10 and have been resubmitted (see Appendix L). The MAG 2012 Five Percent Plan does not include any TCMs.

TCM FINDINGS FOR THE TIP AND REGIONAL TRANSPORTATION PLAN

Currently, MAG estimates that all TCMs in the applicable SIPs have been implemented for several years and any ongoing TCMs are on schedule and there are no obstacles to implementation of the TCMs. In addition, Table 10 confirms that considerable resources are being allocated to projects above and beyond the TCMs and other committed measures from applicable Plans. Therefore, the TIP and Regional Transportation Plan provide for the timely implementation of the TCMs in the applicable air quality plans and nothing in the TIP or RTP interferes with the implementation of any TCM in an applicable implementation plan.

A measure-by-measure assessment of individual transportation control measures in the applicable and other submitted plans is provided below. Some of the TCMs in the plans were implemented in the short term and have been fully implemented for several years. Their completed implementation is therefore assumed in the base year set of assumptions in the traffic assignments for the TIP and 2035 MAG Regional Transportation Plan. The TIP provides continued funding for many such TCMs (e.g. trip reduction, transit, bikeway improvements, ridesharing, and freeway management systems), which now have been implemented to a significantly greater degree than committed originally.

TABLE 10. PROGRAMMED TRANSPORTATION PROJECTS THAT IMPLEMENT TCMs AND OTHER AIR QUALITY MEASURES

SIP CATEGORY	FY 2014 FUNDING (\$ MILLIONS)	FY 2014-2018 FUNDING (\$ MILLIONS)	MEASURE DESCRIPTION
Regional Public/Rapid Transit	Capital \$220.3 Operating \$65.6*	Capital \$861.7 Operating \$108.3*	FY 2014 includes 39 proposed capital transit projects. The entire TIP includes 184 proposed capital transit projects.
Areawide Ridesharing, Travel Reduction, Education and Outreach Programs, and Vanpools	4.4	20.1	Rideshare and Trip Reduction programs are funded for each year of the FY 2014 - 2018 TIP including: a MAG Regional Rideshare and Telework Program, MAG Trip Reduction Program, and the Arizona Department of Administration Travel Reduction Program. The TIP also funds 250 new and replacement vehicles for vanpools.
Park and Ride Lots	2.7	17.7	Site identification, design and construction for 4 park and ride lots.
Freeway Management System	16.4	42.9	The TIP contains 22 ADOT Freeway Management System projects.
Traffic Flow Improvements	20.6	60.1	The TIP includes 67 traffic signal synchronization and Intelligent Transportation System (ITS) projects and 29 intersection improvement projects.
Bicycle and Pedestrian Travel	36.8	72.2	The TIP includes 76 bicycle, pedestrian, and multiuse path projects.
Paving of Streets, Shoulders, and Alleys	4.8	22.5	The TIP includes 28 projects for the design and paving of dirt roadways, shoulders, alleys, and access points.
PM-10 Efficient Street Sweepers	0.9	5.8	In fiscal years 2014 through 2017, the TIP includes \$5.8 million to purchase PM-10 Efficient Street Sweepers to reduce dust on paved roads. In addition, FY 2018 includes a lump sum for MAG Air Quality and Travel Demand Management Programs.

\* This amount includes only the funding for transit operation projects listed in the FY 2014-2018 MAG Transportation Improvement Program.

In addition, the transportation plan assumes or specifically calls for TCM implementation at current or expanded levels, consistent with adopted TCM commitments. The plan specifically addresses transit service, high occupancy vehicle lanes, demand management programs, and bicycle and pedestrian facility needs. Moreover, continued reliance on alternative modes of travel is reflected in the projected levels of vehicle traffic used in the determination of facility needs and funding priorities.

A listing of projects and programs from the TIP which implement transportation control measures and other air quality measures is provided in Table 10. It should be noted that not all of the projects listed in the table correspond to specific implementation of commitments, because additional TCM implementation over and above SIP committed levels will be taking place.

Throughout the process of preparing the 2014 MAG Conformity Analysis for the FY 2014-2018 TIP and RTP, no impediments to the timely implementation of adopted TCMs have been identified. With respect to funding, the MAG region obligates approximately 100 percent of its available federal Congestion Mitigation and Air Quality (CMAQ) Improvement budget. In addition, the information provided in Table 10 provides an indication that considerable resources are being allocated to TCMs and other measures that will result in significant air quality benefits, beyond those represented by TCM commitments in applicable Plans.

**MEASURE-BY-MEASURE TCM ASSESSMENT**

Transportation control measure documentation used in conjunction with the conformity assessment of the TIP and Regional Transportation Plan is provided below. The numbering system used to identify control measures is consistent with the list of TCMs in Section 108 of the Clean Air Act.

(i) Programs for Improved Public Transit

Submitted Plans and Measures:

- 1987 Carbon Monoxide Plan, measures 3, 4, and 10
- 1993 Carbon Monoxide Plan\*, measures 1a, 1b, and 1c
- 1993 Carbon Monoxide Plan Addendum\*, measure I-1
- Revised 1999 Serious Area Carbon Monoxide Plan, measure 24
- 2003 Carbon Monoxide Maintenance Plan
- 2013 Carbon Monoxide Maintenance Plan\*
  
- 1987 Ozone Plan\*, measures 3, 4, and 10
- 1993 Ozone Plan\*, measures 1a, 1b, and 1c
- 1993 Ozone Plan Addendum\*, measure I-1
- One-Hour Ozone Maintenance Plan

Eight-Hour Ozone Plan  
Eight-Hour Ozone Maintenance Plan\*

- 1988 PM-10 Plan, measures 18, 19, and 25
- 1991 PM-10 Plan with 1993 Revisions, measures 18, 19, and 25
- Revised 1999 Serious Area PM-10 Plan, measure 25
- 2012 Five Percent Plan for PM-10\*

\* = EPA approval pending

Measure Status:

Local commitments in the MAG 1987 CO Plan and 1987 Ozone Plan demonstrated widespread support for short- and long-range transit improvements, including park and ride lot improvements coordinated through the RPTA. The MAG 1993 CO Plan and 1993 Ozone Plan includes commitments for programs for improved public transit and local commitments for an expansion of public transportation services. New funding sources for transit improvements represented approximately a seven percent increase to base service levels. In addition, several jurisdictions advocated park-and-ride lots to support the public transit network.

The commitments from local governments for the Serious Area plans include initiatives addressing mass transit alternatives. For example, a number of cities worked in a cooperative effort with MAG, RPTA, and FTA to conduct feasibility studies for high capacity transit corridors within the metropolitan area. The studies evaluated the feasibility of options such as light rail, bus ways, and commuter rail.

Several local governments have made public transit improvements beyond commitments made in air quality plans. For example, in September 1996, Tempe voters approved a sales tax referendum to fund improved transit service. In 2000, the Phoenix voters approved the Transit 2000 Plan increasing the local sales tax by .4 percent over 20-years. The Transit 2000 Plan provides for light rail rapid transit, extended hours of local bus service, increased dial-a-ride service, additional express bus service, and other transit improvements. In November 2001, Glendale voters approved a half-cent sales tax for transportation improvements including increased bus service, light rail transit, and dial-a-ride. Also, in September 2005, Peoria voters approved a sales tax increase of 0.3 percent that will be dedicated to transportation improvements, including the addition of fixed route bus lines.

On November 2, 2004, voters approved Proposition 400 that extends the half-cent sales tax for transportation improvements. The Regional Transportation Plan provides the blueprint for the implementation of Proposition 400, including future public transit improvements.

In addition, for the Conformity Analysis, MAG reports on the recent changes to the transit system. In December 2008, the 20-mile Light Rail Transit (LRT) Minimum Operating Segment began service from Bethany Home Road and 19<sup>th</sup> Avenue into downtown Phoenix and from downtown Phoenix to downtown Tempe and Arizona State University, and continuing to the intersection of Main Street and Sycamore in Mesa. Chapter 3 provides a list of transit service changes reported by Valley Metro/RPTA in FY 2012.

Impact of TIP and RTP:

The FY 2014-2018 MAG Transportation Improvement Program contains a listing of 184 proposed capital transit projects estimated to cost a total of \$861.7 million. The funding for proposed capital transit projects programmed for FY 2014 is approximately \$220.3 million. Also, for the period covered in the TIP, 65 transit projects for operations are programmed at \$108.3 million. It is concluded that implementation of the TIP will directly support transit improvements. A description on the planned transit facilities is located in Chapter 10 of the RTP.

(ii) Restriction of Certain Roads or Lanes to, or Construction of Such Roads or Lanes for Use by, Passenger Buses or High Occupancy Vehicles

Submitted Plans and Measures:

1987 Carbon Monoxide Plan, measures 5, 14, 15, and 16  
 1993 Carbon Monoxide Plan\*, measures 2a, 2b, and 2c  
 1993 Carbon Monoxide Plan Addendum\*, measure I-17  
 Revised 1999 Serious Area Carbon Monoxide Plan, measure 55  
 2003 Carbon Monoxide Maintenance Plan  
 2013 Carbon Monoxide Maintenance Plan\*

1987 Ozone Plan\*, measures 5, 14, 15, and 16  
 1993 Ozone Plan\*, measures 2a, 2b, and 2c  
 1993 Ozone Plan Addendum\*, measure I-20  
 One-Hour Ozone Maintenance Plan  
 Eight-Hour Ozone Plan  
 Eight-Hour Ozone Maintenance Plan\*

1988 PM-10 Plan, measures 20, 29, 30, and 31  
 1991 PM-10 Plan with 1993 Revisions, measures 20, 29, 30, and 31  
 Revised 1999 Serious Area PM-10 Plan, measure 76  
 2012 Five Percent Plan for PM\*

\* = EPA approval pending

Measure Status:

The Arizona Department of Transportation, in cooperation with local jurisdictions, is responsible for the construction of the planned MAG Freeway System. An implementation schedule for High Occupancy Vehicle (HOV) lanes and ramps on freeways was specified in the MAG 1987 CO Plan and 1987 Ozone Plan. The MAG 1993 CO Plan and 1993 Ozone Plan identified additional HOV lanes and ramps programmed by ADOT.

The 1993 CO Plan and the 1993 Ozone Plan both indicate that State and local governments will analyze traffic projections and bus frequency on a periodic basis to determine the feasibility of the restriction of certain roads or lanes to or the construction of roads or lanes for use by passenger buses or high occupancy vehicles. This measure could include fixed lanes for buses and carpools, fixed lanes for buses and carpools on freeways, and high occupancy vehicle ramps which by-pass freeway ramp meter signals.

In the Serious Area plans, the commitments from the State and local governments include the promotion of high occupancy vehicle lanes and by-pass ramps through rideshare activities. The Regional Public Transportation Authority indicated that as new facilities open, rideshare activities will be coordinated with employers affected by the Maricopa County Trip Reduction Program and the general public.

High occupancy vehicle lane improvements continue to be implemented beyond the commitments made in air quality plans. As of 2013, there are approximately 232 centerline miles of High Occupancy Vehicle facilities on regional freeways. As new HOV facilities open, Valley Metro/RPTA continues to coordinate the promotion of park-and-ride and rideshare activities.

Impact of TIP and RTP:

The 2035 MAG Regional Transportation Plan directly contributes to the implementation of this measure by providing funds for the construction of HOV lanes. Chapter 8 of the Regional Transportation Plan contains specific HOV policies and priorities that have been adopted to support this measure.

(iii) Employer-Based Transportation Management Plans, Including Incentives

Submitted Plans and Measures:

1987 Carbon Monoxide Plan, measures 12 and 13  
 1993 Carbon Monoxide Plan\*, measures 3a, 3b, 3c, 3d, 3e, 3f and 3g  
 Revised 1999 Serious Area Carbon Monoxide Plan, measures 38 and 52  
 2003 Carbon Monoxide Maintenance Plan



2013 Carbon Monoxide Maintenance Plan\*

1987 Ozone Plan\*, measures 12 and 13  
1993 Ozone Plan\*, measures 3a, 3b, 3c, 3d, 3e, 3f and 3g  
One-Hour Ozone Maintenance Plan  
Eight-Hour Ozone Plan  
Eight-Hour Ozone Maintenance Plan\*

1988 PM-10 Plan, measures 27 and 28  
1991 PM-10 Plan with 1993 Revisions, measure 22  
Revised 1999 Serious Area PM-10 Plan, measures 56 and 73  
2012 Five Percent Plan for PM-10\*

\* = EPA approval pending

Measure Status:

For the MAG 1987 CO Plan and 1987 Ozone Plan, several local governments made commitments to either review the results, consider, or support preferential parking for carpools and vanpools from the MAG Model Trip Reduction Study.

In the MAG 1993 CO Plan and 1993 Ozone Plan, several jurisdictions indicated an ongoing commitment to employer rideshare incentives including passage of ordinances and expanded training at employer sites. Several cities indicated an ongoing commitment to mandatory employee parking fees and preferential parking for carpools and vanpools. Maricopa County and the Arizona Department of Transportation provide preferential parking for carpools and vanpools. Commitments also included the encouragement of vanpools for County and State employees.

In the Serious Area plans, the commitments from the State and local governments include measures supporting employer rideshare program incentives and the trip reduction program. To encourage municipal employees to use alternative modes of transportation, several local governments indicated that they would be offering incentives such as preferential parking, gift drawings, and subsidized bus passes, and emergency ride home service, and telecommuting options. In addition, the Regional Public Transportation Authority (RPTA) indicated that the agency would provide formal training, employer assistance, facilitate transportation coordinator associations, and provide information to Trip Reduction Program employers.

The Trip Reduction Program was mandated by Arizona legislation in 1988 and is administered by Maricopa County. All employers with 50 or more employees are required to participate in the Trip Reduction Program. Elements of the Trip Reduction Program include employer training and facilitation of Transportation Coordinators Associations conducted by Regional Public Transportation Authority.

MAG increased the annual allocation of federal funding for the program from \$250,000 in FY 1988 to \$420,000 in FY 1991, and to \$460,000 annually beginning in FY 1993. Then, beginning in FY 2000, an additional \$200,000 was added for an expanded Regional Rideshare and Telework Program of \$660,000. In fiscal years 2014 through 2017 of the TIP, the amount programmed for Regional Rideshare is \$660,000.

In the most recent Maricopa County Trip Reduction Program Annual Report for the fiscal year ending June 30, 2012, the Trip Reduction Program applied to 1,170 companies with over 683,513 employees and students participating in the survey at 3,013 sites across Maricopa County. Valley Metro/RPTA staff have played an important role in the success of the Maricopa County Trip Reduction Program through the training of employer transportation coordinators. As of FY 2013, there are five Transportation Coordinator Associations in the region. In addition, the Valley Metro\RPTA administers the Regional Rideshare and Telework Program that provides an internet-based service for instant carpool matching for the general public. The Arizona Department of Administration conducts the Travel Reduction Program to approximately 23,000 non-university state employees in Maricopa County.

Impact of TIP and RTP:

A major portion of funding for this TCM is through the FY 2014-2018 MAG Transportation Improvement Program that includes an annual amount of \$962,347 for the Trip Reduction Program and \$135,000 for the state Travel Reduction Program. In fiscal years 2014 through 2017 of the TIP, the Regional Rideshare and Telework Program amount is \$660,000. In addition, FY 2015 includes a lump sum for MAG Air Quality and Travel Demand Management Programs. The amounts indicated above include only monies specified in the TIP and not funds that the programs may receive from other sources. Chapter 18 of the Regional Transportation Plan provides for continued consideration of demand management programs. A copy the latest Maricopa County Regional Trip Reduction Program Annual Report Executive Summary for the period July 1, 2011 - June 30, 2012 (MCAQD, 2012c) and the 2013 Transportation Demand Management Survey Executive Summary (Valley Metro/RPTA, 2013a) are attached in Appendix Q.

(iv) Trip Reduction Ordinances

Submitted Plans and Measures:

1987 Carbon Monoxide Plan, measure 7  
1993 Carbon Monoxide Plan\*, measure 4  
1993 Carbon Monoxide Plan Addendum\*, measure I-3  
Revised 1999 Serious Area Carbon Monoxide Plan, measures 38 and 52

2003 Carbon Monoxide Maintenance Plan  
2013 Carbon Monoxide Maintenance Plan\*

1987 Ozone Plan\*, measure 7  
1993 Ozone Plan\*, measure 4  
1993 Ozone Plan Addendum\*, measure I-3  
One-Hour Ozone Maintenance Plan  
Eight-Hour Ozone Plan  
Eight-Hour Ozone Maintenance Plan\*

1988 PM-10 Plan, measure 22  
1991 PM-10 Plan with 1993 Revisions, measure 22  
Revised 1999 Serious Area PM-10 Plan, measures 56 and 73  
2012 Five Percent Plan for PM-10\*

\* = EPA approval pending

#### Measure Status:

The Maricopa County Travel Reduction Program was established by the Arizona Legislature in 1988, with the goal of reducing the number of single occupant vehicle trips by five percent annually. Originally, the program affected employers with 100 or more employees at a work site. In 1992, the program was expanded to include employers with 75 or more employees at a site. Arizona House Bill 2001, enacted in November 1993, required Maricopa County to adopt and enforce a strengthened Travel Reduction Program Ordinance by May 31, 1994. The strengthened ordinance applies to all employers with 50 or more employees at a single worksite throughout the Maricopa County area. The annual goals are increased from a five percent to a ten percent reduction in employee single occupant vehicle trips or commuter vehicle miles of travel. The ordinance contains annual goals for five years. More recently, the ordinance has been modified to provide employers with opportunities to accomplish equivalent reductions through alternative means.

The commitments from the State and local governments for the Serious Area plans include measures supporting employer rideshare program incentives and the trip reduction program. Several commitments indicate incentives and promotional activities to increase awareness and participation in alternative modes of transportation and work schedules. The Regional Public Transportation Authority indicated efforts to provide training and promotional materials to employers required to participate in the Maricopa County Trip Reduction Program.

According to the latest annual report available, in FY 2012 the Trip Reduction Program applied to over 1,100 companies with over 683,513 employees and students participating in the survey at over 3,000 sites across Maricopa County.

#### Impact of TIP and RTP:

This TCM receives strong support through funding in the FY 2014-2018 MAG Transportation Improvement Program for the Regional Rideshare and Telework Program, the Maricopa County Trip Reduction Program, and the state Travel Reduction Program. Combined, the programs have been allocated funds totaling \$6.8 million for fiscal years 2014-2017 in the TIP. This total only includes funding specified in the TIP and not funds that the programs may receive from other sources. Chapter 18 of the Regional Transportation Plan provides for continued consideration of demand management programs.

#### (v) Traffic Flow Improvement Programs That Achieve Emission Reductions

##### Submitted Plans and Measures:

1987 Carbon Monoxide Plan, measures 17, 18, 19, 20, 21, 22, 24, 25 and 26  
1993 Carbon Monoxide Plan\*, measures 5a, 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i, 5j and 5k  
1993 Carbon Monoxide Plan Addendum\*, measures I-2, I-16, and I-18  
Revised 1999 Serious Area Carbon Monoxide Plan, measures 25, 40, and 41  
2003 Carbon Monoxide Maintenance Plan  
2013 Carbon Monoxide Maintenance Plan\*

1987 Ozone Plan\*, measures 17, 18, 19, 20, 21, 22, 24, 25 and 26  
1993 Ozone Plan\*, measures 5a, 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i, 5j and 5k  
1993 Ozone Plan Addendum\*, measures I-2 and I-19  
One-Hour Ozone Maintenance Plan  
Eight-Hour Ozone Plan  
Eight-Hour Ozone Maintenance Plan\*

1988 PM-10 Plan, measures 32, 33, 34, 35, 36, 37, 38, 39, 40, and 41  
1991 PM-10 Plan with 1993 Revisions, measures 33, 34, 35, 39, and 40  
Revised 1999 Serious Area PM-10 Plan, measures 26, 58, and 59  
2012 Five Percent Plan for PM-10\*

\* = EPA approval pending

#### Measure Status:

This TCM includes a number of measures that were identified in previous air quality plans including the 1987 CO and Ozone Plans and the 1993 CO and Ozone Plans which contained measures for mitigation of freeway construction impacts; freeway surveillance; ramp metering, and signage; computerized synchronization of traffic signals; reversible lanes on arterials; one way streets; truck restrictions during peak periods; intersection improvements; on-street parking restrictions; and bus pullouts.

In April 2001, MAG approved the first comprehensive ITS Strategic Plan and ITS Architecture for the region. This Plan has provided direction for ITS implementation within the region. The Regional ITS Architecture, which is part of the Plan, played a direct role in the identification of ITS projects for programming in the five-year Transportation Improvement Program.

The TCMs “Coordinate Traffic Signal Systems” and “Develop Intelligent Transportation Systems” are supported by several jurisdictions in the Serious Area plans. Commitments include the development of Intelligent Transportation Systems (ITS), the coordination of traffic signal systems, and other intersection improvements to reduce traffic congestion. A general summary of the commitments, and current projects that implement the TCM above the level committed to in the plans, are provided below.

ITS Projects and Freeway Management System Improvements

Several municipalities mentioned the effort to coordinate local traffic signals with the Freeway Management System (FMS) implemented by ADOT, the responsible agency for traffic management on MAG-area freeways. The FMS consists of electronic variable message signs, signals for metering traffic flow at ramps, closed circuit television cameras, vehicle detectors, and a telecommunication network that links all these devices to a Traffic Operations Center. According to the 2035 MAG Regional Transportation Plan, as of late 2012 the coverage of the regional FMS is approximately 150 miles. It is estimated that by 2023 the total FMS coverage of regional freeways will be approximately 225 miles.

Traffic Signal System Coordination

Effective December 31, 1988, traffic signal synchronization has been required by Arizona law for municipalities and for ADOT roadways with traffic volumes exceeding 15,000 vehicles per day. AzTech, a federally funded ITS project launched by the region in 1996, has integrated a number of local traffic management systems. According to the January 2012 AzTech Traffic Management Performance Measures, there are 13 traffic management centers in the region with arterial traffic management infrastructure covering 3,000 signals of which 75 percent are connected to a Traffic Management Center. In the region, traffic on arterial streets is also managed with the assistance of 60 Dynamic Message Signs and 475 Closed Circuit Television cameras.

Intersection Improvements

Implementation of intersection improvements have continued at major intersections as a method to reduce traffic congestion and improve traffic flow. Some jurisdictions reported other traffic control techniques such as bus pull-outs to reduce congestion at major intersections.

Impact of TIP and RTP:

Implementation of this measure is strongly supported through the FY 2014-2018 MAG Transportation Improvement Program. For FY 2014, a total of \$20.6 million for traffic flow improvements is included in the TIP. For the period covered by the TIP, a total of \$60.1 million is programmed for these projects. In addition, the TIP includes funds totaling \$16.4 million in FY 2014 and \$42.9 million over the next five years for traffic flow improvements on freeways, including FMS projects. Chapter 17 of the 2035 MAG Regional Transportation Plan provides for continued consideration of transportation systems and operations management programs. On November 2, 2004, voters approved Proposition 400 that extends the half-cent sales tax for improvements identified in the Regional Transportation Plan, including arterial and freeway operation improvements.

(vi) Fringe and Corridor Parking Facilities Serving Multiple Occupancy Vehicle Programs or Transit Service

Submitted Plans and Measures:

1987 Carbon Monoxide Plan, measure 10  
1993 Carbon Monoxide Plan\*, measure 6  
Revised 1999 Serious Area Carbon Monoxide Plan, measure 53  
2003 Carbon Monoxide Maintenance Plan  
2013 Carbon Monoxide Maintenance Plan\*

1987 Ozone Plan\*, measure 10  
1993 Ozone Plan\*, measure 6  
One-Hour Ozone Maintenance Plan  
Eight-Hour Ozone Plan  
Eight-Hour Ozone Maintenance Plan\*

1988 PM-10 Plan, measure 25  
1991 PM-10 Plan with 1993 Revisions, measure 25  
Revised 1999 Serious Area PM-10 Plan, measure 74  
2012 Five Percent Plan for PM-10\*

\* = EPA approval pending

Measure Status:

The 1987 CO and Ozone Plans contain commitments from many jurisdictions agreeing to assist and cooperate in the location of park-and-ride lots. Similarly, in the 1993 CO and Ozone Plans, State and several local jurisdictions committed to



promote and expand park-and-ride lots and to seek out agreements with owners of major facilities such as shopping centers and institutions for the placement of park-and-ride lots.

The commitments from the State and local governments for the Serious Area CO and PM-10 plans include measures in which the RPTA will continue to work with member jurisdictions, private entities, and employers in the development, design, and implementation of new park-and-ride facilities.

A large number of park-and-ride lots are already operational in the Maricopa County area. There are approximately 15 transit centers and 48 park-and-ride facilities that support public transit. The RPTA works with employers and Transportation Management Associations to promote park-and-ride lots as a means to encourage ridesharing and use of public transit.

In addition, implementation of park-and-ride lots continues to occur beyond commitments made in the air quality plans. In January 2001, MAG completed the MAG Park and Ride Site Selection Study to identify a regional system of park-and-ride lots to support the regional express bus system, carpooling, and vanpooling. The recommended system included ten sites for near-term development and ten sites for long-term development. Additional recommendations addressed design guidelines and criteria for lot development, a management and operations plan for the lots, and programming and implementation strategies.

Impact of TIP and RTP:

The FY 2014-2018 MAG Transportation Improvement Program has programmed \$17.7 million for the implementation of four park-and-ride lots. In support of park-and-ride facilities, Chapter 10 of the Regional Transportation Plan provides for continued consideration of public transit, including planned bus facilities and service improvements.

(vii) Programs to Limit or Restrict Vehicle Use in Downtown Areas or Other Areas of Emission Concentrations, Particularly During Periods of Peak Use

Submitted Plans and Measures:

1987 Carbon Monoxide Plan, measure 23  
1993 Carbon Monoxide Plan\*, measures 7a and 7b

1987 Ozone Plan\*, measure 23  
1993 Ozone Plan\*, measures 7a and 7b

1988 PM-10 Plan, measure 38

\* = EPA approval pending

Measure Status:

In the 1987 CO Plan, 1988 PM-10 Plan, and MAG 1993 CO and Ozone Plans, several jurisdictions in the MAG region indicated they would agree to consider the implementation of truck restrictions during peak periods. In the 1993 CO Plan, a jurisdiction indicated that it restricted truck loading operations on downtown streets during peak hours would continue to enforce its existing restrictions on deliveries into the downtown area during peak hours (7:00 to 9:00 am, and 4:00 to 6:00 pm). Also, another jurisdiction indicated that it currently has an ordinance in place to restrict truck deliveries by place. There are approximately 16 miles of city streets with truck use restrictions in cities in Maricopa County.

Impact of TIP and RTP:

The construction of transportation facilities and provisions of transportation services which are programmed in the FY 2014-2018 MAG Transportation Improvement Program will not affect the schedule or effectiveness of this measure. Chapters 17 and 18 of the Regional Transportation Plan provide for continued consideration of Systems Management and Operations and Demand Management, respectively.

(viii) Programs for the Provision of All Forms of High-Occupancy, Shared Ride Services

Submitted Plans and Measures:

1987 Carbon Monoxide Plan, measures 6 and 11  
1993 Carbon Monoxide Plan\*, measures 8a, 8b, and 8c  
1993 Carbon Monoxide Plan Addendum\*, measure II-9  
Revised 1999 Serious Area Carbon Monoxide Plan, measures 39 and 51  
2003 Carbon Monoxide Maintenance Plan  
2013 Carbon Monoxide Maintenance Plan\*

1987 Ozone Plan\*, measures 6 and 11  
1993 Ozone Plan\*, measures 8a, 8b, and 8c  
1993 Ozone Plan Addendum\*, measure II-9  
One-Hour Ozone Maintenance Plan  
Eight-Hour Ozone Plan  
Eight-Hour Ozone Maintenance Plan\*

1988 PM-10 Plan, measures 21 and 26  
Revised 1999 Serious Area PM-10 Plan, measures 57 and 72  
2012 Five Percent Plan for PM-10\*

\* = EPA approval pending

Measure Status:

The MAG 1987 CO Plan and the MAG 1993 CO and Ozone Plans contain commitments requiring the expansion of the MAG Regional Rideshare Program, Park-and-Ride Programs, and Financial Incentives Including Zero Bus Fares. Several jurisdictions indicated that park-and-ride lots would be coordinated with the Arizona Department of Transportation, Regional Public Transportation Authority, and local businesses. The 1993 CO Plan Addendum includes a measure to pay for the administrative cost associated with the public transportation subsidy program for state employees. A description of Park-and-Ride Programs are reviewed in Transportation Control Measure number “vi”. A description of each measure is provided below.

Ridesharing programs in the Maricopa County area include the Regional Rideshare and Telework Program and Travel Reduction Program. The Regional Rideshare and Telework Program, conducted by Valley Metro/Regional Public Transportation Authority, maintains an internet-based service for instant carpool matching for the general public and for employers required to participate in the Trip Reduction Program. In addition, the Regional Rideshare and Telework Program emphasizes the need to reduce emissions through using alternative transportation modes and alternative work schedules.

The commitments from State and local governments for the Revised Serious Area CO and PM-10 Plans include measures supporting preferential parking for carpools and vanpools and encouraging the use of vanpooling.

MAG increased the annual allocation of federal funding for the program from \$250,000 in FY 1988 to \$420,000 in FY 1991, and to \$460,000 annually beginning in FY 1993. Beginning in FY 2000, an additional \$200,000 was added for expansion of the Regional Rideshare Program. RPTA has also expanded program marketing to employers as part of the existing Trip Reduction Program administered by Maricopa County. This involves organizations with 50 or more employees or students, affecting an estimated 1,170 companies and 3,013 sites in FY 2012 (MCAQD, 2012c). The RPTA also provides assistance to five Transportation Coordinators Associations operating in the region. In addition, Maricopa County has reported that approximately 41 employers in the Trip Reduction Program were subsidizing employee participation in vanpool programs for the year ending September 2012.

As of July 2013, the ADOA provided a 50 percent public transit subsidy to approximately 6,282 state employees who participated in the Platinum Plus Bus Card Program. In addition, through the Travel Reduction Program, the Arizona Department of Administration encourages all non-university state employees in Maricopa County to use carpools, vanpools, public transit, and alternative work schedules.

Impact of TIP and RTP:

The FY 2014-2018 MAG Transportation Improvement Program provides federal Congestion Mitigation and Air Quality Improvement (CMAQ) funding for implementation of the Regional Rideshare and Telework Program and the Travel Reduction Program. An amount of \$660,000 is programmed for the Regional Rideshare and Telework Program in FY 2014-2017. In addition, FY 2018 includes a lump sum for MAG Air Quality and Travel Demand Management Programs. The Travel Reduction Program is programmed at \$135,000 annually in the TIP. In addition, the TIP includes \$10.5 million to provide capital funding for vanpooling. Ride sharing is promoted by the provision of HOV lanes, implemented through the TIP. Chapter 18 of the Regional Transportation Plan provides for continued consideration of demand management programs.

(ix) Programs to Limit Portions of Road Surfaces or Certain Sections of the Metropolitan Area to the Use of Non-Motorized Vehicles or Pedestrian Use, Both as to Time and Place

Submitted Plans and Measures:

1987 Carbon Monoxide Plan, measure 42  
1993 Carbon Monoxide Plan\*, measure 9  
Revised 1999 Serious Area Carbon Monoxide Plan, measure 47  
2003 Carbon Monoxide Maintenance Plan  
2013 Carbon Monoxide Maintenance Plan\*

1987 Ozone Plan\*, measure 42  
1993 Ozone Plan\*, measure 9  
One-Hour Ozone Maintenance Plan  
Eight-Hour Ozone Plan  
Eight-Hour Ozone Maintenance Plan\*

1988 PM-10 Plan, measure 55  
Revised 1999 Serious Area PM-10 Plan, measure 65  
2012 Five Percent Plan for PM-10\*

\* = EPA approval pending

Measure Status:

The 1987 CO and Ozone Plan as well as the 1993 CO Plan indicated that pedestrian malls were being considered in the downtown plans for various cities and towns in the MAG area. Auto free zones and pedestrian malls can be used to reduce traffic congestion and air pollution on a localized basis. The successful

establishment of auto free zones and pedestrian malls is dependent upon high transit accessibility, good circulation design of adjacent arterials, and parking management.

The commitments from the state and local governments for the Revised Serious Area CO and PM-10 Plans include strengthening of initiatives to encourage pedestrian travel. Several jurisdictions have supported this measure through: linkage of activity centers with sidewalks; establishing pedestrian routes in residential areas, and creating links between subdivisions and commercial development.

The MAG Regional Off-Street System (ROSS) Plan was adopted by the MAG Regional Council in February 2001. The ROSS Plan provides guidance to MAG member agencies in creating an off-street non-motorized transportation system utilizing an extensive number of canal banks, utility line easements, and flood control channels.

In 2007, MAG developed the MAG Regional Bikeway Master Plan, which incorporates a 1999 MAG Regional Bicycle Plan, Alternative Solutions to Pedestrian Mid-block Crossings at Canals, and the 2001 ROSS Plan. With these planning efforts, many improvements have taken place beyond commitments made in air quality plans.

Impact of TIP and RTP:

The construction of transportation facilities and provisions of transportation services which are programmed in the FY 2014-2018 MAG Transportation Improvement Program will not affect the schedule or effectiveness of this measure. Chapter 12 of the Regional Transportation Plan, Bicycles and Pedestrians, provides for continued consideration of this measure.

(x) Programs for Secure Bicycle Storage Facilities and Other Facilities Including Bicycle Lanes, for the Convenience and Protection of Bicyclists, in Both Public and Private Areas

Submitted Plans and Measures:

1987 Carbon Monoxide Plan, measures 27 and 28  
 1993 Carbon Monoxide Plan\*, measures 10a and 10b  
 1993 Carbon Monoxide Plan Addendum\*, measure II-7  
 Revised 1999 Serious Area Carbon Monoxide Plan, measures 43 and 44  
 2003 Carbon Monoxide Maintenance Plan  
 2013 Carbon Monoxide Maintenance Plan\*

1987 Ozone Plan\*, measures 27 and 28  
 1993 Ozone Plan\*, measures 10a and 10b  
 1993 Ozone Plan Addendum\*, measure II-7  
 One-Hour Ozone Maintenance Plan  
 Eight-Hour Ozone Plan  
 Eight-Hour Ozone Maintenance Plan\*  
  
 1988 PM-10 Plan, measures 42 and 43  
 1991 PM-10 Plan with 1993 Revisions, measures 42 and 43  
 Revised 1999 Serious Area PM-10 Plan, measures 61 and 62  
 2012 Five Percent Plan for PM-10\*

\* = EPA approval pending

Measure Status:

In the 1993 CO and Ozone Plans, a number of jurisdictions indicated a commitment to improve bicycle facilities through the construction of additional miles of bike paths, striping of bike lanes on arterial and collector streets, and installation of additional bike racks and lockers to encourage bicycle use.

The commitments from the state and local governments for the Serious Area CO and PM-10 Plans include initiatives by most cities and towns in the region to encourage bicycle travel and develop bicycle travel facilities. Several jurisdictions indicated that bicycle travel would be encouraged through establishing bike lanes with new road development and by signing and striping bikeway routes along arterials, collectors, and local routes, by promoting bicycle use newsletters and Bike-to-Work Weeks, by encouraging private developers and businesses to include bike racks, lockers, and showers at work sites and other facilities.

The general level of planning and commitment for encouraging bicycle use and providing bicycle support facilities has increased substantially beyond the commitments made in the air quality plans. Phoenix, for example, has expanded its bikeway system to approximately 500 miles in 2007.

At the regional level, MAG established a Regional Bicycle Task Force in 1990. This task force guided the development of the Regional Bicycle Plan, which was adopted as part of the MAG Long Range Regional Transportation Plan in July 1992. The *MAG Regional Bicycle Plan* was updated in 1999. Creating a regional off-street multi-use path/trail plan was identified as an important future planning activity during the Regional Bicycle Plan Update in 1999. The MAG Regional Off-Street System (ROSS) Plan reveals a region-wide system of off-street paths/trails for non-motorized transportation along existing rights-of-ways and easements, such as canal banks, utility line easements and flood control channels. These types of rights-of-way and easements intersect numerous arterial streets where local daily



destinations are typically located. The goal of the ROSS Plan is to help make bicycling and walking viable options for daily travel trips using off-street opportunities.

To further encourage safe bicycling, the Regional Bicycle Task Force oversees the update of the Regional Bikeways Map. Updated in alternating years, the map shows existing, locally-designated bicycling facilities, and is provided for free distribution. The first map was created in 1994, and updated in 1997. Several hundred thousand maps have been distributed. The map includes bicycle lanes and paths, designated bicycle routes on roadways, popular undesignated routes, and off-street transportation trails.

In 2012, the MAG Bicycle and Pedestrian Committee completed an update of the Regional Bikeways Map. Of the approximately 23,000 miles of roadway in the region, the map shows 1,541 miles of bicycle lanes, 532 miles of bicycle routes, 342 miles of paved shoulders, and 900 miles of paved and unpaved transportation trails. The *MAG Regional Bicycle Plan* also encourages the development of bicycle parking and shower facilities at appropriate daily trip destinations.

Impact of TIP and RTP:

The implementation of the FY 2014-2018 MAG Transportation Improvement Program will directly support the goal of increased bicycle use. Funding for bicycle and multiuse path projects totals \$18.0 million in FY 2014 and \$47.8 million over the period of the TIP. Specific projects to be funded each year are recommended to the MAG Management Committee by the MAG Bicycle and Pedestrian Committee, for approval by the MAG Regional Council.

In addition, the provision of new bicycle lanes or facilities is often included as part of various road improvement projects, rather than being implemented and programmed separately as a bicycle project. Chapter 12 of the Regional Transportation Plan provides an overview of bicycle transportation and the continued development of bicycle facilities.

(xi) Programs to Control Extended Idling of Vehicles

Submitted Plans and Measures:

- 1987 Carbon Monoxide Plan, measure 41
- 1993 Carbon Monoxide Plan\*, measure 11
- Revised 1999 Serious Area Carbon Monoxide Plan, measure 33
- 2003 Carbon Monoxide Maintenance Plan
- 2013 Carbon Monoxide Maintenance Plan\*

1987 Ozone Plan\*, measure 41

- 1993 Ozone Plan\*, measure 11
- One-Hour Ozone Maintenance Plan
- Eight-Hour Ozone Plan
- Eight-Hour Ozone Maintenance Plan\*

- 1988 PM-10 Plan, measure 54
- 1991 PM-10 Plan with 1993 Revisions, measure 54
- Revised 1999 Serious Area PM-10 Plan, measure 34
- 2012 Five Percent Plan for PM-10\*

\* = EPA approval pending

Measure Status:

In the MAG 1993 CO Plan, Carefree and Tolleson indicated that they would take steps to address emissions from idling at drive-up window facilities. Information provided to MAG by Sierra Research, a leading consultant in the field of vehicular emissions, indicates that vehicles with catalytic converters may produce more emissions during engine start-up than engine idling for brief periods. The Sierra Research report concluded that banning the use of drive-up window facilities would not significantly increase or decrease emissions of CO or oxides of nitrogen, and would potentially increase emissions of volatile organic compounds. It is important to note that the report was completed in 1991, based upon emission data from vehicles in Southern California.

The commitments from the state and local governments for the Serious Area CO and PM-10 Plans include an initiative by RPTA to follow guidelines developed by that agency in June 1996 to reduce idling of engines. The guideline specifies that, for temperatures below 90 degrees Fahrenheit and over three minutes layover, the operator should turn the engine off. If the vehicle is located within 100 yards of any residence, for temperatures below 90 degrees Fahrenheit, the engine is to be turned off regardless of layover time. Further, Valley Metro/RPTA will continue to work with member jurisdictions to promote environmentally sensitive transit operations practices and policies.

Impact of TIP and RTP:

The construction of transportation facilities and provisions of transportation services which are programmed in the FY 2014-2018 MAG Transportation Improvement Program will not affect the schedule or effectiveness of this measure. In addition, the Regional Transportation Plan will not affect this measure.

(xii) Programs to Reduce Motor Vehicle Emissions, Consistent with Title II, Which Are Caused by Extreme Cold Start Conditions

This measure is not applicable in the MAG region.

(xiii) Employer-Sponsored Programs to Permit Flexible Work Schedules

Submitted Plans and Measures:

1987 Carbon Monoxide Plan, measures 35 and 36  
 1993 Carbon Monoxide Plan\*, measures 13a, 13b, 13c, and 13d  
 1993 Carbon Monoxide Plan Addendum\*, measure I-12  
 Revised 1999 Serious Area Carbon Monoxide Plan\*, measure 45  
 2003 Carbon Monoxide Maintenance Plan  
 2013 Carbon Monoxide Maintenance Plan\*

1978 Ozone Plan, measure "Modified Work Schedules"  
 1987 Ozone Plan\*, measures 35 and 36  
 1993 Ozone Plan\*, measures 13a, 13b, 13c, and 13d  
 One-Hour Ozone Maintenance Plan  
 Eight-Hour Ozone Plan  
 Eight-Hour Ozone Maintenance Plan\*

1988 PM-10 Plan, measures 48 and 49  
 1991 PM-10 Plan with 1993 Revisions, measure 48  
 Revised 1999 Serious Area PM-10 Plan, measure 63  
 2012 Five Percent Plan for PM-10\*

\* = EPA approval pending

Measure Status:

The 1978 Ozone Plan indicated that modified work schedules were to be implemented on a voluntary basis with emphasis on the winter period of maximum temperature inversions. The effect of this measure in reducing ozone was not calculated in the 1978 Ozone Plan.

In the 1987 CO and Ozone Plans, a number of jurisdictions supported the use of alternative work hours and work weeks for their employees. Since 1987, this measure has been implemented on a formal basis as mandated by Arizona legislation. SB 1360 established requirements for the use of adjusted work hours by at least 85 percent of State employees with offices located in a nonattainment area. Beginning in 1987, this requirement became applicable for the period between October 1 and March 31 of each year. Beginning in 1989, the requirement

was also applied to county employees and to the employees of cities and towns which have a population of 50,000 or more. The 1987 legislation also required businesses with 500 or more employees at one site within a nonattainment area to prepare an adjusted work hour proposal for submission to ADEQ by October 1 of each year.

In the MAG 1993 CO Plan and 1993 Ozone Plan, numerous MAG member agencies indicated that this measure was ongoing through the use of compressed or staggered work schedules to lessen the number of commuting trips. Also, several agencies indicated that telecommuting and teleconferencing options would be investigated and/or expanded. MAG initiated a telecommuting and teleconferencing program for its member agencies, with planning for the program initiated in FY 1998.

As specified in the 1993 CO Plan Addendum, measure I-12 "Air Pollution Emergency", enacted by Arizona HB 2001 in November 1993, authorized the Governor of Arizona to declare air emergencies on days when the National Ambient Air Quality Standards are likely to be exceeded. The Governor will prohibit, restrict, or condition the employment schedules for employees of the state and its political subdivisions (includes the county and local governments) in order to reduce vehicle emissions during air pollution emergencies. The Governor has developed a plan for implementation of this measure. Under these provisions, state employees were sent home early due to elevated carbon monoxide concentrations on one occasion in late 1994.

In 1996, the Governor issued a proclamation which requires the cities, towns and county meet a 75 percent employee compliance of three options to reduce hydrocarbon emissions from mobile sources during June 1 to September 30, 1996. The options are: work schedules that avoid workday start and ending in the peak traffic hours; compressed work week schedules; travel to and from work by alternate mode including bus, carpool, vanpool, bicycle, or walking.

This measure also responds to Clean Air Act Section 108(f)(1)(B): Additional methods or strategies that will contribute to the reduction of mobile source related pollutants during periods in which any primary air quality standard will be exceeded and during episodes for which an air pollution alert, warning, or emergency has been declared.

The commitments from the state and local governments for the Serious Area CO and PM-10 Plans include initiatives supporting alternative work schedules and the use of off-peak driving, ridesharing, and the use of transit. As part of the Trip Reduction Program, Valley Metro/RPTA facilitates formal training on compressed or alternative work schedules and provides onsite assistance to individual employers on an as-needed basis.

Impact of TIP and RTP:

The FY 2014-2017 MAG Transportation Improvement Program contains funding for Trip Reduction Program and Regional Rideshare and Telework Program in the amount of \$6.8 million. In addition, FY 2018 includes a lump sum for MAG Air Quality and Travel Demand Management Programs. The construction of other transportation or related facilities and other provisions of transportation services that are programmed in the TIP will not affect the schedule or effectiveness of this measure. Chapter 18 of the Regional Transportation Plan includes a description of demand management programs in support of this measure.

(xiv) Programs and Ordinances to Facilitate Non-Automobile Travel, Provision and Utilization of Mass Transit, and to Generally Reduce the Need for Single-Occupant Vehicle Travel, as Part of Transportation Planning and Development Efforts of a Locality, Including Programs and Ordinances Applicable to New Shopping Centers, Special Events, and Other Centers of Vehicle Activity

Submitted Plans and Measures:

1987 Carbon Monoxide Plan, measures 8, 9, 39, and 40  
1993 Carbon Monoxide Plan\*, measures 14a, 14b, 14c, and 14d  
Revised 1999 Serious Area Carbon Monoxide Plan, measures 46, 50, and 54  
2003 Carbon Monoxide Maintenance Plan  
2013 Carbon Monoxide Maintenance Plan\*

1987 Ozone Plan\*, measures 8, 9, 39, and 40  
1993 Ozone Plan\*, measures 14a, 14b, 14c, and 14d  
One-Hour Ozone Maintenance Plan  
Eight-Hour Ozone Plan  
Eight-Hour Ozone Maintenance Plan\*

1988 PM-10 Plan, measures 23, 24, 52, and 53  
1991 PM-10 Plan with 1993 Revisions, measures 23 and 24  
Revised 1999 Serious Area PM-10 Plan, measures 64, 68, and 75  
2012 Five Percent Plan for PM-10\*

\* = EPA approval pending

Measure Status:

In the MAG 1993 CO Plan, numerous MAG member jurisdictions indicated that new developments are encouraged through their General Plan to support alternative modes of transportation. In 1995, the Maricopa Association of Governments

completed an Urban Form Study which examines the transportation and air quality impacts of land use development within the region.

Arizona legislation enacted in 1987 requires every State agency, board, and commission to submit an air quality impact report to ADEQ on any State-funded transportation related project that it determines may impact air quality. In 1988, the Arizona Legislature required Maricopa County to establish a Voluntary No Drive Days Program. The Clean Air Campaign urges the public not to drive on a given day each week, as well as on alert days when severe pollution concentrations are expected. The program is in effect from October through March when atmospheric conditions may lead to increased carbon monoxide levels.

The commitments from the State and local governments for the Serious Area CO and PM-10 plans include initiatives from a number of municipalities in support of Land Use/Development Alternatives. For example, some municipalities implement general land use planning and development administration to improve the quality of life, promote land use compatibility, reduce infrastructure costs, promote accessibility, and reduce traffic congestion. Promotion of air quality is an integral part of these efforts and a natural by-product. Another example of general plan support of this measure is through the promotion of land development that integrates multiple modes of transportation, including transit, pedestrians, and bicycles, and the creation of ordinances, policies, or design guidelines that encourage mixed-use development and promote non-polluting modes of travel into urban design.

Impact of TIP and RTP:

The construction of transportation facilities and provision of transportation services as programmed in the FY 2014-2018 MAG Transportation Improvement Program will not affect the schedule or effectiveness of this measure.

(xv) Programs for New Construction and Major Reconstruction of Paths, Tracks or Areas Solely for Use by Pedestrian or Other Non-motorized Means of Transportation When Economically Feasible and in the Public Interest

Submitted Plans and Measures:

1987 Carbon Monoxide Plan, measures 29 and 30  
1993 Carbon Monoxide Plan\*, measures 15a and 15b  
1993 Carbon Monoxide Plan Addendum\*, measure II-7  
Revised 1999 Serious Area Carbon Monoxide Plan, measures 43 and 44  
2003 Carbon Monoxide Maintenance Plan  
2013 Carbon Monoxide Maintenance Plan\*



1987 Ozone Plan, measures 29 and 30  
1993 Ozone Plan\*, measures 15a and 15b  
1993 Ozone Plan Addendum\*, measure II-7  
One-Hour Ozone Maintenance Plan  
Eight-Hour Ozone Plan  
Eight-Hour Ozone Maintenance Plan\*

1988 PM-10 Plan, measures 44 and 45  
1991 PM-10 Plan with 1993 Revisions, measures 44 and 45  
Revised 1999 Serious Area PM-10 Plan, measures 61 and 62  
2012 Five Percent Plan for PM-10\*

\* = EPA approval pending

Measure Status:

In the 1987 CO and Ozone Plans and the 1993 CO Plan, a number of jurisdictions indicated that encouragement of pedestrian travel is an ongoing measure. In November 1993, House Bill 2001 authorized ADOT to make grants from its portion of the State Air Quality Fund for intermodal transportation, pedestrian, and bicycle projects and activities.

The commitments from the state and local governments for the Serious Area CO and PM-10 plans include initiatives by most cities and towns in the region to encourage bicycle travel and development of bicycle travel facilities. Several municipalities have encouraging the construction of bike lanes and the installation of bike facilities at activity centers. Demonstration programs will also be explored to promote bicycle use. A pilot program to provide free bikes (Purple People Movers) was identified for use in the downtown area. Over 100 purple bikes and 30 purple bike racks were made available. After implementation of this demonstration project, the Program was ended.

Several local governments have made bicycle and pedestrian improvements beyond commitments made in air quality plans. As an example of the improvements made a few are listed here. Phoenix is developing a Bikeway Master Plan and is painting shared lane markings on streets to create bike boulevards. In addition, Phoenix has developed a “bike sharing” program to encourage bicycle travel in proximity to light rail. Mesa has finished a Bikeway Masterplan and has completed 17 miles of pathway along the Consolidated Canal. Also, Scottsdale completed construction on the Upper Camelback Wash along the Arizona Canal that connects 22 miles of pathway.

Impact of TIP and RTP:

The provision of new sidewalks (and supporting amenities such as lighting and landscaping) is often included as part of various road improvement projects, rather than being implemented and programmed separately. It should also be noted that sidewalk provisions are often required of the private sector as a condition for property development. The FY 2014-2018 MAG Transportation Improvement Program contains 23 pedestrian projects. Funding for pedestrian projects totals \$18.8 million in FY 2014 and \$24.5 million over the period of the TIP. Chapter 12 of the Regional Transportation Plan provides an overview on pedestrian travel in support of these measures.

(xvi) Program to Encourage Voluntary Removal from Use and the Marketplace of Pre-1980 Model Year Light Duty Vehicles and Pre-1980 Model Light Duty Trucks

Submitted Plans and Measures:

Revised 1999 Serious Area Carbon Monoxide Plan, measures 8 and 22  
2003 Carbon Monoxide Maintenance Plan  
2013 Carbon Monoxide Maintenance Plan\*

One-Hour Ozone Maintenance Plan  
Eight-Hour Ozone Plan  
Eight-Hour Ozone Maintenance Plan\*

Revised 1999 Serious Area PM-10 Plan, measures 8 and 23  
2012 Five Percent Plan for PM-10\*

\*= EPA approval pending

Measure Status:

This Transportation Control Measure is a committed measure in the Serious Area CO and PM-10 Plans. This measure includes the Voluntary Vehicle Repair and Retrofit Program and the Voluntary Gasoline Vehicle Retirement Program/Maricopa County Travel Reduction Program as described below.

Voluntary Vehicle Repair and Retrofit Program

According to the Arizona Revised Statutes 49-474.03, Maricopa County is required to operate and administer a Voluntary Vehicle Repair and Retrofit Program. Beginning in January 1999, the program is designed to provide for real and quantifiable emissions reductions based on actual emissions testing performed on the vehicle before repair or retrofit. The County is also required to coordinate the

program with the Arizona Department of Environmental Quality and Arizona Department of Transportation.

A vehicle owner may participate in the program if all of the following criteria are met:

- The owner is willing to participate in the program.
- The vehicle is functionally operational.
- The vehicle is titled in this state, has taken the emissions inspection test, has been registered during the immediately preceding twelve months and has not been unregistered for more than sixty days.
- The vehicle is at least twelve years older than the current calendar year.
- The vehicle is required to take the emissions inspection test and the vehicle fails the emissions test in the emissions inspection results portion of the test. The vehicle owner is required to apply to the program not more that sixty days after failing the test.
- The emissions control system has not been tampered with.
- The emissions control system has not been removed or disabled, in whole or in part.
- The vehicle is taken to a participating repair facility. Any repairs performed at an unauthorized repair facility are not eligible for payment.
- Participation in the program is limited to one vehicle per owner.
- Motor homes, motorcycles, salvage vehicles and fleet vehicles are not eligible to participate in the program.

In addition, the Voluntary Vehicle Repair and Retrofit Program provides that:

- Vehicle owners who qualify for the repair and retrofit program pay the first \$150 as a copayment.
- Vehicles that require more than \$700 in repair costs are not eligible unless the vehicle owner chooses to pay additional costs.
- A vehicle that is able to accept a retrofit kit is required to have the retrofit kit installed. A vehicle that requires more than \$800 in aggregated retrofit parts and labor costs is not eligible for the program unless the vehicle owner pays the additional costs.

From its introduction in January 1999 through June 2010, the Voluntary Vehicle Repair and Retrofit Program has helped over 11,164 vehicles meet Arizona emissions standards, resulting in the reduction of over 1,901 metric tons of pollution. According to Maricopa County, the program is very cost effective. For the FY 2010 program, the cost to Maricopa County was \$1,643 per metric ton, annualized over two years. According to the Maricopa County Voluntary Vehicle Repair and Retrofit Program Annual Report, in FY 2010 the program resulted in a reduction of 68.9 metric tons per year in hydrocarbons, carbon monoxide, and nitrogen oxides.

The Voluntary Vehicle Repair and Retrofit Program was grant funded by the State of Arizona from July 2000 through June 2009. According to the Maricopa County Air Quality Department, Program repair services were suspended on June 27, 2009 when FY 2009 funding was exhausted. Due to budget constraints, the State eliminated program funding for FY 2010. Repair services were resumed on November 20, 2009, when U.S. Department of Energy, Energy Efficiency and Conservation Block Grant funding became available via the American Recovery and Reinvestment Act of 2009. The program is currently suspended. The Voluntary Vehicle Repair and Retrofit Program is acknowledged as a voluntary program with no emissions credits taken for regional maintenance modeling.

Voluntary Gasoline Vehicle Retirement Program/Maricopa County Travel Reduction Program

This measure was also included as part of an initiative entitled “Voluntary Gasoline Vehicle Retirement Program/Maricopa County Travel Reduction Program”. Maricopa County indicates that the implementation of this measure involves a program to purchase and retire vehicles that produce excessive emissions, particularly pre-1980 model year light duty automobiles and trucks. Maricopa County revised its Trip Reduction Ordinance to include flexibility provisions, also called Equivalent Emission Reduction Credit, authorized under A.R.S. Section 49-588 which includes voluntary vehicle trade-outs. This revision will allow trade-outs completed after October 16, 1996 to be used to achieve the emission reduction goals established under the ordinance.

Impact of TIP and RTP:

The transportation projects in the FY 2014-2018 MAG Transportation Improvement Program and Regional Transportation Plan are not anticipated to impact the schedule or effectiveness of this measure.

## 6 TIP AND REGIONAL TRANSPORTATION PLAN CONFORMITY

The principal requirements of the federal transportation conformity rule for TIP and Regional Transportation Plan assessments are: (1) the TIP and Regional Transportation Plan (RTP) must pass an emissions budget test with a budget that has been found to be adequate or approved by EPA for transportation conformity purposes, or interim emissions tests; (2) the latest planning assumptions and emission models in force at the time the conformity analysis begins must be employed; (3) the TIP and RTP must provide for the timely implementation of transportation control measures (TCMs) specified in the applicable air quality implementation plans; and (4) consultation. Consultation generally occurs both at the beginning of the process of preparing the conformity analysis, on the proposed models, associated methods, and assumptions for the upcoming analysis and the projects to be assessed, and at the end of the process, on the draft conformity analysis report. The final determination of conformity for the TIP and Regional Transportation Plan is the responsibility of the Federal Highway Administration and the Federal Transit Administration.

The previous chapters and the appendices present the documentation for all of the requirements listed above for conformity determinations, except for the conformity test results. Prior chapters have also addressed the updated documentation required under the federal transportation conformity rule for the latest planning assumptions and the implementation of transportation control measures specified in the applicable air quality implementation plans. Consultation correspondence on the 2014 MAG Conformity Analysis is included in Appendix B. Appendix S includes the public hearing documentation, and the comments received and responses made as part of the public comment process are included in Appendix T.

This chapter presents the results of the conformity tests, satisfying the remaining requirement of the federal transportation conformity rule. Budget tests were performed for the Maricopa County nonattainment and maintenance areas, while build/no-build tests were performed for the Pinal County nonattainment areas. The results of the Maricopa and Pinal County conformity analyses are described in separate sections below.

### MARICOPA COUNTY NONATTAINMENT AND MAINTENANCE AREAS

For the Maricopa County nonattainment and maintenance areas, separate tests were conducted for carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides

(NOx), and particulate matter less than or equal to ten microns in diameter (PM-10). For each test, the required emissions estimates were developed using the transportation and emission modeling approaches required under the federal transportation conformity rule and summarized in Chapters 3 and 4. The applicable conformity tests were reviewed in Chapter 1. The results are summarized below, followed by a more detailed discussion of the findings for each pollutant. Table 11 and Figures 12 through 15 present results for CO, VOC, NOx, and PM-10, respectively, in metric tons per day for each of the analysis years tested.

For carbon monoxide, the applicable conformity test is the emissions budget test, using the 2015 conformity budget established in the MAG Carbon Monoxide Redesignation Request and Maintenance Plan. EPA approved the Carbon Monoxide Maintenance Plan and conformity budgets, effective April 8, 2005. The modeling results indicated that the CO emissions predicted for 2015, 2025, and 2035 are less than the 2015 emissions budget. The TIP and Regional Transportation Plan therefore satisfy the conformity emissions test for carbon monoxide. Table 12 also shows that the 2025 and 2035 CO emissions are less than the 2025 carbon monoxide budget of 559.4 metric tons per day established by the MAG 2013 Carbon Monoxide Maintenance Plan (MAG, 2013), but EPA has not yet approved this Plan or found the budget to be adequate.

For volatile organic compounds and nitrogen oxides for the eight-hour ozone standard, the applicable conformity test is the emissions budget test, using the 2008 conformity budgets for VOCs and NOx established in the MAG Eight-Hour Ozone Plan. On June 13, 2012, EPA approved the MAG Eight-Hour Ozone Plan including the emissions budgets, effective July 13, 2012. The modeling results indicated that the VOC emissions predicted for 2015, 2025, and 2035 in the 2008 eight-hour ozone nonattainment area are less than the 2008 VOC emissions budget. Also, the modeling results indicated that the NOx emissions predicted for 2015, 2025, and 2035 in the 2008 eight-hour ozone nonattainment area are less than the 2008 NOx emissions budget. The TIP and Regional Transportation Plan therefore satisfy the conformity emissions tests for eight-hour ozone. Table 12 also shows that the 2025 and 2035 emissions are less than the 2025 budgets of 43.8 metric tons per day for VOC and 101.8 metric tons per day for NOx. These budgets were established by the MAG 2009 Eight-Hour Ozone Maintenance Plan (MAG, 2009), but EPA has not yet approved this Plan or found the budgets to be adequate.

For PM-10, the applicable conformity test is the emissions budget test, using the 2006 emissions budget established in the Revised MAG 1999 Serious Area Particulate Plan for PM-10. On July 25, 2002, EPA approved the Revised MAG 1999 Serious Area Particulate Plan for PM-10 including the 2006 PM-10 motor vehicle emissions budget, effective August 26, 2002. The modeling results indicated that the PM-10 emissions predicted for 2015, 2025, and 2035 are less than the 2006 PM-10 emissions budget. On September 10, 2013, EPA advised that MAG should include in this conformity analysis the budgets from submitted plans so that an adequacy finding on a submitted SIP does not interfere with the conformity process. On December 5, 2013, EPA found the conformity budget in the MAG 2012 Five Percent Plan for PM-10 adequate for transportation conformity



purposes, effective December 20, 2013. Table 12 also shows that the 2015, 2025 and 2035 emissions are less than the new 2012 adequate budget of 54.9 metric tons per day for PM-10. The TIP and Regional Transportation Plan therefore satisfy the conformity tests for PM-10.

As all requirements of the federal conformity rule have been satisfied, a finding of conformity for the FY 2014-2018 MAG Transportation Improvement Program and 2035 MAG Regional Transportation Plan is supported.

Conformity Test Results for Carbon Monoxide

The conformity modeling results for carbon monoxide are presented in Table 11 and graphed in Figure 12. Emissions were calculated for the carbon monoxide nonattainment area for a 24-hour period based on episode day conditions for a Friday in December. The projected CO emissions for 2015, 2025, and 2035 are 534.4, 426.0, and 435.4 metric tons per day, respectively, which are less than the 2015 CO budget of 662.9 metric tons per day.

In addition, as presented in Table 12, the 2025 and 2035 CO emissions are less than the 2025 CO budget of 559.4 metric tons per day established in the MAG 2013 CO Maintenance Plan submitted to EPA in March 2013. However, as of the date this conformity analysis began, this new 2025 CO budget has not been found adequate or approved by EPA.

Since the projected carbon monoxide emissions for the TIP and Regional Transportation Plan are less than the approved 2015 budget in the MAG 2003 Carbon Monoxide Redesignation Request and Maintenance Plan, the results support a finding of conformity.

Conformity Test Results for Eight-Hour Ozone

The conformity modeling results for eight-hour ozone are presented in Table 11 and graphed in Figures 13 through 14. The volatile organic compound and nitrogen oxides emissions were calculated to reflect episode day conditions for a Thursday in June. Emissions were calculated for the new 2008 eight-hour ozone nonattainment area that became effective on April 30, 2012. The projected VOC emissions in 2015, 2025, and 2035 are 48.0, 35.6, and 32.2 metric tons per day, respectively, which are all less than the 2008 VOC budget of 67.9 metric tons per day and the projected NOx emissions in 2015, 2025, and 2035 are 94.6, 56.9, and 54.6 metric tons per day, respectively, which are all less than the 2008 NOx budget of 138.2 metric tons per day.

In addition, as presented in Table 12, the 2025 and 2035 emissions are less than the 2025 budgets of 43.8 metric tons per day for VOC and 101.8 metric tons per day of NOx established in the MAG Eight-Hour Ozone Maintenance Plan submitted to EPA in February 2009. However, as of the date this conformity analysis began, these new 2025 budgets have not been found adequate or approved by EPA.

Since the projected VOC and NOx emissions for the TIP and Regional Transportation Plan are less than the approved 2008 budgets in the MAG 2007 Eight-Hour Ozone Plan, the results support a finding of conformity.

Conformity Test Results for Particulate Matter

The conformity modeling results for PM-10 are listed in Table 11 and graphed in Figure 15. The PM-10 emissions were calculated for the PM-10 nonattainment area for an annual average day. The projected PM-10 emissions in 2015, 2025, and 2035 are 43.7, 45.4, and 50.1 metric tons per day, respectively, which are all less than the approved 2006 budget of 59.7 metric tons per day.

In addition, as presented in Table 12, the 2015, 2025 and 2035 emissions are less than the 2012 adequate budget of 54.9 metric tons per day for PM-10 established in the MAG 2012 Five Percent Plan for PM-10 submitted to EPA in May 2012. On December 5, 2013, EPA found the conformity budget in the MAG 2012 Five Percent Plan for PM-10 adequate for transportation conformity purposes, effective December 20, 2013.

Since the projected PM-10 emissions for the TIP and Regional Transportation Plan are less than the approved 2006 budget established in the Revised MAG 1999 Serious Area Particulate Plan for PM-10 and less than the adequate 2012 budget from the MAG 2012 Five Percent Plan for PM-10, the results support a finding of conformity.

TABLE 11.  
CONFORMITY BUDGET TEST RESULTS FOR CO, VOC, NOx, AND PM-10  
(METRIC TONS/DAY)  
MARICOPA COUNTY NONATTAINMENT AND MAINTENANCE AREAS

Pollutant	Carbon Monoxide <sup>a</sup>	Eight-Hour Ozone <sup>b</sup>		PM-10 <sup>c</sup>
Year	2015	2008 VOC	2008 NOx	2006
<i>Budget Test</i>	662.9	67.9	138.2	59.7
2015	534.4	48.0	94.6	43.7
2025	426.0	35.6	56.9	45.4
2035	435.4	32.2	54.6	50.1

**a** The Carbon Monoxide Maintenance Plan established a 2015 budget. The onroad mobile source emissions correspond to a Friday in December episode day conditions.

**b** The Eight-Hour Ozone Plan established 2008 budgets for volatile organic compounds (VOCs) and nitrogen oxides (NOx). The onroad mobile source emissions correspond to a Thursday in June episode day conditions.

**c** The Revised MAG1999 Serious Area Particulate Plan for PM-10 established a 2006 emissions budget corresponding to an average annual day.

TABLE 12.  
CONFORMITY TEST RESULTS USING SUBMITTED  
BUDGETS FOR CO, VOC, NOx, AND PM-10 FOR INFORMATION PURPOSES  
(METRIC TONS/DAY)  
MARICOPA COUNTY NONATTAINMENT AND MAINTENANCE AREAS

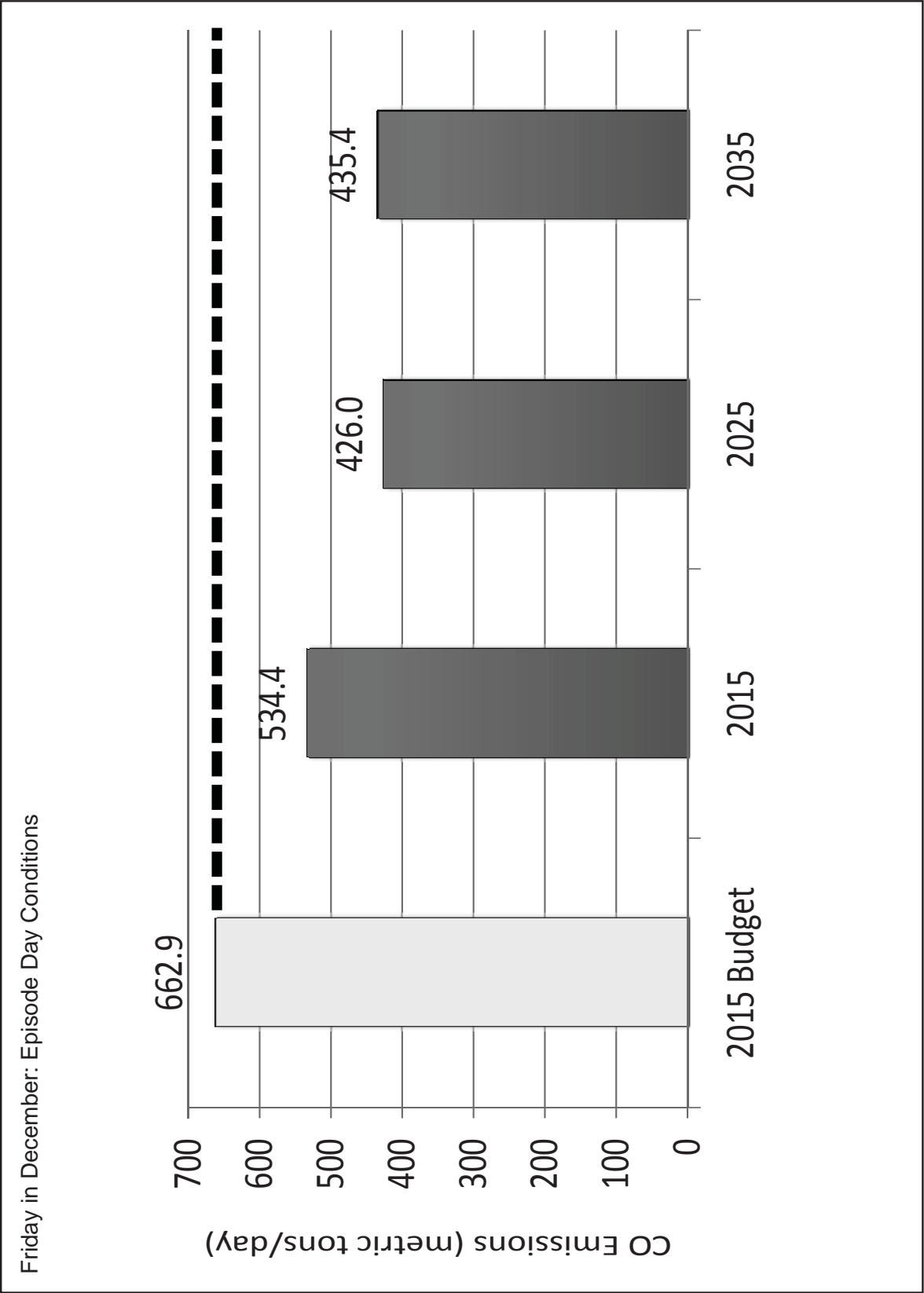
Pollutant	Carbon Monoxide	Eight-Hour Ozone		PM-10
Year	2025 <sup>a</sup>	2025 <sup>b</sup> VOC	2025 <sup>b</sup> NOx	2012 <sup>c</sup>
<i>Budget Test</i>	559.4	43.8	101.8	54.9
2015				43.7
2025	426.0	35.6	56.9	45.4
2035	435.4	32.2	54.6	50.1

**a** The submitted MAG 2013 Carbon Monoxide Maintenance established a 2025 budget of 559.4 metric tons per day. On September 10, 2013, EPA advised that MAG should include in this conformity analysis the budgets from submitted plans so that an adequacy finding on a submitted SIP does not interfere with the conformity process.

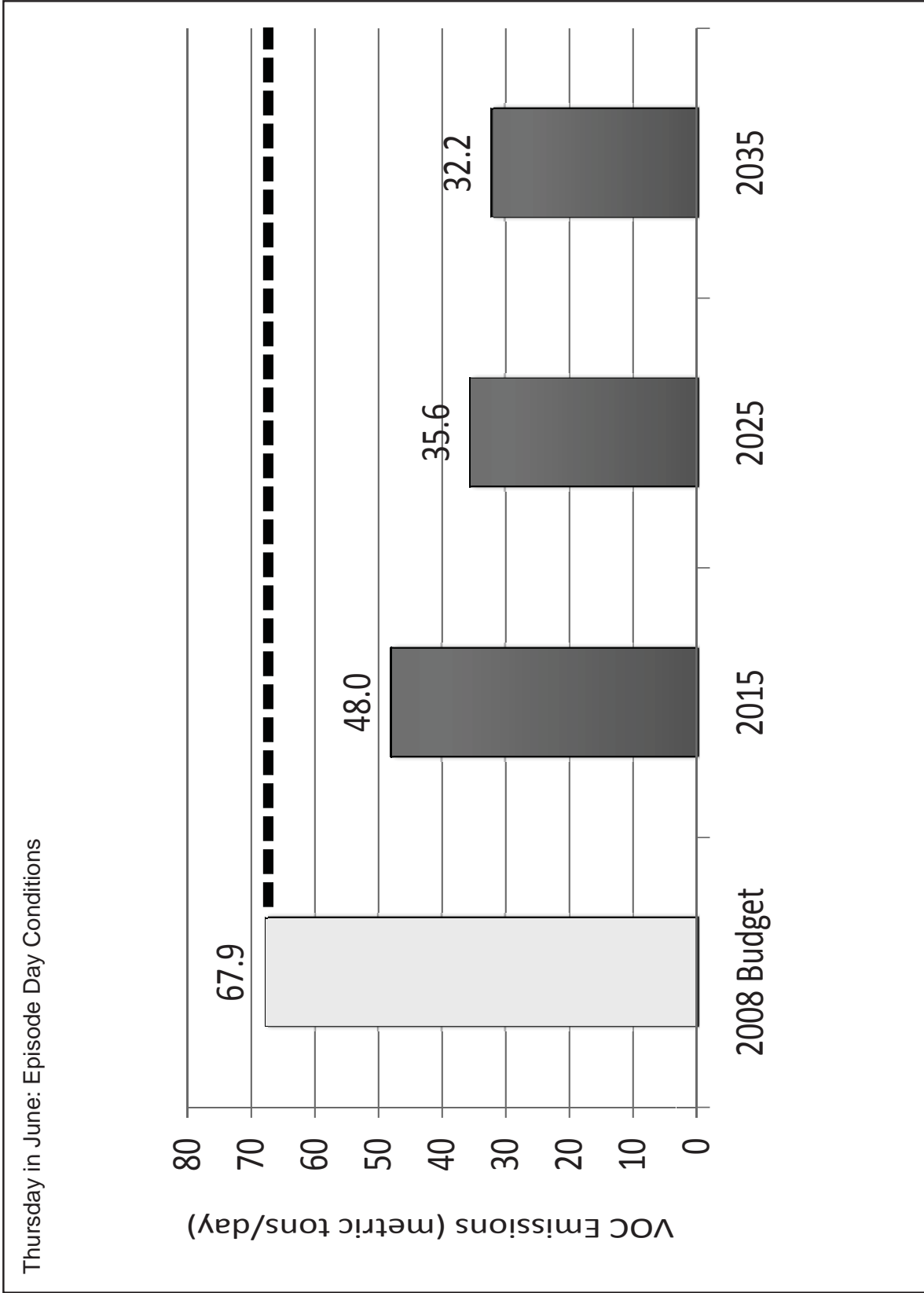
**b** The submitted MAG 2009 Eight-Hour Ozone Plan established a 2025 volatile organic compounds (VOCs) budget of 43.8 metric tons/day and a 2025 nitrogen oxides (NOx) budget of 101.8 metric tons/day. On September 10, 2013, EPA advised that MAG should include in this conformity analysis the budgets from submitted plans so that an adequacy finding on a submitted SIP does not interfere with the conformity process.

**c** The submitted MAG 2012 Five Percent Plan for PM-10 established a 2012 emissions budget of 54.9 metric tons/day. On September 10, 2013, EPA advised that MAG should include in this conformity analysis the budgets from submitted plans so that an adequacy finding on a submitted SIP does not interfere with the conformity process. On December 5, 2013, EPA found the conformity budget in the MAG 2012 Five Percent Plan for PM-10 adequate for transportation conformity purposes, effective December 20, 2013.

**Figure 12: Carbon Monoxide Results for Conformity Budget Test**  
Maricopa County Nonattainment and Maintenance Areas

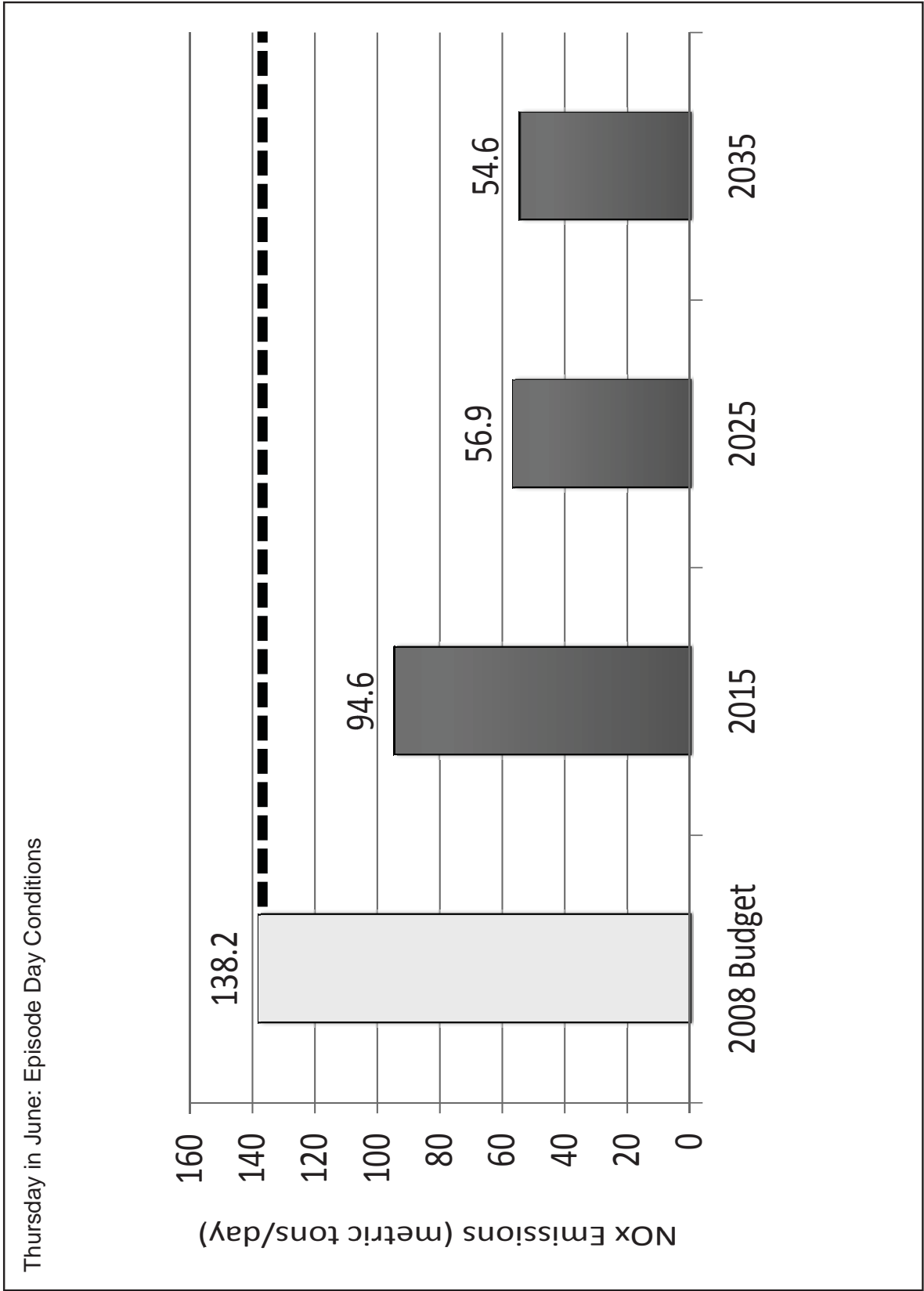


**Figure 13: Eight-Hour Ozone: Volatile Organic Compounds (VOC) Results for Conformity Budget Test**  
Maricopa County Nonattainment and Maintenance Areas

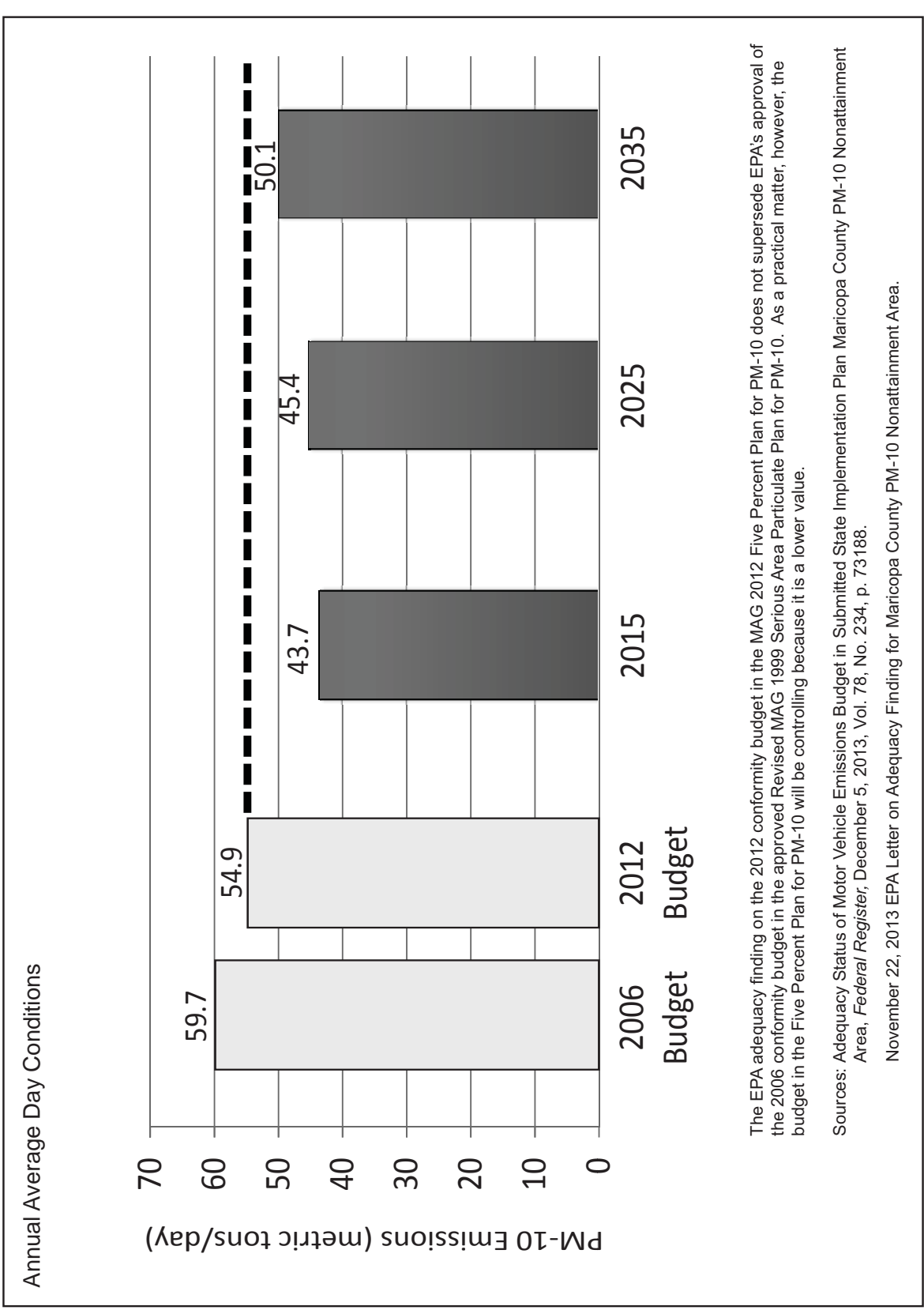




**Figure 14: Eight-Hour Ozone: Nitrogen Oxides (NOx) Results for Conformity Budget Test**  
Maricopa County Nonattainment and Maintenance Areas



**Figure 15: PM-10 Results for Conformity Budget Test**  
Maricopa County Nonattainment and Maintenance Areas



**PINAL COUNTY NONATTAINMENT AREAS**

For the Pinal County nonattainment areas, build/no-build tests were conducted for particulate matter (PM-10) for the PM-10 nonattainment area and particulate matter (PM-2.5) and nitrogen oxides (NOx) for the PM-2.5 nonattainment area. For each test, the required emissions estimates were developed using the transportation and emission modeling approaches required under the federal transportation conformity rule and summarized in Chapters 3 and 4. The applicable conformity tests were reviewed in Chapter 1. The results are summarized below. Table 13 and Figures 16 through 18 present the conformity results for the PM-10 and PM-2.5 nonattainment areas for each of the analysis years tested.

Conformity Test Results for the Pinal PM-10 Nonattainment Area

The conformity modeling results for PM-10 are listed in Table 13 and graphed in Figure 16. The PM-10 emissions were calculated for the PM-10 nonattainment area for an annual average day.

The projected PM-10 emissions in 2015, 2025, and 2035 for the build scenario are 84,725, 86,163, and 88,250 kilograms per day, respectively. The projected PM-10 emissions in 2015, 2025 and 2035 for the no-build scenario are 84,733, 86,227, and 88,582 kilograms per day, respectively.

Since the PM-10 emissions predicted for the build scenarios are not greater than the PM-10 emissions predicted for the no-build scenarios in all conformity analysis years, it is also reasonable to expect the build emissions would not exceed the no-build emissions for the time periods between the analysis years.<sup>1</sup> These results support a finding of conformity.

Conformity Test Results for the Pinal PM-2.5 Nonattainment Area

The conformity modeling results for PM-2.5 and NOx are listed in Table 13 and graphed in Figures 17 and 18. The PM-2.5 and NOx emissions were calculated for the PM-2.5 nonattainment area for an annual average day.

The projected PM-2.5 emissions in 2015, 2025, and 2035 for the build scenario are 32, 23, and 29 kilograms per day, respectively. The projected PM-2.5 emissions in 2015, 2025 and 2035 for the no-build scenario are 32, 24 and 31 kilograms per day, respectively.

---

<sup>1</sup>Section 93.119(d)(1) of the Transportation Conformity Regulations (EPA, 2012c), refers to “build” as the “action” scenario and “no-build” as the “baseline” scenario.

The projected NOx emissions in 2015, 2025, and 2035 for the build scenario are 1,233, 860, and 833 kilograms per day, respectively. The projected NOx emissions in 2015, 2025 and 2035 for the no-build scenario are 1,235, 916 and 908 kilograms per day, respectively.

Since the PM-2.5 and NOx emissions predicted for the build scenarios are not greater than the PM-2.5 and NOx emissions predicted for the no-build scenarios in all conformity analysis years, it is also reasonable to expect the build emissions would not exceed the no-build emissions for the time periods between the analysis years.<sup>1</sup> These results support a finding of conformity.

TABLE 13.  
CONFORMITY INTERIM EMISSION (BUILD/NO-BUILD) TEST RESULTS  
(KILOGRAMS/DAY)  
PINAL COUNTY NONATTAINMENT AREAS

	PM-10 Nonattainment Area	PM-2.5 Nonattainment Area	
Pollutant	PM-10	PM-2.5	NOx
2015			
- Build	84,725	32	1,233
- No-Build	84,733	32	1,235
2025			
- Build	86,163	23	860
- No-Build	86,227	24	916
2035			
- Build	88,250	29	833
- No-Build	88,582	31	908

Figure 16: PM-10 Results for Conformity Interim Emission (Build/No-Build) Test  
Pinal County PM-10 Nonattainment Area

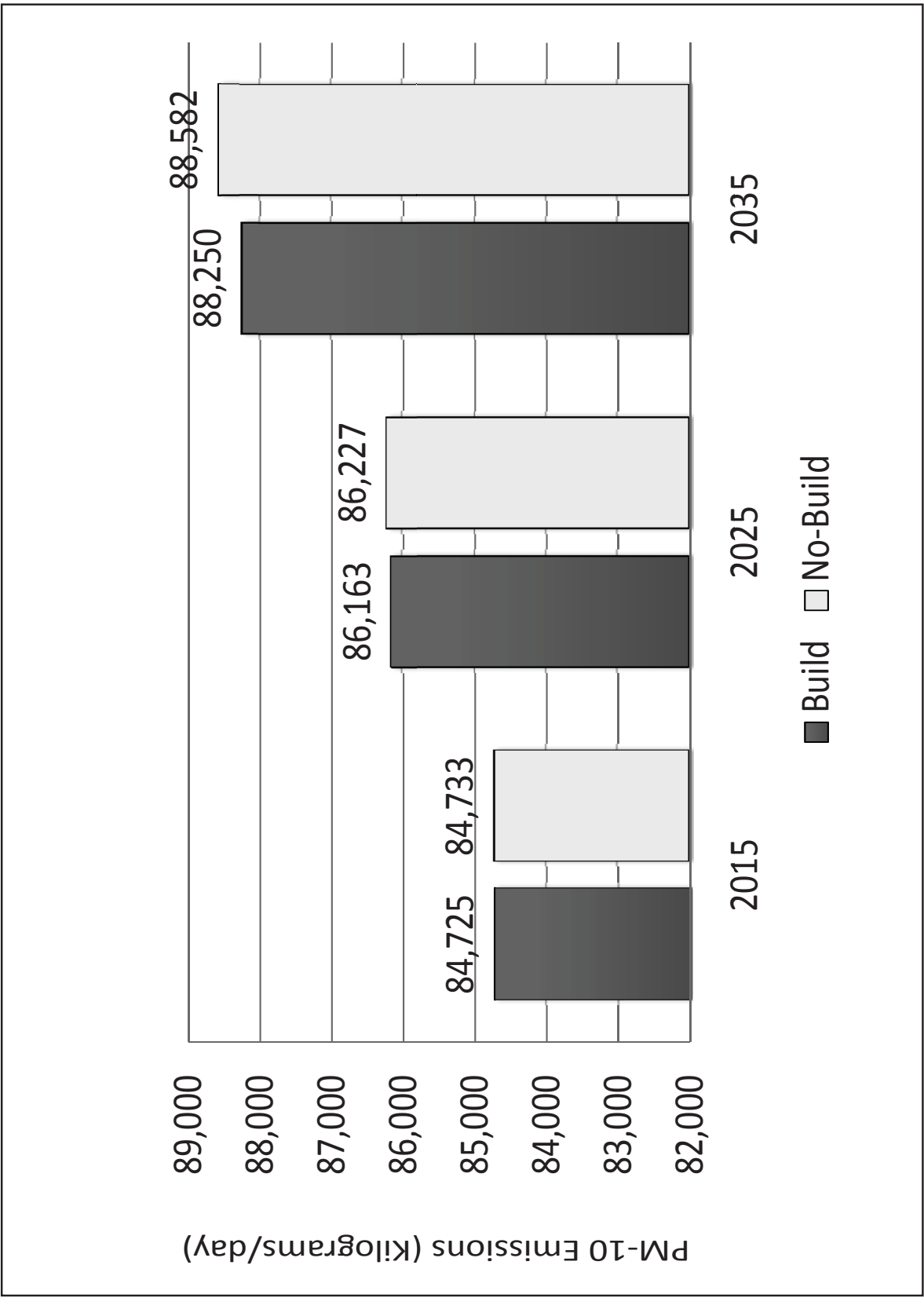




Figure 17: PM-2.5 Results for Conformity Interim Emission (Build/No-Build) Test  
Pinal County PM-2.5 Nonattainment Area

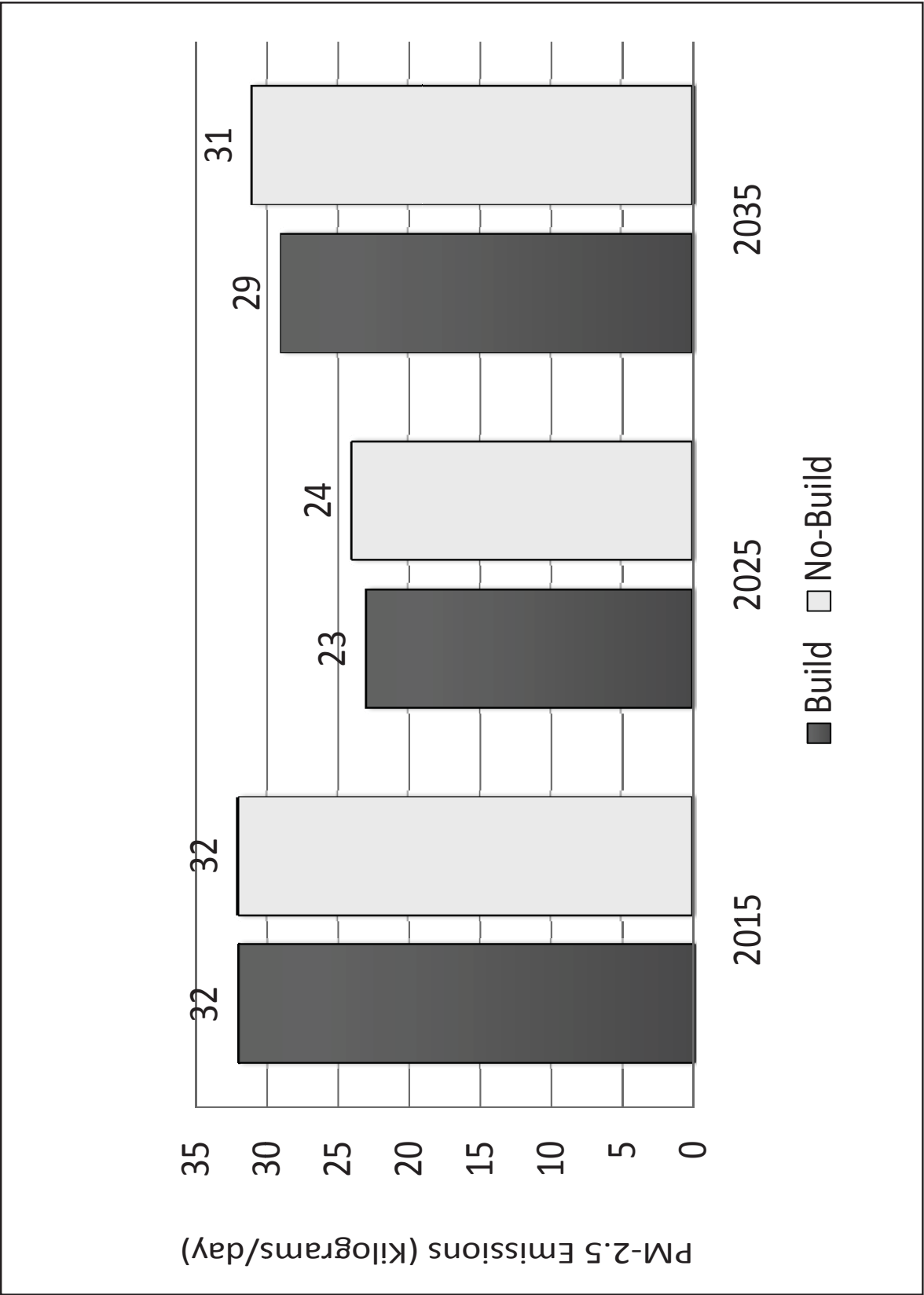
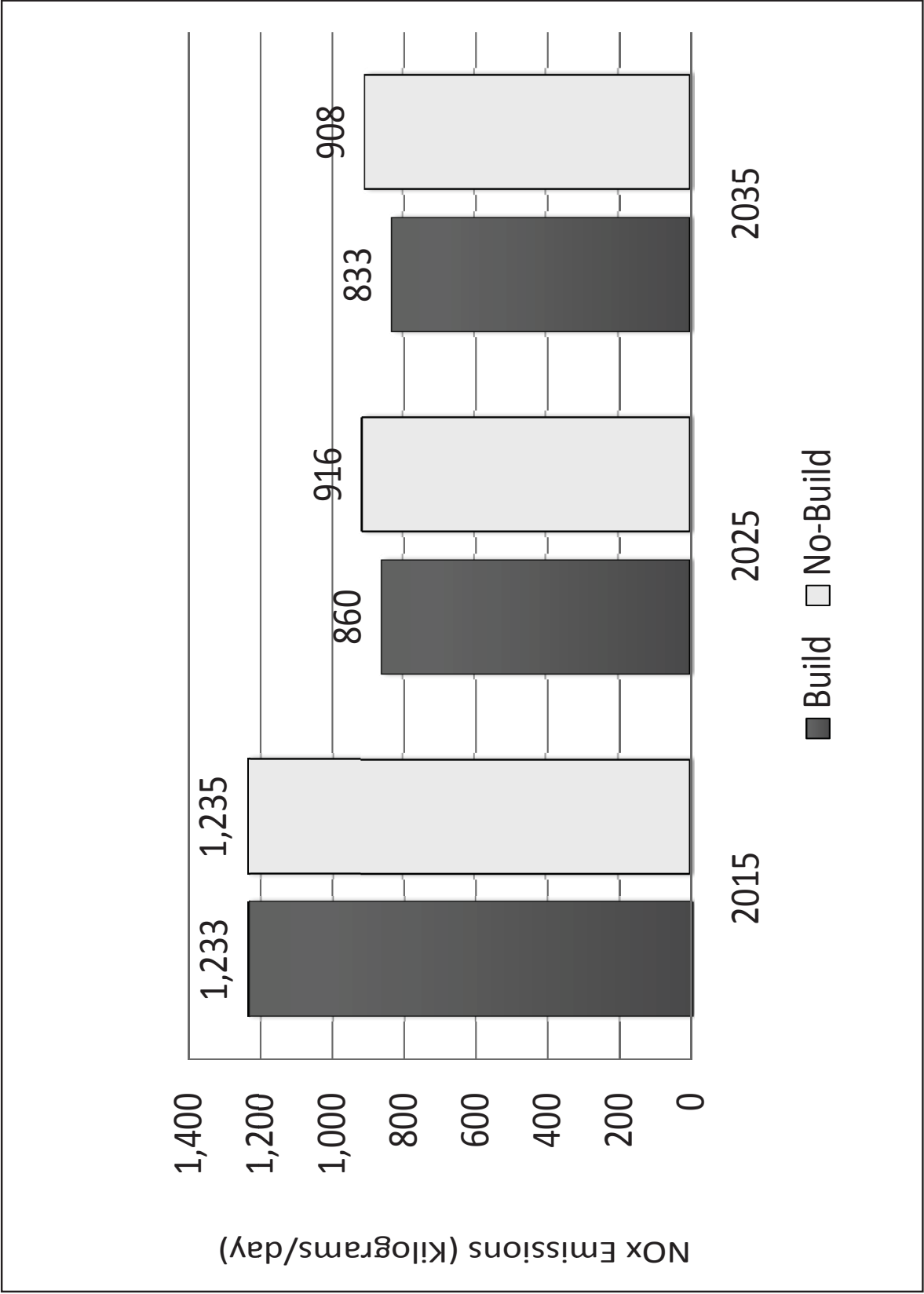


Figure 18: NOx Results for Conformity Interim Emission (Build/No-Build) Test  
Pinal County PM-2.5 Nonattainment Area



GLOSSARY

40 CFR Parts 51 and 93	Sections 51 and 93 from Title 40 of the Code of Federal Regulations describing the transportation conformity rule.
ADEQ	Arizona Department of Environmental Quality.
ADOT	Arizona Department of Transportation.
AP-42	AP-42, Fifth Edition, provides PM-10 emission factors. Common name for the EPA Compilation of Air Pollutant Emission Factors.
Applicable Plan	An air quality plan that has been approved by EPA for a specific air pollutant.
A.R.S.	Arizona Revised Statutes. The codified laws of the State of Arizona.
Arterial Roadway	A major urban street serving through traffic and also providing access to adjacent land.
Attainment	The status of having air quality that is below (i.e., cleaner air) the allowable national standard for a particular pollutant.
AZ-SMART	Arizona Socioeconomic Modeling, Analysis, and Reporting Toolbox is the MAG socioeconomic model used to develop population and employment projections.
Build/No-Build	“Build” refers to the action scenario which assumes the “No-Build” scenario and the implementation of the proposed action (included in the TIP or RTP) for each of the years to be analyzed. “No-Build” refers to the baseline scenario which assumes the future transportation network without implementation of the proposed action (included in the TIP or RTP) for the years to be analyzed.

CAA	The U.S. Clean Air Act, referring to the Air Pollution Control Act of 1955, as subsequently amended in 1963, 1967, 1970, 1974, 1977, and 1990.
Capacity	The maximum number of vehicles that a roadway can carry in a given time period under prevailing roadway, traffic, and control conditions.
Centroid Connector	An abstract representation of the local street system, as used in MAG travel demand models. These links connect the centroids of zones, where trips begin or end, to arterial or collector roadways on the modeled road network.
CMAQ	Congestion Mitigation and Air Quality Improvement Program.
CO	Carbon monoxide. A colorless, odorless, poisonous gas that results from the incomplete combustion of carbon-based fuels, such as gasoline.
Collector Roadway	A minor urban street providing access to and from local streets and serving adjacent land use.
Concentration	The relative content of a pollutant in the air, expressed as a volume unit to volume unit often expressed as an average for a specified time interval. For example, the national standard for ambient carbon monoxide concentration is an eight-hour average of 9.0 parts per million.
Conformity	An analysis which demonstrates that a transportation plan, program, or project conforms with the State Implementation Plan purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and that such activities will not cause or contribute to any new violation of any standard in any area; increase the frequency or severity of any existing violation of any standard in any area; or delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.
Congestion	Traffic congestion is a condition in which vehicles experience undue delay. It is quantified in the MAG travel demand models by the ratio of traffic volume to capacity

	(V/C). A V/C ratio of 1.00 or more is considered severe congestion.
Emission Factor	The rate at which a pollutant is emitted from a given source (example: grams per mile) for given conditions (e.g., vehicle type and model year, vehicle speed, fuel type, and ambient air temperature).
Episode Day	A day selected to represent conditions (meteorology, etc.) under which violations of the air quality standard for a particular pollutant are likely to occur.
EPA	United States Environmental Protection Agency.
Exceedance	A term used to refer to an episode during which ambient concentrations of an air pollutant in a region are higher than the allowable national standard.
FHWA	Federal Highway Administration.
FIP	Federal Implementation Plan.
FMS	Freeway Management System. Infrastructure such as cameras, variable message signs, and ramp metering systems to improve the flow of people and goods on limited access facilities.
FTA	Federal Transit Administration.
Freeway	A divided highway with two or more lanes for the exclusive use of traffic in each direction, and with full control of access and egress.
FY	Fiscal Year. The federal fiscal year extends from October 1 to September 30. For example, FY 2005 begins on October 1, 2004.
Hot Spot	Localized area with the potential to cause or contribute to a violation of an air quality standard. For example, a busy intersection where vehicular traffic may cause or contribute to increased emissions of carbon monoxide may attribute to a violation of the standard.
HOV	High Occupancy Vehicle. Multi-occupant vehicles such as a carpool, vanpool, or bus.
121	

HOV Lane	A roadway lane available for use by High Occupancy Vehicles.
HPMS	Highway Performance Monitoring System. Summary information for urbanized areas provides detailed data for a sample of the arterial and collector functional systems to assess highway condition, performance, air quality trends, and future investment requirements.
I/M	Vehicle Inspection/Maintenance Program.
ITS	Intelligent Transportation System. The deployment of advanced electronics and information technologies to improve the performance of freeways and arterial roadways.
Link	A computer record describing a section of roadway in the MAG transportation models.
Local Roadway	A road, usually with low traffic volume, designed solely to serve adjacent development rather than through traffic.
MAG	Maricopa Association of Governments. The Maricopa Association of Governments was designated the metropolitan planning agency for Maricopa County, Arizona, by Governor Jack Williams on December 14, 1973.
MCAQD	Maricopa County Air Quality Department.
Metric Ton	A unit of mass equal to 1000 kilograms, or approximately 2203 pounds.
Mode Choice Model	A computer model which determines mode choice, such as transit, auto driver, and auto passenger, based on variables such as travel times, costs, and income of travelers.
MOVES2010	MOVES2010b is a currently approved EPA model for estimating onroad vehicle emission factors. This model is used to estimate the emission factors for CO, VOC, NOx, and PM-10 exhaust, tire wear, and brake wear emissions.
MOVESLink	A MAG software program that combines emission factors (such as from MOVES2010) with link-level transportation data to produce onroad mobile emission inventories.
122	



MPO	Metropolitan Planning Organization. A body of elected public officials responsible for regional transportation decision-making, as required under federal transportation planning regulations.
NAAQS, or National Standard	Refers to the National Ambient Air Quality Standards (NAAQS) which are the maximum pollutant levels which may not be exceeded in the ambient air to protect the public from adverse health effects.
Network	A computer readable representation of a specific urban street and highway system.
Nonattainment Area	An area designated by the U.S. Environmental Protection Agency as not being in attainment of the national standard for a specified pollutant.
Node	A point identifying one end of a link in the MAG transportation models.
NO <sub>x</sub>	Nitrogen Oxides includes nitric oxide (NO) and nitrogen dioxide (NO <sub>2</sub> ). These gaseous air pollutants combine with volatile organic compounds (i.e. hydrocarbons) in the presence of sunlight to produce ozone.
O <sub>3</sub>	Ozone is a secondary pollutant formed by the combination of VOCs and NO <sub>x</sub> in the presence of sunlight.
OBD	On-Board Diagnostics. A computer based system built into all model year 1996 and newer light-duty cars and trucks. OBD monitors the performance of some of the engines' major components, including individual emission controls.
Phased in I/M Cutpoints	Cutpoints are the maximum emission level, by pollutant, used to determine if a vehicle passes or fails the emissions test administered through the vehicle inspection and maintenance program. The phased-in I/M cutpoints are the cutpoints currently enacted into legislation for vehicles subject to the enhanced emissions test.
PM-10	Particulate Matter less than or equal to ten microns in diameter.
ppm	Parts per million, a measure of pollution concentration.

123

psi	Pounds per square inch, a measure of pressure.
Reentrained Dust	Dust deposited on the roadway that is subsequently projected into the air by the passage of motor vehicles.
Regional Rideshare Program	The MAG sponsored program which provides free technical assistance to individuals, companies, and public sector entities interested in carpooling, vanpooling, or other transportation alternatives to drive-alone motor vehicle use.
ROSS Plan	Regional Off-Street System Plan. A plan describing a region-wide system of off-street paths/trails for non-motorized transportation.
RPTA	Regional Public Transportation Authority. A political subdivision of the State of Arizona established in 1985 to conduct regional transit planning and to develop and operate a regional transit system in Maricopa County.
RTP	Regional Transportation Plan.
SIP	State Implementation Plan. Mandated by the Clean Air Act, SIPs contain details to monitor, control, maintain, and enforce compliance with National Ambient Air Quality Standards.
Socioeconomic Data	Data consists primarily of TAZ-level household projections of population and employment by type which are input to the MAG travel demand models.
TAZ	Traffic Analysis Zone. A small geographic area for which socioeconomic data is estimated in the MAG travel demand models.
TCM	Transportation Control Measure. A TCM as defined in CAA Section 108(f)(1)(A) includes any measure in an applicable implementation plan which is intended to reduce emissions from transportation sources by reducing vehicle use or changing traffic flow or congestion conditions (e.g., transit improvements).
TIP	Transportation Improvement Program. An annual or biennial document listing transportation projects to be funded in upcoming years.

124

TMA	Transportation Management Association. A group comprised generally of businesses to identify and develop solutions to shared transportation problems.
TOG	Total Organic Gases. Gaseous emissions that lead to the formation of ozone.
TransCAD	Software programs which are used to perform the MAG travel demand modeling.
Travel Reduction Program (TRP)	A program administered by Maricopa County, pursuant to the provisions of Arizona House Bill 2206 (1988), as subsequently strengthened by adoption of the Maricopa County Trip Reduction Ordinance.
U.S. DOT	United States Department of Transportation.
V/C Ratio	Volume to Capacity Ratio. A parameter used to measure congestion. For a given roadway link, it is calculated as total traffic volume divided by capacity.
Violation	A term used to define the number of exceedances that result in noncompliance with the national standard.
VMT	Vehicle Miles of Travel. A measure of total vehicle travel within a specified area and time frame.
VOC	Volatile Organic Compounds. VOCs are emitted in the storage and use of fuel, solvents, and many industrial and consumer chemicals, as well as from vegetation. VOCs and nitrogen oxides, when emitted in the presence of sunlight, undergo chemical reactions which result in the formation of ozone.

125

REFERENCES
ADEQ. 1995. <i>Arizona Conformity Rules</i> . Adopted by the Arizona Department of Environmental Quality, Arizona Administrative Code, Title 18, Chapter 2, Article 14, April 12, 1995.
ADEQ. 2000. <i>Final Serious Area Ozone State Implementation Plan For Maricopa County</i> . Prepared by Arizona Department of Environmental Quality. December 2000.
BAQC. 1978. <i>Nonattainment Area Plan for Carbon Monoxide and Photochemical Oxidants Maricopa County</i> Urban Planning Area. Bureau of Air Quality Control, Arizona Department of Health Services. n.d.
CAA. 1990. <i>Clean Air Act</i> , as amended November 15, 1990. (42 U. S. C. Section 7401 et seq.) November 15, 1990.
EPA. 1993. 40 CFR Parts 51 and 93. <i>Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs and Projects Funded or Approved Under Title 23 U.S.C. or the Federal Transit Act</i> . U.S. Environmental Protection Agency. Federal Register, November 24, 1993, Vol. 58, No. 225, p. 62188.
EPA. 1995a. 40 CFR Parts 51 and 93. <i>Transportation Conformity Rule Amendments: Transition to the Control Strategy Period</i> . U.S. Environmental Protection Agency. Federal Register, August 7, 1995, Vol. 60, No. 151, p. 40098.
EPA. 1995b. 40 CFR Parts 51 and 93. <i>Transportation Conformity Rule Amendments: Miscellaneous Revisions</i> . U.S. Environmental Protection Agency. Federal Register, November 14, 1995, Vol. 60, No. 219, p. 57179.
EPA. 1996a. <i>Clean Air Act Reclassification; Arizona-Phoenix Nonattainment Area; PM-10</i> . U.S. Environmental Protection Agency. Federal Register, May 10, 1996, Vol. 61, No. 92, p. 21372.
EPA. 1996b. <i>Clean Air Act Reclassification; Arizona-Phoenix Area; Carbon Monoxide</i> . U.S. Environmental Protection Agency. Federal Register, July 29, 1996, Vol. 61, No. 146, p. 39343.

127

- EPA. 1997a. 40 CFR Parts 51 and 93. *Transportation Conformity Rule Amendments: Flexibility and Streamlining; Final Rule*. U.S. Environmental Protection Agency. Federal Register, August 15, 1997, Vol. 62, No. 158, p. 43779.
- EPA. 1997b. *Clean Air Act Reclassification; Arizona-Phoenix Nonattainment Area; Ozone*. U.S. Environmental Protection Agency. Federal Register, November 16, 1997, Vol. 62, No. 215, p. 60001.
- EPA. 1998a. *Technical Amendments to Clean Air Act Reclassification; Arizona-Phoenix Nonattainment Area; Ozone; Correction of Effective Date Under Congressional Review Act (CAA)*. U.S. Environmental Protection Agency. Federal Register, February 13, 1998, Vol. 63, No. 30, p. 7290.
- EPA. 1998b. 40 CFR Part 52. *Promulgation of Federal Implementation Plan for Arizona; Phoenix PM-10 Moderate Area; Disapproval of State Implementation Plan for Arizona; Phoenix PM-10 Moderate Area; Final Rule* U.S. Environmental Protection Agency. Federal Register, August 3, 1998, Vol. 63, No. 148, p. 41326.
- EPA. 1999a. 40 CFR Part 52. *Approval and Promulgation of Implementation Plans; Phoenix, Arizona Ozone Nonattainment Area, Revision to the 15 Percent Rate of Progress Plan*. U.S. Environmental Protection Agency. Federal Register, July 6, 1999, Vol. 64, No. 128, p. 36243.
- EPA. 1999b. *Adequacy Status of the Maricopa County Submitted CO Attainment Plan for Transportation Conformity Purposes*. U.S. Environmental Protection Agency. Federal Register, November 29, 1999, Vol. 64, No. 228, p. 66634.
- EPA. 1999c. *Conformity Guidance on Implementation of March 2, 1999 Conformity Court Decision*. Memorandum from U.S. Environmental Protection Agency. May 14, 1999.
- EPA. 2000. 40 CFR Part 93. *Transportation Conformity Amendment: Deletion of Grace Period*. U.S. Environmental Protection Agency. Federal Register, April 10, 2000, Vol. 65, No. 69, p. 18911.
- EPA. 2001a. 40 CFR Part 81. *Determination of Attainment of the 1-Hour Ozone Standard for the Phoenix Metropolitan Area, Arizona and Determination Regarding Applicability of Certain Clean Air Requirements*. U.S. Environmental Protection Agency. Federal Register, May 30, 2001, Vol. 66, No. 104, p. 29230.
- EPA. 2001b. *Adequacy Status of the Maricopa County, Arizona, Submitted CO Attainment Plan for Transportation Conformity Purposes*. U.S. Environmental Protection Agency. Federal Register, October 17, 2001, Vol. 66, No. 201, p. 52761.

- EPA. 2002a. *Approval and Promulgation of Implementation Plans; Arizona - Maricopa County PM-10 Nonattainment Area; Serious Area Plan for Attainment of the PM-10 Standards*. Federal Register, July 25, 2002, Vol. 67, No. 143, p. 48718.
- EPA. 2002b. 40 CFR Part 93. *Transportation Conformity Rule Amendments: Minor Revision of 18-Month Requirement for Initial SIP Submissions and Addition of Grace Period for Newly Designated Nonattainment Areas*. U.S. Environmental Protection Agency. Federal Register, August 6, 2002, Vol. 67, No. 151, p. 50808.
- EPA. 2003. 40 CFR Part 81. *Determination of Attainment for the Carbon Monoxide National Ambient Air Quality Standard for the Phoenix Metropolitan Area, Arizona*. U.S. Environmental Protection Agency. Federal Register, September 22, 2003, Vol. 68, No. 183, p. 55008.
- EPA. 2004a. 40 CFR Part 93. *Transportation Conformity Final Rule: Conformity Amendments for the New 8-Hour Ozone and PM2.5 National Ambient Air Quality Standards, Response to March 1999 Court Decision, and Additional Rule Changes*. U.S. Environmental Protection Agency. Federal Register, July 1, 2004, Vol. 69, No. 126, p. 40004.
- EPA. 2004b. 40 CFR Parts 50, 51, and 81. *Air Quality Designations and Classifications for the 8-Hour Ozone National Ambient Air Quality Standards; Early Action Compact Areas with Deferred Effective Dates*. U.S. Environmental Protection Agency. Federal Register, April 30, 2004, Vol. 69, No. 84, p. 23858.
- EPA. 2004c. 40 CFR Part 51. *Official Release of the MOBILE 6.2 Motor Vehicle Emissions Factor Model and the December 2003 AP-42 Methods for Reentrained Road Dust*. U.S. Environmental Protection Agency. Federal Register, May 19, 2004, Vol. 69, No. 97, p. 28830.
- EPA. 2005a. *Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes; Arizona*. U.S. Environmental Protection Agency. Federal Register, March 9, 2005, Vol. 70, No. 45, p. 11553.
- EPA. 2005b. *Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes; Arizona; Redesignation of Phoenix to Attainment for the 1-Hour Ozone Standard*. U.S. Environmental Protection Agency. Federal Register, June 14, 2005, Vol. 70, No. 113, p. 34362.
- EPA. 2008a. 40 CFR Parts 51 and 93. *Transportation Conformity Rule Amendments To Implement Provisions Contained in the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)*. U.S. Environmental Protection Agency. Federal Register, January 24, 2008, Vol. 73, No. 16, p. 4420.



EPA. 2008b. *Guidance for the Use of Latest Planning Assumptions in Transportation Conformity Determinations; Revision to January 18, 2001 Guidance Memorandum*. U.S. Environmental Protection Agency. December 2008.

EPA. 2009. *Policy Guidance on the Use of MOVES2010b and Subsequent Minor Revisions for State Implementation Plan Development, Transportation Conformity, and Other Purposes*. U.S. Environmental Protection Agency. December 2009.

EPA. 2010. *Official Release of the MOVES2010 Motor Vehicle Emissions Model for Emissions Inventories in SIPs and Transportation Conformity*. U.S. Environmental Protection Agency. Federal Register, March 2, 2010, Vol. 75, No. 40, p. 9411.

EPA. 2012a. *Transportation Conformity Rule: MOVES Regional Grace Period Extension*. U.S. Environmental Protection Agency. Federal Register, February 27, 2012, Vol. 77, No. 38, p. 11394.

EPA. 2012b. *Transportation Conformity Rule Restructuring Amendments*. U.S. Environmental Protection Agency. Federal Register, March 14, 2012, Vol. 77, No. 50, p. 14979.

EPA. 2012c. *Transportation Conformity Regulations as of April 2012*. U.S. Environmental Protection Agency, April 2012.

EPA. 2012d. *Approval of Air Quality Implementation Plan; Arizona; Attainment Plan for 1997 8-Hour Ozone Standard*. U.S. Environmental Protection Agency. Federal Register, June 13, 2012, Vol. 77, No. 114, p. 35285.

EPA/DOT. 1991a. *Guidance for Determining Conformity of Transportation Plans, Programs, and Projects with Clean Air Act Implementation Plans During Phase I of the Interim Period*. U.S. Environmental Protection Agency and Department of Transportation. June 7, 1991.

EPA/DOT. 1991b. *Guidance for Determining Conformity of Transportation Plans, Programs, and Projects with Clean Air Act Implementation Plans During Phase I of the Interim Period*. Extended Applicability of the Interim Conformity Guidance. U.S. Environmental Protection Agency and Department of Transportation. October 25, 1991.

MAG. 1996a. *MAG Conformity Consultation Processes for the Maricopa County Nonattainment Area, Required Under Arizona Conformity Rule R18-2-1405*. Prepared by the Maricopa Association of Governments and approved by the MAG Regional Council February 28, 1996.

MAG. 1996b. *Maricopa Association of Governments Transportation Conformity Guidance and Procedures Required Under Arizona Administrative Code Sections R18-2-1405(R) and R18-2-1429(D)*. Prepared by the Maricopa Association of Governments and approved by the MAG Regional Council initially on September 27, 1995 and in revised form on March 27, 1996.

MAG. 1999. *MAG 1999 Serious Area Carbon Monoxide Plan for the Maricopa County Nonattainment Area*. Prepared by the Maricopa Association of Governments. June 1999.

MAG. 2000. *Revised MAG 1999 Serious Area Particulate Plan for PM-10 for the Maricopa County Nonattainment Area*. Prepared by the Maricopa Association of Governments. February 2000.

MAG. 2001. *Revised MAG 1999 Serious Area Carbon Monoxide Plan for the Maricopa County Nonattainment Area*. Prepared by the Maricopa Association of Governments. January 2001.

MAG. 2003. *Carbon Monoxide Redesignation Request and Maintenance Plan for the Maricopa County Nonattainment Area*. Prepared by the Maricopa Association of Governments. May 2003.

MAG. 2007a. *Eight-Hour Ozone Plan for the Maricopa Nonattainment Area*. Prepared by the Maricopa Association of Governments. June 2007.

MAG. 2007b. *MAG Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area*. Prepared by the Maricopa Association of Governments. December 2007.

MAG. 2009. *Eight-Hour Ozone Redesignation Request and Maintenance Plan for the Maricopa Nonattainment Area*. Prepared by the Maricopa Association of Governments. February 2009.

MAG. 2010. *VMT Estimation for the 2009 MAG Unpaved Road Inventory*. Memo prepared by Cathy Arthur for the Maricopa Association of Governments. January 26, 2010.

MAG. 2012. *MAG 2012 Five Percent Plan for PM-10 for the Maricopa County Nonattainment Area*. Prepared by the Maricopa Association of Governments. May 2012.

MAG. 2013. *MAG 2013 Carbon Monoxide Maintenance Plan for the Maricopa County Area*. Prepared by the Maricopa Association of Governments. March 2013.

MCAQD. 2011. *2008 Periodic Emission Inventory for PM-10 for the Maricopa County, Arizona, Nonattainment Area*. Prepared by the Maricopa County Air Quality Department. Revised June 2011.

MCAQD. 2012a. *2008 Periodic Emissions Inventory for Carbon Monoxide for the Maricopa County, Arizona, Nonattainment Area*. Prepared by the Maricopa County Air Quality Department. November 2012.

MCAQD. 2012b. *2008 Periodic Emissions Inventory for Ozone Precursors for the Maricopa County, Arizona, Nonattainment Area*. Prepared by the Maricopa County Air Quality Department. 2012.

MCAQD. 2012c. *Maricopa County Regional Trip Reduction Program Annual Report Executive Summary for the period July 1, 2011 - June 30, 2012*. Prepared by the Maricopa County Air Quality Department. 2012.

Sierra Research. 2013. *Draft Pinal County PM10 Nonattainment Area 2008 Base Year Emissions for Selected Design Days and Modeling Domains*. Prepared for the Arizona Department of Environmental Quality by Sierra Research, Inc. September 2013.

U.S. DOT. 1999. *Additional Supplemental Guidance for the Implementation of the Circuit Court Decision Affecting Transportation Conformity*. Memorandum from U.S. Department of Transportation. June 18, 1999.

U.S. DOT. 2001. *Use of Latest Planning Assumptions in Conformity Determinations*. Memorandum from U.S. Department of Transportation. January 18, 2001.

Valley Metro/RPTA. 2012. *Valley Metro/Regional Public Transportation Authority Transit Performance Report for Fiscal Year 2012*. Valley Metro/Regional Public Transportation Authority. n.d.

Valley Metro/RPTA. 2013a. *2013 Transportation Demand Management Survey Executive Summary*. Prepared by WestGroup Marketing Research, Inc. for Valley Metro/Regional Public Transportation Authority. Spring 2013.

Valley Metro/RPTA. 2013b. *Valley Metro Bus Book effective July 22, 2013*. Valley Metro/Regional Public Transportation Authority. n.d.

This page intentionally left blank

APPENDIX 4-4

DUST CONTROL PERMIT

**Appendix 4-4, *Dust Control Permit***, contains an application for a Maricopa County Dust Control Permit. Fugitive dust generated as a result of construction activities must be controlled in accordance with the 2000 Arizona Department of Transportation *Standard Specifications for Road and Bridge Construction*, Section 104.08, local rules and ordinances, and special provisions. A Maricopa County Dust Control Permit would be obtained by the selected roadway contractor prior to the commencement of construction.



Maricopa County  
Air Quality Department

DUST CONTROL PERMIT APPLICATION PACKAGE

This package contains information and forms necessary to apply for a Dust Control permit as set forth in Maricopa County Air Pollution Control Regulations Rule 310. The Dust Control Permit Application Package is organized into three major parts.

**PART 1. DUST CONTROL PERMIT APPLICATION INSTRUCTIONS** ..... 5  
**PART 2. DUST CONTROL PERMIT APPLICATION FORM** ..... 23  
**PART 3. DUST CONTROL PERMIT APPLICATION DUST CONTROL PLAN** ..... 28

TABLE OF CONTENTS

Important rule changes effective March 2008 ..... 3  
Frequently Asked Questions (FAQs) ..... 4  
**PART 1. DUST CONTROL PERMIT APPLICATION INSTRUCTIONS** ..... 5  
A. Instructions for completing the Dust Control Permit Application Form ..... 5  
    Applicant Information Instructions ..... 5  
    Project Information instructions ..... 6  
B. Instructions for completing the Dust Control Permit Application Dust Control Plan ..... 8  
    Dust Control Plan general information ..... 8  
    Dust Control Plan Control Measures instructions ..... 10  
C. Appendix: Additional information on Key Topics ..... 14  
    Glossary of Terms ..... 14  
    Applicable Maricopa County Air Pollution Control Regulations ..... 14  
    Project information sign ..... 15  
    Soil texture and type classification summary ..... 15  
    Soil texture and type map summary ..... 16  
    Additional assistance ..... 17  
    Dust suppressants summary ..... 18  
    Examples for correctly completing Part 3 – Dust Control Plan ..... 19  
**PART 2. DUST CONTROL PERMIT APPLICATION FORM** ..... 23  
    Completeness Checklist ..... 23  
    Applicant Information ..... 23  
    Project Information ..... 25  
**PART 3. DUST CONTROL PERMIT APPLICATION DUST CONTROL PLAN** ..... 28  
    Categories A – H Control Measures ..... 29  
    Category I Water, tables ..... 37  
    Category J Dust suppressants other than water, table ..... 42

**In order to be accepted for review the Dust Control Permit Application Package must be complete. This includes answering all questions fully and accurately in the Applicant and Project information areas as well as submitting a Dust Control Plan. You may fill out Part 3 of the Dust Control Permit Application and submit it as your Dust Control Plan or you may write your own Dust Control Plan that conforms to Rule 310, Section 402.**

**Once a complete Dust Control Permit Application Package is accepted, allow up to 14 calendar days for permit processing plus sufficient time for delivery by U.S. Postal Service First Class mail.**

**Keep in mind**, the Maricopa County Air Quality Department uses the Instructions portion of the Dust Control Permit Application Package as criteria when reviewing, evaluating, and approving the Permit Application. The rules identified in the instructions contain legally binding and enforceable requirements. Permits issued by the Maricopa County Air Quality Department under the rules also contain legally binding and enforceable conditions and terms. The Dust Control Permit Application Instructions do not supersede or change any existing federal, state, or county regulations and laws, including requirements of an approved State Implementation Plan (SIP).



BLANK PAGE

**IMPORTANT RULE CHANGES EFFECTIVE MARCH 2008**

Maricopa County Air Pollution Control Regulations Rule 310 “Fugitive Dust from Dust-Generating Operations” and Rule 200 “Permit Requirements” introduced the following requirements in early 2008 that you should be aware of:

**1. Dust Control Coordinator**

A Dust Control Coordinator is required to be on-site at all times during primary dust-generating operations for any site of five or more acres of disturbed surface area that is subject to a Maricopa County dust control permit (Rule 310, Section 310). The contact information for the Dust Control Coordinator(s) must be provided in Question #5 of Part 2 of the Dust Control Permit Application.

**2. Dust Control Training Classes**

Comprehensive Dust Control Training:

The Dust Control Coordinator is required to successfully complete a Comprehensive Dust Control Training Class at least once every three years.

Basic Dust Control Training:

Site superintendents or other designated on-site representatives of the permit holder, if present at a site with more than one acre of disturbed surface area, is required to successfully complete a Basic Dust Control Training Class at least once every three years.

All water truck drivers and water pull drivers must successfully complete a Basic Dust Control Training Class at least once every three years.

More information on these training classes can be found by calling the Training Line at 602-372-1467 or at: [www.maricopa.gov/aq/divisions/compliance/dust/dust\\_control\\_training](http://www.maricopa.gov/aq/divisions/compliance/dust/dust_control_training) on the MCAQD's Dust Compliance Division web site.

**3. Visible emissions beyond property line**

Rule 310, Section 303.1 requires that the owner and/or operator of a dust generating operation shall not cause, suffer, or allow visible emissions of particulate matter, including fugitive dust, beyond the property line within which the emissions are generated. Section 303.2 does provide an exception for dust-generating operations conducted within 25 feet of the property line.

**4. Subcontractor Registration**

A requirement of Rule 200 (Permit Requirements) is Subcontractor Registration. Subcontractors do not submit the Dust Control Permit Application in the role of “Applicant” but subcontractors engaged in dust-generating operations at a site that is subject to a Maricopa County dust control permit are required to register with the MCAQD (Rule 200, Section 306) and pay an annual fee as specified in Rule 280, Section 312. The subcontractor shall have its registration number readily accessible on-site while conducting any dust-generating operations and the registration number must be visible and readable by the public without having to be asked by the public. The registration and \$50.00 fee can be submitted by mail or in person at the One Stop Shop, 501 N. 44<sup>th</sup> Street, Suite 200, Phoenix, AZ 85008. Additional information on Subcontractor Registration requirements, submittal and current fees can be found at <http://www.maricopa.gov/aq/divisions/compliance/dust/subcontractorRegistration.aspx>

FREQUENTLY ASKED QUESTIONS (FAQs)

1. Do I need a Dust Control Permit?

- A. Activity: Whenever a dust-generating activity will disturb 1/10th acre (4,356 square feet) or more you must obtain a dust control permit before commencing the activity. This area of disturbance includes all areas under common control such as stockpiles, storage and equipment yards as well as the area being disturbed, even if they may be separated by public or private roadways (Rule 310, Section 302). No activity may commence before the permit is approved and, along with the Dust Control Plan, posted in a conspicuous location at the work site, within on-site equipment, or in an on-site vehicle, or otherwise kept available on-site at all times.
- B. Re-application: Dust Control permits are valid for one year from the date of approval. If the project still has a disturbed surface area of 0.10 acre (4,356 square feet) or more at the expiration of the one year permit term a new permit will need to be obtained by submitting a new Dust Control Application. The re-application process can take up to 14 calendar days once a complete application is received (not including time for postal delivery) so the application must be submitted at least 14 calendar days before the existing Dust Control permit expires.

2. How do I apply? What are the steps?

- A. Obtain Dust Control Permit Application Package: You can pick up the application package in person at either the Maricopa County Air Quality Department (MCAQD) Dust Compliance Division offices at 1001 North Central Avenue, Suite 400 in Phoenix, Arizona as well as the One Stop Shop at 501 North 44<sup>th</sup> Street, Suite 200 in Phoenix or download it from <http://www.maricopa.gov/aq/divisions/compliance/dust/resources.aspx>
- B. Review the Instructions: Read the instructions thoroughly before beginning work on the application. The instructions are intended to accompany the application. The instructions constitute a body of experience and informed judgment by the Maricopa County Air Quality Department and dust control field inspectors to which you may properly resort for guidance, including details and explanations of the information required in the application. If you still have questions about the application you may find answers on the MCAQD website or by calling the Dust Compliance Division at 602-506-6010.
- C. Complete the Permit Application Form: Fully complete both the Applicant and the Project Information portions of the application, generally in the sequence it is written, using the instructions and Dust Compliance personnel for assistance.
- D. Complete the Dust Control Plan: A dust control plan is required and the third part of the package is designed to guide project personnel in developing a dust control plan that will be posted on-site, and the project will abide by on a day to day basis. Every category or sub-category must be completed, including an explanation for those that are designated non-applicable. A project may develop its own dust control plan as long as it conforms to Rule 310, Section 402.
- E. Review the Completeness Checklist: (see the first page of the Dust Control Permit Application Form, p. 23)
- F. Submit the completed permit application: When submitting the completed application to the One Stop Shop at 501 North 44<sup>th</sup> Street, Suite 200, Phoenix, Arizona 85008, include the appropriate fee for your Dust Control Permit Application (see FAQ #3 below). The completed application can be submitted to the One Stop Shop in person or by mail with payment by check or money order in either case. In addition, a credit card or cash may be used for payment if the application is submitted in person at the One Stop Shop location.

**Make checks payable to “Maricopa County Air Quality Department” or “MCAQD”.**

The completed permit will be sent to the Applicant’s address. Allow up to 14 calendar days for permit processing plus sufficient time for delivery by U.S. Postal Service First Class mail.

3. What will it cost?

Detailed information on current fees can be found in the Maricopa County Air Pollution Control Regulations Rule 280 – Fees or on the Department’s web site: [http://www.maricopa.gov/aq/divisions/permit\\_engineering/permit\\_fees.aspx](http://www.maricopa.gov/aq/divisions/permit_engineering/permit_fees.aspx)

Basic fees for a Dust Control Permit (permit valid for one year) are calculated according to the following:

- If total surface area disturbed is 0.1 acre to less than 1 acre, submit \$350.00.
- If total surface area disturbed is 1 acre or more, submit \$350.00 plus \$77.00 per acre (to a maximum of \$15,750).
- A late fee of \$100.00 is required for any application submitted in response to a violation.

PART 1.  
DUST CONTROL PERMIT APPLICATION INSTRUCTIONS

A. INSTRUCTIONS FOR COMPLETING THE DUST CONTROL PERMIT APPLICATION FORM

APPLICANT INFORMATION INSTRUCTIONS

1. Applicant

Please note that if you are completing this application and you are the “Applicant”, then you are the responsible authority for controlling all aspects of all the work accomplished on-site from initial groundbreaking to final stabilization. This includes canceling the Dust Control Permit when the project is complete and/or when you no longer have control over the day-to-day operations on the site. The Applicant must be the property owner, general/prime contractor, developer or lessee; a subcontractor cannot be the Applicant responsible for a dust control permit.

The Applicant’s name will show on the permit and will not change on re-applications or changes to the permit that retain the original permit number. The Applicant may or may not also be the party contracting to do the work at the site. The address provided will be put on all subsequent permits with the same Applicant name and will serve as the mailing address for the permit or other compliance issues. The Applicant will be the responsible party for the purposes of this project.

The Maricopa County Air Quality Department requires the Applicant Information to be fully and accurately completed, including full legal names of all entities and individuals (no DBA’s or trade names). For all Applicants, appropriate registration in the State of Arizona will be verified with the Arizona Corporation Commission or other applicable resources before a permit will be issued.

2. Parent Company if Applicant is a wholly owned subsidiary

If the Applicant is a wholly owned subsidiary provide full information for the parent company as well. If the parent company has a local or regional presence, use that location and provide contact information for the highest ranking official at that location.

3. Applicant President/Owner

Provide contact information for the highest ranking, local or regional company official of the Applicant.

4. Property Owner/Developer, if not Applicant

Include information regarding the property owner/developer, if different from the Applicant.

5. Dust Control Coordinator

Any site with five acres or more of disturbed surface area subject to a permit issued by the Control Officer requiring control of PM<sub>10</sub> emissions from dust-generating operations requires at least one designated Dust Control Coordinator, with a valid dust training certification identification card that is readily accessible, on-site at all times during primary dust-generating operations per Rule 310, Section 310. The Dust Control Coordinator is required in Rule 310, Section 309.2 to complete a Comprehensive Dust Control Training Class at least once every three years, after which a unique identification badge will be issued to the coordinator and is to be referenced in Question #5 in the application. If there are multiple Dust Control Coordinators, list additional information on a separate sheet of paper and attach following the page this question is on. Changes to the Dust Control Coordinator list can be made with the appropriate form, such as the Dust Control Plan Change form, which can be found on the MCAQD Dust Control Compliance website at <http://www.maricopa.gov/aq/divisions/compliance/dust/resources.aspx> or with a letter that clearly states the changes to be made as well as the permit and dust control plan that will be affected. A form is also available that applies to notifying the MCAQD that a site no longer needs a Dust Control Coordinator when the disturbed surface area of the site falls below five acres.

6. Primary Project Contact

For all projects, provide a Primary Project Contact that may be a Dust Control Coordinator or a different individual all together. Provide information in this question regarding the person the MCAQD can contact who is knowledgeable of the project site or state if this person is listed as the Dust Control Coordinator in the previous question. The phone number(s) provided should be able to reach the contact within four hours.

7. Certification by a Responsible Official of the Applicant

A Responsible Official of the Applicant is the person who will be contacted or named in any enforcement action initiated by the Maricopa County Air Quality Department or the Maricopa County Attorney's Office. Pursuant to Rule 310, Section 401.3, the signature on the Dust Control permit application shall constitute agreement to accept responsibility for meeting the conditions of the Dust Control permit and for ensuring that control measures are implemented throughout the project site and during the duration of the project.

- For a corporation, a corporate officer or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person, if the representative is responsible for the dust-generating operations in the subject application. Delegation of authority to such representative shall be approved in advance by the Maricopa County Air Quality Department, Dust Compliance Division.
- For a partnership or sole proprietorship, a general partner or the proprietor, respectively.
- For a municipality, state, federal, or other public agency, the principle executive officer or ranking elected official of that entity. Delegation of signature authority needs to be submitted in writing to the Maricopa County Air Quality Department, Dust Compliance Division.

8. Application completed by, (if other than Signatory)

Frequently, this person needs to be contacted to clarify information in the application or if there are questions regarding how the Dust Control Plan was filled out.

PROJECT INFORMATION INSTRUCTIONS

9. Name of Project

Name, if any, by which this project will be referred (e.g. Pleasant Hill Acres).

10. Project Location

Provide the best available information for the project's geographic location. If there is an on-site construction office or similar physical contact point this should be referenced. If no specific street address is available, provide a block number and street name, Maricopa County Assessor's parcel number, master plan community number, geographic coordinates or any other pertinent location information or description.

11. Project Location by Township (N or S), Range (E or W), Section (1-36)

The map code or grid location in Township/Range/Section (TRS) format is required and can be obtained from a Phoenix Metropolitan map book or from the Maricopa County Assessor's parcel description.

12. Brief Project Description

Describe the project that will be taking place on the site (e.g. 3-building commercial complex; custom home; weed control; demolition of two buildings; roadway improvement).

13. Will a basement or underground parking be excavated?

This information influences the volume of dust generating material that will be disturbed, moved, stored, and removed from the project location.

14. Will building occur on a pre-existing/prepared pad?

A pre-existing pad/prepared pad is considered to be on a parcel within an existing/prepared subdivision.

15. Size of Project

The size of the project is the total area that will be disturbed throughout the duration of the Permit. Include all unpaved staging areas, stockpiles, access and haul roads, parking, driveways, as well as storage (stated in acres). Be sure to separately notate the specific area of land to be graded if it is different in size than the total area. You will also need to indicate the estimated amount of import/export Bulk Material, as defined in Section 203 of Rule 310, to/from the project site. The estimated amount of import/export Bulk Material to/from the project site is for hauling purposes and may not match the cubic yards to be moved within the boundaries of the project.

16. Project Site Drawing

Maricopa County uses a project site drawing to delineate boundaries between separate projects, so one permit holder is not held responsible for another's work. It is used as a reference, so it does not need to be to scale. It should however be as accurate as possible. The drawing should be no larger than 8½" x 11". The Dust Control Permit Application Form contains an example of what this drawing should contain (see page 26), including the following minimum elements:

- Entire project site boundaries
- Area(s) to be disturbed with linear dimensions, usually in feet (including staging areas, stockpiles, access and haul roads, parking, driveways, and storage)
- Nearest main crossroads
- North arrow
- Access Point(s) – Planned exit locations onto paved areas accessible to the public

17. Is this a Re-application?

A permit is valid for 1 year after the date of approval. The re-application process may take up to 14 calendar days for review and processing (not including time for postal delivery) and must be approved **prior** to the expiration of the old permit. You must re-apply for a permit more than 14 calendar days before the original permit expires.

18. Estimated Project Start Date

Before Dust-Generating Operations may occur the permit must be approved, which may take up to 14 calendar days for review and processing of the permit application (not including time for postal delivery).

Project Start Date and Project Completion Date (next question) are used by Maricopa County to schedule inspection work load. This information is also used to determine if the same project is on-going or a subsequent dust-generating operation is taking place at the project location. If this is a re-application provide the original start date of the project.

19. Estimated Project Completion Date

The answer to this question may be a date beyond the last effective date of the permit that is being applied for; it is acceptable and encouraged to enter the actual Estimated Project Completion Date, not the end date of the permit period or some other modification. See Estimated Project Start Date (previous question) as well.

20. List of Soil Designations from Appendix F

Soil Texture

Rule 310, Section 402.5 requires a Dust Control Plan for construction projects one acre or larger (except for routine maintenance and repair done under a block permit) to include the following information:

- Soil texture naturally present at the dust-generating operation
- Soil texture to be imported onto the dust-generating operation

The information to answer this questions may be obtained from Appendix F of the Maricopa County Air Pollution Control Regulations or attach a copy of a geotechnical report if the site has been tested. For more detail on soil textures and types see the "Appendix – Additional Information on Key Topics" on page 15.

21. Asbestos NESHAP Notification requirements

Any Project that includes demolition or renovation of any existing facilities must address asbestos NESHAP issues that pertain to the Project. Question #21, including all of its sub-questions, must be fully completed to demonstrate whether or not there are any existing asbestos NESHAP issues and compliance with applicable rules before a Dust Control Permit can be issued. A separate notification and fee for demolition and/or renovation activities may be required. More information on the NESHAP Notification program and fees can be found at: [http://www.maricopa.gov/aq/divisions/compliance/air/asbestos\\_neshap/Default.aspx](http://www.maricopa.gov/aq/divisions/compliance/air/asbestos_neshap/Default.aspx) and [http://www.maricopa.gov/aq/divisions/permit\\_engineering/permit\\_fees.aspx](http://www.maricopa.gov/aq/divisions/permit_engineering/permit_fees.aspx) respectively.



B. INSTRUCTIONS FOR COMPLETING THE DUST CONTROL PERMIT APPLICATION DUST CONTROL PLAN

Rule 310, Section 402 (Dust Control Plan requirements) requires the submission of a Dust Control Plan with your application. You may fill out Part 3 of the Dust Control Permit Application and submit it as your Dust Control Plan or you may write your own Dust Control Plan describing all dust control measures to be used during the project and submit it for approval as your Dust Control Plan. Once approved the Dust Control Plan, along with the permit, must be posted in a conspicuous location at the work site, within on-site equipment, or in an on-site vehicle, or otherwise kept available on-site at all times (Rule 310, Section 409). Additionally, according to Rule 310, Section 401.2 complete copies of the approved Dust Control permit, including the Dust Control Plan, must be supplied to all project contractors and subcontractors.

Changes to aspects of the Dust Control Plan may be made after the application is approved by submitting a Permit Plan Change Form to the Maricopa County Air Quality Department. See below for more information regarding making changes to an approved Dust Control Permit and Dust Control Plan.

DUST CONTROL PLAN GENERAL INFORMATION

Unlisted Dust Control Measures

You may choose to use dust control measures not currently listed in Part 3 of the Dust Control Permit Application. Such unlisted dust control measures will be reviewed by the Maricopa County Air Quality Department which may require additional information regarding the control measure effectiveness. Any unlisted dust control measure must clearly meet the dust control requirements of Rule 310 for any dust-generating operation.

MCAQD will apply the following minimum criteria when evaluating any unlisted dust control measures:

- The dust control measure technique is a new or alternative technology that is demonstrated to be equally or more effective in meeting the dust control requirements than the existing dust control measures provided in the Dust Control Permit Application.
- Site logistics do not practically allow for implementation of a listed dust control measure as written (e.g., road width or pre-existing barriers limit the size or width of a gravel pad).
- The owner and/or operator demonstrates that a listed dust control measure is technically infeasible due to site-specific or material-specific conditions, such that implementation of the dust control measure will not provide a benefit in reducing fugitive dust (e.g., pre-soaking screened, washed rock when handling).

Written explanation and/or documentation may be required when including unlisted dust control measures in a Dust Control Permit Application.

Opacity

Rule 310, Section 303 (Visible emissions requirements for Dust-Generating Operations) requires visible fugitive dust emissions to not exceed 20% opacity. As a general rule of thumb, if at any time you can see dust being generated by equipment operations, it is already at least 10% opacity.

Opacity is measured by looking through the dust plume, while the sun is at your back. If more than 20% of the background is obscured, then the opacity is greater than 20%. Appendix C – Fugitive Dust Test Methods contains information and other sources that more fully describe this concept. (See [http://www.maricopa.gov/aq/divisions/planning\\_analysis/AdoptedRules.aspx](http://www.maricopa.gov/aq/divisions/planning_analysis/AdoptedRules.aspx) for an online version of Appendix C).

Making Changes to an Approved Dust Control Permit and Dust Control Plan

You are allowed to make changes to aspects of your approved Dust Control Permit and Dust Control Plan. Maricopa County has permit modification forms available at 1001 N. Central Avenue, 4<sup>th</sup> floor, or you can download permit modification forms from: <http://www.maricopa.gov/aq/divisions/compliance/dust/resources.aspx>

You might have to change your Dust Control Plan if fugitive dust emissions from your project exceed the standards in Rule 310, even though you are following your Dust Control Plan. You might also have to change your Dust Control Plan if the acreage for your project changes or if the permit holder changes.

If you change your Dust Control Plan because you have been notified that fugitive dust emissions from your project exceed the standards in Rule 310, even though you are following your Dust Control Plan, then you must submit a revised Dust Control Plan to the Control Officer within three working days of being notified that your original Dust Control Plan is not effective. During the time that you are preparing revisions to your Dust Control Plan, you must still comply with all of the requirements of Rule 310.

In order to change your Dust Control Permit and/or Dust Control Plan for any other reason, Maricopa County accepts the following permit modification forms:

Parcel Sale Notification

Form requires applicant name and address, parcel(s) sold, date sold, and buyer name and address.

Permit Name Change Request

Form requires existing permit holder name and address, new Applicant name and address, and reason for the permit name change. Appropriate registration in the State of Arizona will be verified with the Arizona Corporation Commission or other applicable resources as is the case with new applications. The previously approved Dust Control Plan can stay in effect or a new Dust Control Plan can be submitted for review and approval.

Permit Cancellation Request

Form requires permit holder name and address, project location, reason for cancellation, verification that no further soil disturbing construction activities will occur, that soils have been permanently stabilized, or that all applicable rules have been satisfied. You must cancel your Dust Control Permit when your project is complete or when you no longer have control over the day-to-day operations on the site.

Permit Acreage Increase Request

Form requires permit holder name & address, reason for acreage change, and the new acreage. The original Dust Control Permit expiration date will not change, it will remain the same. A new site plan showing the increased site area must be submitted as well as the appropriate fee corresponding to the additional acreage amount.

- Sites that increase to 1 acre or more may require modifications to the originally submitted Dust Control Plan.
- Sites that increase to five acres or more require a project information sign. (Rule 310, Section 308)

Permit Plan Change

Form requires permit holder name and address, reason for the change, and areas of the plan to be changed. If applicable, a revised Dust Control Plan must be submitted with the form and a new site plan may be required.

Dust Control Coordinator Change Notification

Form is to be used when a site no longer requires a Dust Control Coordinator but is still active. A site visit will be required for verification, a Primary Project Contact must be selected, and a new site plan may be required.

Control Measures

Water

When planning a contingency control method, do not choose water if it is already your primary control method. Maricopa County assumes that you will apply enough water to control dust, until it becomes an infeasible option.

Ceasing operations

Keep in mind that weather conditions play a big part in dust control and may require that you cease operations. While not appropriate in all situations, ceasing operations is an acceptable contingency measure many businesses currently use. Due to the common use of this control measure and to clarify when its use is appropriate the cease operations option has been included as a contingency option in several places in the Dust Control Plan. At the least it requires you to stop operations, evaluate why your primary control measure is not working, and make corrections. Ceasing operations lasts as long as it takes to resolve or abate the dust control issue.

Vehicle speed

Vehicle speed is not an acceptable dust control measure for all dust-generating operations. Where vehicle speed is an option for dust control, you must indicate the maximum number of vehicle trips that will be allowed, how the speed of such vehicles will be limited, and what areas or roads the limits will apply to.

Vegetative ground cover

If you choose “establish vegetative ground cover” as a control measure, you must comply with at least one of the following standards. These standards are also described in Rule 310, Section 304.3 – Stabilization requirements for Dust-Generating Operations – Disturbed Surface Area:

- Maintain a flat vegetative cover (i.e., attached/rooted vegetation or unattached vegetative debris lying on the surface with a predominant horizontal orientation that is not subject to movement by wind) that is equal to at least 50%;
- Maintain a standing vegetative cover (i.e., vegetation that is attached/rooted with a predominant vertical orientation) that is equal to or greater than 30%;
- Maintain a standing vegetative cover (i.e., vegetation that is attached/rooted with a predominant vertical orientation) that is equal to or greater than 10% and where the threshold friction velocity is equal to or greater than 43 cm/second when corrected for non-erodible elements; or
- Maintain a percent cover that is equal to or greater than 10% for non-erodible elements.

Surface gravel, recycled asphalt, or other suitable material

If you choose “apply and maintain surface gravel, recycled asphalt, or other suitable material” as a control measure for unpaved haul roads/access areas, you must comply with the following standard. This standard is also described in Rule 310, Section 304.2 – Stabilization requirements for Dust-Generating Operations – Unpaved Haul/Access Roads:

- Do not allow visible dust emissions to exceed 20% opacity and either do not allow silt loading to be equal to or greater than 0.33 oz/ft<sup>2</sup> or do not allow silt content to exceed 6%.

If you choose to “apply and maintain surface gravel, recycled asphalt, or other suitable material” as a control measure for unpaved parking areas, you must comply with the following standard. This standard is also described in Rule 310, Section 304.1 – Stabilization requirements for Dust-Generating Operations – Unpaved Parking Lot:

- Do not allow visible fugitive dust emissions to exceed 20% opacity and either do not allow silt loading to be equal to or greater than 0.33 oz/ft<sup>2</sup> or do not allow silt content to exceed 8%.

More detail on opacity and silt loading can be found in Appendix C – Fugitive Dust Test Methods at [http://www.maricopa.gov/aq/divisions/planning\\_analysis/AdoptedRules.aspx](http://www.maricopa.gov/aq/divisions/planning_analysis/AdoptedRules.aspx)

DUST CONTROL PLAN CONTROL MEASURES INSTRUCTIONS

What follows is a listing of the ten category headings (A-J) that corresponds to the same category headings (A-J) in Part 3 of the Dust Control Permit Application. Under each of the ten category headings (A-J) that follow are questions to ask and concepts to consider when designing your Dust Control Plan. You must comply with the work practice standards described in Rule 310 and you must implement, as applicable, the dust control measures in Rule 310, Section 305. Section 305 describes primary and contingency dust control measures for a variety of dust-generating operations.

When completing the Dust Control Permit Application, use this listing to select dust control measures for your project. Changes to the Dust Control Plan may be made after the application is approved by submitting a Permit Plan Change Form to the Maricopa County Air Quality Department. See information provided previously (p. 8) regarding making changes to an approved Dust Control Permit and Dust Control Plan.

EXAMPLES of how to complete Control Measures and Water Tables can be found on pages 19-22.

A. Vehicles/Motorized Equipment

A.1 Unpaved Staging Areas, Unpaved Parking Areas, and Unpaved Material Storage Areas

What areas have you set aside for parking, including areas where your employees and contractors will be parking their vehicles? What areas have you set aside for material staging? How will you keep vehicles, including the public, employees, subcontractors, utilities, and project inspectors, in areas intended for travel? Paving is acceptable as a primary control measure, if paving is done at the beginning of a project.

A.2 Unpaved Access Areas/Haul Roads

Will you be operating, hauling, or delivering equipment or materials using unpaved areas? Unpaved haul roads/access areas are unpaved roads or designated access areas for vehicles or delivery trucks. On most single residential sites, the haul road is typically the future driveway. Paving is acceptable as a primary control measure, if paving is done at the beginning of a project.

B. Disturbed Surface Areas

B.1 Before Active Operations occur

Create a plan to minimize dust before you start site work. For example Rule 310, Section 305.11 describes dust control measures to implement before site work begins. According to Section 305.11 you must either pre-water the site to depth of cuts, allowing time for penetration, or you must phase work to reduce the amount of disturbed surface areas at any one time.

If you choose to pre-water the site, you should pre-water the areas to be disturbed prior to commencing a dust-generating operation. A rule of thumb is 1 acre-foot of water (325,851 gallons) per acre of land. Pre-watering areas to depth of cuts will reduce the amount of water required for dust control. Pre-watering does not mean flooding the area to be disturbed, which may make the area unworkable. Nor does it mean allowing the watered area to dry-out before the dust-generating operation occurs, since that would prevent adequate dust control.

If you choose to phase work as a dust control measure to reduce the amount of disturbed surface areas at any one time, you must show how you will phase the project to create the least amount of disturbance at any one time. You may use the project site drawing to show the various project phases, along with a time line showing relative start and stop times. Indicate on the application that you have shown the various project phases on the project site drawing.

B.2 During Active Operations

Water must be applied continuously in front of or in conjunction with a scraper/grader/dozer. Water applied behind equipment is usually intended for compaction purposes and not dust control. If a water truck is required to leave the project site for refilling, the contingency measure must be implemented, as needed, to comply with Rule 310, Section 303 – Visible emissions requirements for Dust-Generating Operations.

If you choose to limit vehicle speed, you must indicate the maximum number of vehicle trips that will be allowed and how the speed of such vehicles will be limited.

B.3 Stabilization for any inactive period, of any length, 24 hours per day, seven days per week including weekends, after work hours, holidays

How are you going to stabilize your site during non-work hours including any and all times there are no active operations occurring but the site has not been permanently stabilized? How will you control wind generated dust?

B.4 Permanent Stabilization of Disturbed Surface Areas required within ten days following the completion of the Dust-Generating Operation if finished for a period of 30 days or longer

How will the open areas of the site be permanently stabilized? How will the site be stabilized if construction is halted?

Open areas and vacant lots need to remain stabilized (i.e., maintain a visible crust, vegetation, or surface gravel) and inaccessible to motorized vehicles. When your site is permanently stabilized and your project is complete, you should cancel your Dust Control Permit. Maricopa County has permit cancellation request forms available at 1001 N. Central Avenue, 4<sup>th</sup> Floor, or you can download the form from: <http://www.maricopa.gov/aq/divisions/compliance/dust/resources.aspx>

C. Bulk Material Handling

C.1 Off-Site Hauling onto Paved Areas Accessible to the Public

Will you be conducting debris clean up or lot clean up? Will you be exporting materials?

C.2 Hauling/Transporting within the Boundaries of the Work Site but not crossing a Paved Area Accessible to the Public

Will you be moving dirt or rock from one area to another area on your site?

C.3 Hauling/Transporting within the Boundaries of the Work Site and Crossing and/or accessing a Paved Area Accessible to the Public

Crossing a paved area is when you are traveling perpendicular to the paved area, typically entering and leaving it with the primary purpose of arriving at a destination on the other side. If you are not crossing a paved area (not traveling perpendicular to a paved area), then you are traveling along the paved area. Traveling along the paved area may take you outside the work area, unless such area has been barricaded to public travel.

C.4 Bulk Material Stacking, Loading, and Unloading Operations

Will you be trenching, backfilling, and/or importing/exporting Bulk Material?

Stacking, loading, and unloading operations include any time Bulk Materials are loaded into a truck or when materials are put into spoils piles from trenching operations.

If you choose to use water to control dust for cut and fill activities, a rule of thumb is (1) 10,000 gallon water pull for each 7,000 cubic yards of material moved per day. When determining the total amount of water necessary for a project, another rule of thumb is that it takes at least 30 gallons of water to control dust from each cubic yard of material to be moved.

C.5 Open Storage Piles

How will you control dust from storage or spoils piles? Will you have spoils and/or storage piles for any length of time?

Open storage piles include piles that are on-site for any length of time. If you apply water or dust suppressant(s) to open storage piles when not conducting stacking, loading, and unloading operations, make sure that you limit unauthorized vehicle access to the area.

D. Trackout, Carry-out, Spillage, and Erosion

D.1 Trackout Control Device

What will you use as a trackout control device if trenching removes an existing gravel pad? What will you use as a control device during curb and gutter installation? How will you direct traffic to the designated exit locations and restrict traffic from using other exit points?

Trackout control devices are preventative devices intended to reduce the amount of dirt transferred onto paved areas and entrained into the atmosphere. Trackout control devices are required at every exit to a paved area accessible to the public (any retail parking lot or public roadway that is open to public travel primarily for purposes unrelated to the dust-generating operation) for job sites 2 acres or larger or when 100 cubic yards of bulk material are hauled on-site or off-site per day. Trackout control devices include, but are not limited to, the following:

Gravel Pad

A layer of washed gravel, rock, or crushed rock that is at least one inch or larger in diameter that is maintained at the point of intersection of a paved area accessible to the public and a work site entrance to dislodge mud, dirt, and/or debris from the tires of motor vehicles and/or haul trucks, prior to leaving the work site.

Grizzly or Rumble Grate

A device (i.e., rails, pipes, or grates) used to dislodge mud, dirt, and/or debris from the tires and undercarriage of motor vehicles and/or haul trucks prior to leaving the work site.

Paving

Application and maintenance of asphalt, concrete, or other similar material to a roadway surface (i.e., asphaltic concrete, concrete pavement, chip seal, or rubberized asphalt).

Wheel Wash System

A system, station, or device either temporary or permanent, that utilizes a bath or spray of water for the purpose of cleaning mud, soil, and rock from the tires and undercarriage of vehicles to prevent tracking of those materials onto paved surfaces.

Rule 310, Section 306 addresses dust control measures for trackout control. According to Section 306 you must prevent trackout by installing, at all access points to the site, a trackout control device such as a grizzly or rumble grate, a wheel wash system, or a gravel pad, defined in Rule 310, Section 217 to be at least 30 feet wide, 50 feet long, and 3 inches deep. Or you must pave starting from the point of intersection with a paved area accessible to the public and extending for a centerline distance of at least 100 feet and a width of at least 20 feet.

It is a violation of Rule 310 if your site is required to have a trackout control device and does not, regardless of whether trackout is present.

D.2 Cleaning

Trackout/carry-out is any and all bulk materials that adhere to and agglomerate on the surfaces of motor vehicles, haul trucks, and/or equipment (including tires) and that have fallen or been deposited onto a paved area accessible to the public. You are required to immediately clean trackout/carry-out extending 25 feet or more. Trackout/carry-out that is less than 25 feet requires cleaning by the end of the work day. During import/export operations and following rain events, cleaning may need to be done on a consistent basis to control trackout/carry-out.

Cleaning trackout/carry-out includes removing any and all bulk material that has been deposited onto public roadways, medians, gutters, and sidewalks. Cleaning trackout/carry-out can be accomplished by manually sweeping up the deposits, by operating a street sweeper or wet broom, or by power washing. Some street sweepers (e.g., street sweepers with steel brushes) are more efficient than others, especially on stubborn trackout/carry-out.

Be sure to check other applicable regulations. For instance, some work sites are located in areas where the paved areas may not be cleaned by power washing with water due to Storm Water Pollution Prevention Plans (SWPP), National Pollutant Discharge Elimination Standards (NPDES), or Arizona Pollutant Discharge Elimination System (AZPDES).

It is a violation of Rule 310 if you have not cleaned trackout/carry-out, regardless of whether a trackout control device is present. If a street sweeper has been chosen as the primary control measure and is needed immediately but is not available, then you must employ the contingency measure.

E. Weed Abatement by discing or blading

If this is a long project, will weed removal or weed control be an issue in the future? Weed abatement for the purpose of this question is the removal of a weed and its roots by turning over the soil, usually with a disc or blade implement, thereby disturbing the surface area and removing a means of stabilizing the surface area.

F. Blasting operations

Will blasting be conducted for removal of structural concrete? Is there an available site for stockpiling material? Will underlying material require blasting?

G. Demolition activities

If concrete removal quantity is sizable, is there an available dump site? Has dust control for this staging or storage area been addressed?

H. Wind Event

A “wind event” is when the 60-minute average wind speed is greater than 25 m.p.h. In category H, some control measures are to be used in the “nonattainment area” and some control measures are to be used in the “attainment area”. A “nonattainment area” is an area designated by the Environmental Protection Agency (EPA) as exceeding national ambient air quality standards based upon data collected through air quality monitoring.

Maricopa County does not meet the national ambient air quality standards for particulate matter (PM<sub>10</sub>). Consequently, Maricopa County is considered a nonattainment area for PM<sub>10</sub>. The general geographical boundary of Maricopa County’s PM<sub>10</sub> nonattainment area is as follows: Salt River Mountains on the south, Phoenix Mountains on the northwest, Estrella Mountains on the southwest, White Tank Mountains on the west, and Superstition Mountains on the east. Maricopa County’s PM<sub>10</sub> nonattainment area includes all cities within this geographical boundary.

What has been done to address a possible wind event when no one is on-site, such as on a weekend or a holiday?

I. Water

For categories A-H in Part 3 of the Dust Control Permit Application, for which you choose to “apply water” as a dust control measure, you must describe the size and number of pieces of the equipment that you will use to supply the water, and the size and number of pieces of equipment that you will use to apply the water.

Soil Rating. For the purpose of completing the minimum water availability tables, soil types have been simplified from the four ratings categories in the Appendix F Soil Map into two rating categories. A Severe rating includes clay, silty clay, and sandy clay while the Moderate rating includes all other soil types. (See pages 15-17 for additional information to assist in determining soil rating)

Water supply means how water will be supplied to the site. Equipment options for water supply include, but are not limited to, metered hydrant, water tower, and water pond.

Water application system means how water will be applied to the site. Equipment options for water application system include, but are not limited to, hoses, water truck, water pull, and water buffalo.

Minimum water availability means water supply in conjunction with water application system.

- A minimum water availability table is included for different construction phases to be used in Part 3 where “apply water” is chosen as a dust control measure.
- Each minimum water availability table lists the minimum amount of water that you must have available for the duration of the project for dust control and compaction in severe and moderate soil types.
- Use each minimum water availability table to determine the size and number for the equipment that you will use to supply the water and to apply the water.

Regardless of the minimum amount of water that you have available to your site or on your site and regardless of your water supply and water application, in no case shall you exceed 20% opacity. Test methods for opacity can be found in Appendix C of the Maricopa County Air Pollution Control Regulation. (See an online version of Appendix C at [http://www.maricopa.gov/aq/divisions/planning\\_analysis/AdoptedRules.aspx](http://www.maricopa.gov/aq/divisions/planning_analysis/AdoptedRules.aspx) )

J. Dust Suppressants other than water

Although water is a dust suppressant, the information required by Table J in Part 3 in the Dust Control Permit Application should not include information on water supply and water application systems.

The information required by Table J in Part 3 of the Dust Control Permit Application is for all other dust suppressants that you use. Fill out the applicable areas in Table J in Part 3 of the Dust Control Permit Application. Be sure to attach information on environmental impacts and approvals or certifications related to appropriate and safe use for ground application. Also, attach product specification(s) and application sheet(s) or label instructions.

Different types of soil require more intensive water use or the use of water in combination with dust suppressants, in order to meet the requirements of Rule 310. Brief descriptions of dust suppressants and related information can be found in “Appendix – Additional Information on Key Topics” in the next segment of these instructions.



C. APPENDIX – ADDITIONAL INFORMATION ON KEY TOPICS

GLOSSARY OF TERMS (A more complete list of definitions can be found in Rule 310, Section 200)

**Caliche** – Common in, and somewhat unique to, the southwestern United States is a soil component known as caliche. Caliche is defined as an amorphous (non-crystalline) mass of calcium carbonate (limestone) mixed with clay. Caliche is a general term for any secondary calcium carbonate (CaCO<sub>3</sub>) that forms in sediments or in voids and crevices within bedrock just below the surface in semiarid regions, as a result of soil-forming processes (pedogenic caliche) or ground-water evaporation (ground-water caliche). Caliche is material left behind by the evaporation of ground water or soil moisture that is no longer present at that level, although ground water may be present at much lower depths beneath the caliche.

**Disturbed Surface Area** – A portion of the earth's surface or material placed on the earth's surface that has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed native condition if the potential for the emission of fugitive dust is increased by the movement, destabilization, or modification. For the purpose of Rule 310, an area is considered to be a disturbed surface area until the activity that caused the disturbance has been completed and the disturbed surface area has been permanently stabilized.

**Dust-Generating Operation** – Any activity capable of generating fugitive dust, including but not limited to, land clearing, earthmoving, weed abatement by discing or blading, excavating, construction, demolition, bulk material handling, storage and/or transporting operations, vehicle use and movement, the operation of any outdoor equipment, or unpaved parking lots. For the purpose of Rule 310, landscape maintenance and playing on or maintaining a field used for non-motorized sports shall not be considered a dust-generating operation. However, landscape maintenance shall not include grading, trenching, or any other mechanized surface disturbing activities performed to establish initial landscapes or to redesign existing landscapes.

**Fugitive Dust** – The particulate matter not collected by a capture system that is entrained in the ambient air and is caused from human and/or natural activities, such as, but not limited to, movement of soil, vehicles, equipment, blasting, and wind. For the purpose of Rule 310, fugitive dust does not include particulate matter emitted directly from the exhaust of motor vehicles and other internal combustion engines, from portable brazing, soldering, or welding equipment, and from pile drivers, and does not include emissions from process and combustion sources that are subject to other rules in Regulation III-Control Of Air Contaminants of the Maricopa County Air Pollution Control Regulations.

APPLICABLE MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS

1. Rule 200 (Permit Requirements), Section 305 (Dust Control Permit)

- Requires any dust-generating operation disturbing 0.10 acres (4,356 sq.ft.) or more to obtain a permit,
- Applies the provisions of Rule 310 (Fugitive Dust from Dust-Generating Operations) to Dust Control permits.

2. Rule 200 (Permit Requirements), Section 309 (Standards for Applications)

- Gives the Control Officer authority to design permit applications that contain all the information necessary to enable the Control Officer to make the determination to grant or deny a permit,
- Such applications can contain terms and conditions as the Control Officer deems necessary to assure a source's compliance with the requirements of the Maricopa County Air Pollution Control Regulations.

3. Rule 310 (Fugitive Dust from Dust-Generating Operations)

- Requires an owner and/or operator of a dust-generating operation to submit a Dust Control Plan with any Dust Control Permit as well as before commencing any routine dust-generating operation at a site that has obtained or must obtain a Title V, Non-Title V, or general permit under Maricopa County Air Pollution Control Regulations, Regulation II (Permits And Fees),
- Required from initial ground breaking through final stabilization,
- Valid for one year from the date of issuance,
- Re-application must be submitted at least 14 calendar days prior to the expiration date of the original permit, if 0.10 acres (4,356 sq.ft.) or more remain disturbed at the expiration of the original permit,
- Must describe all control measures to be implemented before, after, and while conducting any dust-generating operation, including during weekends, after work hours, and on holidays,
- Maricopa County approves, disapproves, or conditionally approves a Dust Control Plan, in accordance with the criteria used to approve, disapprove, or conditionally approve a permit,
- Failure to comply with the provisions of the approved Dust Control Plan and/or failure to comply with all other requirements of Rule 310 is deemed to be a violation of Rule 310,
- Once approved by the Control Officer, the Dust Control Permit and Dust Control Plan must be posted on-site.
- Any person who conducts Dust-Generating operations that require a Dust Control Plan shall keep a written record of self-inspection on each day Dust-Generating Operations are conducted. (Also referred to as a “Dust Control Log”)
- Permit holder must cancel the permit when the project is complete or when the permit holder no longer has control over the day-to-day operations on the site. (See pages 8-9 of the Instructions)

PROJECT INFORMATION SIGN

For sites that are five acres or larger a project information sign must be posted and maintained at the main entrance to the project where members of the public can easily view and read the sign (Rule 310, Section 308). The sign must have a white background with black block lettering that is at least four inches high and contain at least the following information:

- Project name and permittee's name;
- Current Dust Control permit number and expiration date;
- Name and local phone number(s) of person(s) responsible for dust control matters; and
- Text stating: “Dust complaints? Call Maricopa County Air Quality Department – (Insert the accurate Maricopa County Air Quality Department complaint line telephone number).”

SOIL TEXTURE AND TYPE CLASSIFICATION SUMMARY

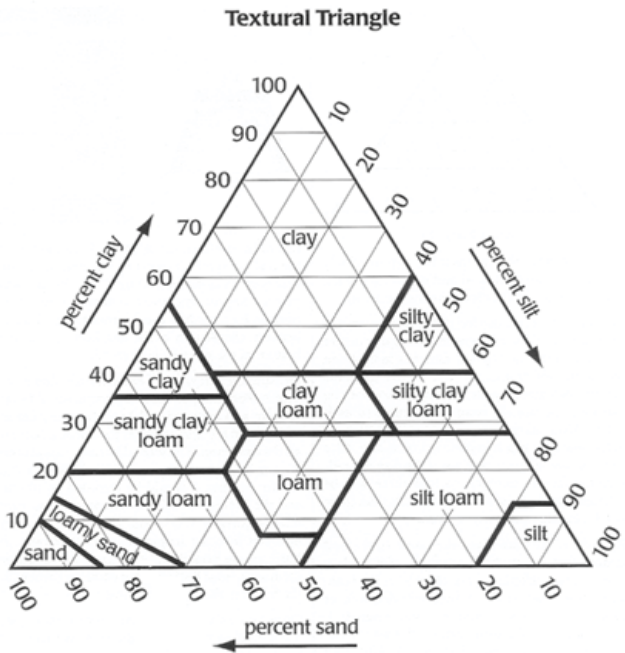
According to Rule 310, Section 402.5 – Dust Control Plan Requirements for construction projects one acre or larger (except for routine maintenance and repair done under a block permit), the soil texture that is naturally present and the texture of any soil that will be imported to the site must be designated. (See Question #20)

Soil texture is the single most important physical property of the soil. Knowing the soil texture alone will provide information about: (1) water flow potential, (2) water holding capacity, and (3) suitability for many urban uses. Soils can be divided into three basic classifications: sands, silts, and clays. (Caliche, commonly found in the Southwest, is basically a form of clay. See Glossary of Terms, p. 14 of the Instructions for more information regarding caliche).

There is great variation within the three basic classifications: sands, silts, and clays, but these classifications will suffice for the purpose of choosing appropriate dust control measures for a work site.

Soils are visually classified by the Unified Soil Classification System on boring logs. Grain-size analysis and Atterberg Limits Tests are often performed on selected samples, and the results entered onto a plasticity chart, to aid in classification. The classification system is outlined in the chart on page 16 of the Instructions. For a more detailed description of the system, including plasticity and liquid limits, see "The Unified Soil Classification System" ASTM Designation D2487 at <http://www.astm.org/Standards/D2487.htm>

Once the amount of sand, silt, and clay is known, you can give the soil a texture class name. These names change depending on how much of each type of particle is in the soil. The textural triangle (shown below) is used to determine the names of the textural classes.



Different textural classes will require more intensive water use or the use of water in combination with dust suppressants (see the tables on pages 16 and 17 of the Instructions), so that visible fugitive dust emissions do not exceed 20% opacity in accordance with Rule 310, Section 303 – Visible Emissions requirements for Dust-Generating Operations. Test methods for opacity can be found in Appendix C of the Maricopa County Air Pollution Control Regulations (see Appendix C – Fugitive Dust Test Methods at [http://www.maricopa.gov/aq/divisions/planning\\_analysis/AdoptedRules.aspx](http://www.maricopa.gov/aq/divisions/planning_analysis/AdoptedRules.aspx) )

Unified Classification System for Soils

Major Division				Group Symbol	Typical Description
Coarse-Grained Soils (less than 50% passes No. 200 sieve)	Gravels (50% or less of course fraction passes No. 4 sieve)	Clean Gravels (less than 5% passes No. 200 sieve)		GW	Well graded gravels, gravel-sand mixtures or sand-gravel-cobble mixtures
		Gravels With Fines (more than 12% passes No. 200 sieve)	Limits plot below "A" line & hatched zone on plasticity chart	GP	Poorly graded gravels, gravel-sand mixtures, or sand-gravel-cobble mixtures
			Limits plot above "A" line & hatched zone on plasticity chart	GM	Silty gravels, gravel-sand-silt mixtures
				GC	Clayey gravels, gravel-sand-clay mixtures
	Sands (more than 50% of course fraction passes No. 4 sieve)	Clean Sands (less than 5% passes No. 200 sieve)		SW	Well graded sands, gravelly sands
		Sands With Fines (more than 12% passes No. 200 sieve)	Limits plot below "A" line & hatched zone on plasticity chart	SP	Poorly graded sands, gravelly sands
			Limits plot above "A" line & hatched zone on plasticity chart	SM	Silty sands, sand-silt mixtures
				SC	Clayey sands, sand-clay mixtures
Fine-Grained Soils (50% or more passes No. 200 sieve)	Silts (limits plot below "A" line & hatched zone on plasticity chart)	Silts Of Low Plasticity (liquid limit less than 50)		ML	Inorganic silts, clayey silts with slight plasticity
		Silts Of High Plasticity (liquid limit more than 50)		MH	Inorganic silts of high plasticity, silty soils, elastic silts
	Clays (limits plot above "A" line & hatched zone on plasticity chart)	Clays Of Low Plasticity (liquid limit less than 50)		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		Clays Of High Plasticity (liquid limit more than 50)		CH	Inorganic clays of high plasticity, fat clays, silty and sandy clays of high plasticity

Note: Coarse-grained soils with between 5% & 12% passing the No. 200 sieve and fine-grained soils with limits plotting in the hatched zone on the plasticity chart to have dual symbol.

SOIL TEXTURE AND TYPE MAP SUMMARY

The soil map in Appendix F of the Maricopa County Air Pollution Control Regulations (a large printed soil map is available for viewing at the One Stop Shop while a smaller, downloadable version can be found at: [http://www.maricopa.gov/aq/divisions/planning\\_analysis/rules/docs/AppendixF-0404.pdf](http://www.maricopa.gov/aq/divisions/planning_analysis/rules/docs/AppendixF-0404.pdf) ) designates soil texture ratings within the PM<sub>10</sub> nonattainment area. See page 13 for more information regarding the PM<sub>10</sub> nonattainment area in Maricopa County.

Four soil texture ratings in the table below – severe, moderate, slight, and very slight – refer to a soil's potential to create PM<sub>10</sub>. The table summarizes the soil map in Appendix F and designates control measures that could be used with each soil type. Also, the table shows which soil texture rating relates to which group symbol used in the chart of the Unified Classification System for Soils previously on this page.

The soil map in Appendix F is to be used to identify soil types for purposes of completing Question #20 of the Dust Control Permit Application, in lieu of submitting actual measured soil types with your Dust Control Plan. However, the actual measured soil types take precedence over any mapped soils.

If any requirements stated in the Instructions or in the Dust Control Permit Application contradict recommendations of a site geotechnical report, attach a copy of the report to the Dust Control Plan. The report will be incorporated as part of the Dust Control Plan.

Summary of Soil Map in Appendix F of the Maricopa County Air Pollution Control Regulations

Map Color Designations	Soil Texture Ratings	Soil Types	Group Symbols	Characteristics Of Soil	Control Measures
Red	Severe	Clay Silty Clay Sandy Clay	CL CH	• Low hydraulic conductivity (the rate at which water can flow through the soil) • Retains water • Hardens in heat of summer • Warms-up slower in spring	Apply water Or Apply water and a dust suppressant
Orange	Moderate	Loam Silty Loam Clay Loam Sandy Clay	ML MH	• Retains more water than sandy soil • Drains well • Easier to work than clay	Apply water Or Apply water and a dust suppressant
Green	Slight	Very Fine Sandy Loam	SW SP SM SC	• Retains more water than sandy soil • Drains well • Easier to work than clay	Apply water
Light Yellow	Very Slight	Fine Sand Coarse Sand	GW GP GM GC	• High hydraulic conductivity (the rate at which water can flow through the soil) • Tends not to compact	Apply water

ADDITIONAL ASSISTANCE

You can reach the MCAQD Dust Compliance Division offices at 1001 North Central Avenue, Suite 400 in Phoenix, Arizona, by calling 602-506-6010, or on their website at [www.maricopa.gov/aq/divisions/compliance/dust](http://www.maricopa.gov/aq/divisions/compliance/dust) Additional useful information and websites are listed below:

- Dust Compliance main webpage: [www.maricopa.gov/aq/divisions/compliance/dust/Default.aspx](http://www.maricopa.gov/aq/divisions/compliance/dust/Default.aspx)
- MCAQD Complaint Line for all complaints including dust related items: 602-506-6010
- Dust Compliance resources including:
  - Sample Dust Control Logs
  - Applications
  - Other Forms
  - Informational brochurecan be found at [www.maricopa.gov/aq/divisions/compliance/dust/resources.aspx](http://www.maricopa.gov/aq/divisions/compliance/dust/resources.aspx)
- Information on current fees can be found on the MCAQD's web site: [www.maricopa.gov/aq/divisions/permit\\_engineering/permit\\_fees.aspx](http://www.maricopa.gov/aq/divisions/permit_engineering/permit_fees.aspx)
- Questions concerning Asbestos NESHAP regulations should be referred to the Maricopa County's Asbestos NESHAP Coordinator at 602-506-6708 or 602-506-0421. Forms, contacts, regulations and additional information not covered in the application package may be obtained on the MCAQD website at [http://www.maricopa.gov/aq/divisions/compliance/air/asbestos\\_neshap/Default.aspx](http://www.maricopa.gov/aq/divisions/compliance/air/asbestos_neshap/Default.aspx)
- Maricopa County Air Pollution Control Regulations Rule 200 (Permit Requirements) and Rule 310 (Fugitive Dust from Dust-Generating Operations) which contain information regarding the requirements and work practices associated with this application can be found at: [www.maricopa.gov/aq/divisions/planning\\_analysis/AdoptedRules.aspx](http://www.maricopa.gov/aq/divisions/planning_analysis/AdoptedRules.aspx)
- Document Request Forms, in the event the permit and application are not received after the processing and mail period have passed: [www.maricopa.gov/materials/Document\\_Request/public\\_record\\_request.asp](http://www.maricopa.gov/materials/Document_Request/public_record_request.asp)
- Assistance in completing the application may be available by calling the Training Line at 602-372-1467 or online at: <http://www.maricopa.gov/aq/divisions/compliance/dust/Default.aspx>

DUST SUPPRESSANTS SUMMARY

Dust suppressants are defined in Rule 310 as: water, hygroscopic material, solution of water and chemical surfactant, foam, non-toxic chemical stabilizer or any other dust palliative, which is not prohibited for ground surface application by the Environmental Protection Agency (EPA) or the Arizona Department Of Environmental Quality (ADEQ) or any applicable law, rule, or regulation, as a treatment material for reducing fugitive dust emissions.

Dust suppressants work by either agglomerating the fine particles, adhering/binding the surface particles together, or increasing the density of the road surface material. They reduce the ability of the surface particles to be lifted and suspended by either vehicle tires or wind and non-water suppressants do so with a minimum amount of added water and usually a longer useful life than water alone.

One important factor in evaluating dust suppressants is the long-term monetary cost versus that of water alone. Environmental impacts of both methods on water quality and plant life must also be considered.

More detail can be found on the MCAQD Dust Compliance website at: [www.maricopa.gov/aq/divisions/compliance/dust/resources.aspx](http://www.maricopa.gov/aq/divisions/compliance/dust/resources.aspx)

DUST SUPPRESSANT CATEGORIES:

- 1. **Water-Attracting Chemicals:** Chlorides, Salts, Brine Solutions.
- 2. **Organic, Non-Bituminous Chemicals:** Lignosulfonates, Sulphite, Liquors, Tall Oil Pitch, Pine Tar, Vegetable Oils, Molasses.
- 3. **Electro-Chemical Stabilizers:** Sulphonated Petroleum, Ionic Stabilizers, Bentonite.
- 4. **Polymers:** Polyvinyl Acrylics, Acetates.
- 5. **Microbiological Binders:** Cryptogams, Blue-Green Algae Inoculants, Enzyme Slurries.

DUST SUPPRESSION TECHNOLOGIES:

In addition to categories of dust suppressants, the subject can also be divided by dust suppression technologies including the following:

- 1. **Wetting Agents:** Surfactant (see below) formulations that improve the ability of water to wet and agglomerate fine particles.
- 2. **Foaming Agents:** Surfactant formulations used to convert water and air into a dry, stable, small-bubbled foam with a consistency similar to shaving cream.
- 3. **Binding/Agglomerating Agents:** Performs similar functions as wetting and foaming agents but provides a longer residual effect than water alone and thus is used when it is either impractical or uneconomical to control dust using just water technologies.
- 4. **Crusting Agents:** Binding agents that are chemically similar to latex paint in that their primary active components are water-based latex polymers that cure to form a mechanically stable water-insoluble film.

DUST SUPPRESSION MATERIALS:

- 1. **Surfactants:** Surface-active agents, make water more efficient by making water “wetter”, lowering its surface tension allowing drops of water to spread out and contact surfaces more effectively
- 2. **Tackifiers:** Substances used with water to hold together mulches and other dust suppressants, binding small particles together without forming a hard crust
- 3. **Flocculants:** Chemicals that cause a dispersed colloidal system (such as clay) to coagulate and form flocs. Most flocculants are either multivalent cations such as calcium, magnesium, aluminum, or ion polymers. High pH, high salinity, and high temperature can also cause clay flocculation.

EXAMPLES FOR CORRECTLY COMPLETING PART 3 – DUST CONTROL PLAN

EXAMPLE FOR USE OF THE “NOT APPLICABLE” OPTION

Z.1 Operations

- ☐ P ☐ C Apply water (Fill out Category I, “Water” on pp. 37-41)
- ☐ P ☐ C Pave (Choose one of the following): ☐ Beginning of Project\* ☐ During Project\* ☐ End of Project\*  
\*Must specify additional primary control measure(s) that will be in place prior to paving
- ☐ P ☐ C Limit vehicle trips to space provided, list the number of employee speeds will be restricted to no more than 15 m.p.h. In the s/haul roads each day (including and a description of how vehicle

This is an INCORRECT EXAMPLE.

WHY? If a Control Measure is “not applicable” you must provide an explanation for why.

- ☒ P ☐ C Cease operations, NO measure.
- ☐ P ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable N/A

Z.1 Operations

- ☐ P ☐ C Apply water (Fill out Category I, “Water” on pp. 37-41)
- ☐ P ☐ C Pave (Choose one of the following): ☐ Beginning of Project\* ☐ During Project\* ☐ End of Project\*  
\*Must specify additional primary control measure(s) that will be in place prior to paving
- ☐ P ☐ C Limit vehicle trips to space provided, list the number of employee speeds will be restricted to no more than 15 m.p.h. In the ss areas/haul roads each day (including trucks) and a description of how vehicle

This is a CORRECT EXAMPLE of a completed “not applicable” statement with a full explanation.

- ☒ P ☒ C Cease operations, NO measure.
- ☐ P ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable N/A because there will not be any operations of this type being performed as part of this project



EXAMPLES FOR CORRECTLY COMPLETING PART 3 – DUST CONTROL PLAN (continued)

EXAMPLE FOR USE OF CHECKBOXES

Z.1 Operations

☐ P ☐ C Apply water (Fill out Category I, "Water" on pp. 37-41)

☐ P ☐ C Pave (Choose one of the following): ☐ Beginning of Project\* ☐ During Project\* ☐ End of Project\*  
\*Must specify additional primary control measure(s) that will be in place prior to paving

☐ P ☐ C Limit vehicle trips to space provided, list the number of employee speeds will be restricted to no more than 15 m.p.h. In the areas/haul roads each day (including streets) and a description of how vehicle speeds will be restricted.

☒ P ☐ C Cease operations, NO other control measures.

☐ P ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

This is an INCORRECT EXAMPLE.

WHY? If a Control Measure checkbox is blacked out it CANNOT be used.

Z.1 Operations

☒ P ☐ C Apply water (Fill out Category I, "Water" on pp. 37-41)

☐ P ☐ C Pave (Choose one of the following): ☐ Beginning of Project\* ☐ During Project\* ☐ End of Project\*  
\*Must specify additional primary control measure(s) that will be in place prior to paving

☐ P ☐ C Limit vehicle trips to space provided, list the number of employee speeds will be restricted to no more than 15 m.p.h. In the areas/haul roads each day (including streets) and a description of how vehicle speeds will be restricted.

☐ P ☒ C Cease operations, NO other control measures.

☐ P ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

This is a CORRECT EXAMPLE of how to use available Control Measure checkboxes and avoid using non-available Control Measure checkboxes.

EXAMPLES FOR CORRECTLY COMPLETING PART 3 – DUST CONTROL PLAN (continued)

There are two main types of tables (with multiple variations) used in the "Category I. Water" portion of Part 3 of the Application. Following is an example of each of the main two table types and how to use each:

CATEGORY I. WATER, EXAMPLE 1:

Soil Texture Rating	Project Phase - Staging/Parking Areas/Storage Areas Including Landscaping Installation	
	Total Acres Disturbed	Minimum Water Available
Severe (clay, silty clay, sandy clay)	0 - 2 acres	375 - 750 gallons per day
	2 - 10 acres	750 - 3,500 gallons per day
	10 - 100 acres	3,500 - 35,000 gallons per day
	> 100 acres	> 35,000 gallons per day
Moderate (all other classifications)	0 - 2 acres	225 - 400 gallons per day
	2 - 10 acres	400 - 2,250 gallons per day
	10 - 100 acres	2,250 - 22,500 gallons per day
	> 100 acres	> 22,500 gallons per day

Average Daily Disturbance in Acres

8 acres

Number of Gallons per day

750 - 3,500 gal/day

Supply	Quantity and Size	Application	Quantity and Size
<input checked="" type="checkbox"/> Metered Hydrant	(1) 2"	<input type="checkbox"/> Hose	
<input type="checkbox"/> Water Tower		<input checked="" type="checkbox"/> Water Truck	(1) 2,000 gal
<input type="checkbox"/> Water Pond		<input type="checkbox"/> Water Pull	
<input type="checkbox"/> Off-Site		<input type="checkbox"/> Water Buffalo	
<input type="checkbox"/> Other		<input type="checkbox"/> Other	

Example 1. Illustration:

- Assume the project has a disturbed area of 8 acres for staging, storage and some parking with a severe soil rating.
- Begin with the second line under the headings in the table above. This selection shows a range of 2 – 10 acres of Total Acres Disturbed in the Severe, Soil Texture Rating field.
- Following this to the Minimum Water Available column on the right gives a range of 750 – 3,500 gallons per day. This means that even if an amount of water toward the lower end of the range is being used (750 gallons per day) the project must have the availability of water, along with the equipment to apply it, up to the highest end of the range (3,500 gallons per day), should conditions demand the higher application.
- The total water needed and its distribution must now be reflected in the quantity and size of the water supply methods as well as the quantity and size of the water application methods that you enter in their respective columns.

EXAMPLES FOR CORRECTLY COMPLETING PART 3 – DUST CONTROL PLAN (continued)

CATEGORY I. WATER, EXAMPLE 2:

Soil Texture Rating	Project Phase - Mass Grading (Includes basements)	
	Minimum Water Available (November – February)	Minimum Water Available (March – October)
Severe (clay, silty clay, sandy clay)	5,000 gallons per acre per day	10,000 gallons per acre per day
	and 30 gallons per cubic yard of material moved	and 30 gallons per cubic yard of material moved
Moderate (all other classifications)	5,000 gallons per acre per day	10,000 gallons per acre per day
	and 30 gallons per cubic yard of material moved	and 30 gallons per cubic yard of material moved

Average Daily Disturbance in Acres 10 acres Number of Gallons per acre per day 10,000 gal/acre/day

Daily Minimum Water Availability 100,000 gallons per day AND 90,000 gallons for material moved  
(Number of Acres Disturbed) × (Number of Gallons per acre per day)

Supply	Quantity and Size	Application	Quantity and Size
<input checked="" type="checkbox"/> Metered Hydrant	<u>(1) 2"</u>	<input type="checkbox"/> Hose	
<input type="checkbox"/> Water Tower		<input checked="" type="checkbox"/> Water Truck	<u>(2) 5,000 gal</u>
<input checked="" type="checkbox"/> Water Pond	<u>(1) 700,000 gal</u>	<input checked="" type="checkbox"/> Water Pull	<u>(3) 10,000 gal</u>
<input type="checkbox"/> Off-Site		<input type="checkbox"/> Water Buffalo	
<input type="checkbox"/> Other		<input type="checkbox"/> Other	

Example 2. Illustration:

- Assume the project entails grading 10 acres and all 10 acres are to be graded each day for five days during the March thru October time period. Additionally, 3,000 cubic yards of material are to be removed over the five days.
- 10 acres x 10,000 gallons per acre per day = 100,000 gallons per day for all 10 acres, AND  
3,000 cubic yards x 30 gallons per cubic yard = 90,000 gallons for the five day period
- Total water need for all five days = 590,000 gallons
- The total water needed and its distribution must now be reflected in the quantity and size of the water supply methods as well as the quantity and size of the water application methods that you enter in their respective columns.



Maricopa County  
Air Quality Department

Return all applications to: **One Stop Shop**  
501 N. 44<sup>th</sup> Street, Suite 200  
Phoenix, Arizona 85008  
Phone (602) 372-1071 Fax (602) 372-1078

PART 2  
DUST CONTROL PERMIT APPLICATION FORM

For Office Use Only			
District #		Date Issued	
Permit #		Approved By	
Fee Paid/Acreage		Cross Streets	

IS MY APPLICATION COMPLETE?

- ☐ 1. **Dust Control Permit Application Form:** Completely answer all questions; fill in all blanks and check boxes as appropriate, in both the Applicant and Project Information areas of the Form. Attach a copy of the Project Site Drawing.
- ☐ 2. **Dust Control Plan:** Rule 310, Section 402 (Dust Control Plan requirements) requires the submission of a Dust Control Plan with your application. You may submit Part 3 of this application after completely filling in every category or sub-category; a primary and contingency control measure must be chosen for each or an explanation of why the category or sub-category is not applicable must be provided. Alternately, you may submit your own Dust Control Plan that conforms to Rule 310, Section 402 describing all dust control measures to be used during the project.
- ☐ 3. **Fee Payment:** Have the appropriate fee ready when submitting the completed permit application to the One Stop Shop referenced above, see the MCAQD website: [www.maricopa.gov/aq/divisions/permit\\_engineering/permit\\_fees.aspx](http://www.maricopa.gov/aq/divisions/permit_engineering/permit_fees.aspx) or FAQ #3 in the instructions. Fees can be paid with a check or money order when submitting the application in person or by mail. When submitting the application in person the fees may also be paid with a credit card or cash.

Applicant Information (See Instructions page 5)

<b>Applicant Information must be fully and accurately completed, including full legal names of entities and individuals (no DBA's or trade names). For all Applicants, appropriate registration in the State of Arizona will be verified with the Arizona Corporation Commission or other applicable resources before a permit will be issued.</b>		
<b>1. Applicant:</b>		
Relationship to property (Check all that apply):		
<input type="checkbox"/> Property Owner	<input type="checkbox"/> General/Prime Contractor	<input type="checkbox"/> Developer <input type="checkbox"/> Lessee
Type of Entity:		
<input type="checkbox"/> Corporation	<input type="checkbox"/> Limited Liability Company or Partnership	<input type="checkbox"/> Sole Proprietor <input type="checkbox"/> Individual <input type="checkbox"/> Government
Name:		
Address:		
City:	State:	Zip:
Phone:	Fax:	
E-Mail Address:		
Local Mailing Address (if not the same as above):		
Contractor License Number:		

<b>2. Is Applicant a wholly owned subsidiary of another Company?</b> <input checked="checked" type="checkbox"/> Yes <input type="checkbox"/> No			
If "Yes", please provide all requested information below. If "No", please proceed to Question 3:			
<b>Parent Company (if Applicant is a wholly owned subsidiary):</b>			
Type of Entity: <input type="checkbox"/> Corporation <input type="checkbox"/> Limited Liability Company or Partnership <input type="checkbox"/> Sole Proprietor <input type="checkbox"/> Individual <input type="checkbox"/> Government			
Name:			
Address:			
City:		State:	Zip:
Phone:		Fax:	
State of Incorporation or Registration:			
<b>3. Applicant President/Owner:</b>			
Name:			
Address:			
City:		State:	Zip:
Phone:		Fax:	
<b>4. Property Owner/Developer, if not Applicant:</b>			
Type of Entity: <input type="checkbox"/> Corporation <input type="checkbox"/> Limited Liability Company or Partnership <input type="checkbox"/> Sole Proprietor <input type="checkbox"/> Individual <input type="checkbox"/> Government			
Name:			
Address:			
City:		State:	Zip:
Phone:		Fax:	
Contact Person:			
<b>5. Dust Control Coordinator:</b> <ul style="list-style-type: none"> <li>At least one Dust Control Coordinator is required to be on-site at all times during primary dust-generating operations for any site with five acres or more of disturbed surface area subject to a permit issued by the Control Officer requiring control of PM<sub>10</sub> emissions from dust-generating operations</li> <li>List additional Dust Control Coordinators on a separate sheet of paper and include following this sheet</li> </ul>			
Name:			
Title:		Company Name:	
On-Site Phone:		Mobile:	Fax:
E-mail Address:			
Dust Control Badge ID Number:		Expiration Date:	
<b>6. Primary Project Contact:</b> <ul style="list-style-type: none"> <li>Provide a Primary Project Contact for all sites with a disturbed surface area subject to a permit issued by the Control Officer requiring control of PM<sub>10</sub> emissions from dust-generating operations</li> <li>State if the Primary Project Contact is already referenced in Question #5 above or provide all of the following:</li> </ul>			
Name:			
Title:		Company Name:	
On-Site Phone:		Mobile:	Fax:
E-mail Address:			

<b>7. Certification by a Responsible Official of the Applicant:</b>	
<p>A Responsible Official of the Applicant is the person who will be contacted or named in any enforcement action initiated by the Maricopa County Air Quality Department or the Maricopa County Attorney's Office. Pursuant to Rule 310, Section 401.3, the signature on the Dust Control Permit Application shall constitute agreement to accept responsibility for meeting the conditions of the Dust Control Permit and for ensuring that control measures are implemented throughout the project site and during the duration of the project.</p> <p>Arizona Revised Statute § 13-2704 makes it a criminal offense to knowingly make a false material statement to a public servant in connection with an application for any benefit, privilege, or license.</p> <p>I hereby certify that, based on information and belief formed after reasonable inquiry, the statements and information in the Dust Control Permit Application, including Applicant Information, Project Information, and the Dust Control Plan, are true, accurate, and complete.</p>	
Signature: _____	
Printed Name: _____	Title: _____
<b>8. Application completed by (if other than Signatory):</b>	
Signature: _____	
Printed Name: _____	Title _____
Phone: _____	Fax: _____
E-mail Address: _____	

### Project Information (See Instructions page 6)

<b>9. Name of Project:</b>		
<b>10. Project Location:</b> (If address is not available, complete Other Location information as fully as possible)		
Address:		
City:	State: AZ	Zip:
Nearest Major Cross Street North/South:		
Nearest Major Cross Street East/West:		
Is this location: <input type="checkbox"/> Unincorporated Area (County) <input type="checkbox"/> Incorporated Area (City)		
<b>Other Location information:</b> (If address is not available provide all information possible below)		
County Assessor's Parcel Number(s):		
Master Plan Community Number(s):		
Geographic Coordinates:		
<b>11. Project Location by Township (N or S), Range (E or W), Section (1-36):</b>		
Township:	Range:	Section:
<b>12. Brief Project Description:</b>		
<b>13. Will a basement or underground parking be excavated?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>14. Will building occur on a pre-existing pad/prepared pad?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>15. Size of Project:</b>		
Estimated acres to be graded:		
Estimated cubic yards of Bulk Material to be moved within the boundaries of the project:		
Estimated cubic yards of import Bulk Material:		
Estimated cubic yards of export Bulk Material:		
Total acres that will be disturbed throughout the duration of this Permit, including staging areas, stockpiles, access and haul roads, parking, driveways, as well as temporary storage yards:		



**Attach a separate page (8½" x 11") with a drawing showing all of the following elements:**

(NOTE: A Dust Control Permit will not be issued unless a drawing is submitted)

- Example** (simplified, not to scale):

☐ No

**18. Estimated Project Start Date** (month/day/year). If this is a re-application, list the **original** project start date:

20. List Soil Designations from Appendix F in Maricopa County Air Pollution Control Regulations or, if attaching a copy of the site geotechnical report, check here ☐

Texture of soil naturally present on work site	Texture of soil to be imported onto work site

21a. Does the Project include demolition or renovation? ☐ Yes ☐ No

21c. Has the property ever been used as a ranch, farm, business or any other commercial or industrial purpose? ☐ Yes ☐ No

21d. Is there a guesthouse, more than one livable structure on the property, or is work being done in conjunction with another property in the area? ☐ Yes ☐ No

21e. Is this a residential property? ☐ Yes ☐ No

21g. Has an asbestos inspection been conducted by an AHERA Certified Building Inspector within the last 12 months before the time of scheduled activities? ☐ Yes ☐ No

21i. Has a 10-Day NESHAP Notification been submitted? ☐ Yes ☐ No

**21j. 10-Day NESHAP Notification submittal date (Attach a copy):**

**21k. 10-Day NESHAP Notification number: ASB0**

**21I. 10-Day NESHAP Notification submitted by:** (provide name of the contractor, individual, etc.)

For Central Office Use Only

Demolition Notification number on file:	Approved by:
Renovation Notification number on file:	Date approved:
Scheduled days of operation:	Date contacted:
Follow up:	Phone approval:
	Date contacted:



**Maricopa County**  
Air Quality Department

Return all applications to: **One Stop Shop**  
501 N. 44<sup>th</sup> Street, Suite 200  
Phoenix, Arizona 85008  
Phone (602) 372-1071 Fax (602) 372-1078

**PART 3**  
**DUST CONTROL PERMIT APPLICATION DUST CONTROL PLAN**

**DUST CONTROL PLAN**

(See Instructions pages 8-13, 19-22)

The following 13 pages will become the dust control plan that will be followed for the project named in this permit. Once fully completed and approved this Dust Control Plan must be posted on-site with the Dust Control Permit and supplied to all contractors and subcontractors.

**Primary (“P”) and Contingency (“C”) Control Measures:**



Every category and/or sub-category requires at least one Primary control measure (“P”) and at least one Contingency control measure (“C”). A contingency control measure is the back-up or secondary action(s) that needs to immediately be implemented when the primary control measure(s) fails to adequately control dust emissions at the named project.

To indicate your choice, mark the box next to the appropriate letter (“P” or “C”) in front of each control measure(s) that you have chosen. Do this for both primary and contingency control measures in every category and/or sub-category.

**Categories and/or sub-categories that are not applicable:**

When a category and/or sub-category does not apply to the named project this must be acknowledged by completely filling out the final entry in the category and/or sub-category. An explanation must be supplied for WHY the category and/or sub-category is not applicable. This is in addition to simply writing “NA” or “not applicable”.

When completing the following Dust Control Plan, use the Instructions on pages 8-13 and 19-22 to help you select dust control measures and keep in mind the following:

- Every category and/or sub-category requires at least one “P” (Primary) and at least one “C” (Contingency).
- Categories and/or sub-categories of dust-generating operations C1, C3, D1, E1, F, and G, in the following Dust Control Plan, have primary control measures, “P”, required by Rule 310. You will need to choose a contingency measure, “C”, for these dust-generating operations if they are applicable to your project.
- Where  has replaced a “P”, the dust control measure **CANNOT** be used as a primary control measure; this measure may only be considered a contingency control measure when selected.
- Where  has replaced a “C”, the dust control measure **CANNOT** be used as a contingency control measure and is required to be used as a primary control measure whenever that category and/or sub-category applies to a project.
- Where “Other” is listed without reference to opacity or surface stabilization standard(s) and is selected as a primary control measure, then the description must meet the criteria in the instructions on page 8 for “Unlisted Dust Control Measures.”
- If a category and/or sub-category does not apply to the project named in this application the last item in that category and/or sub-category must be fully completed. An explanation of why it is not applicable is required.

***After your Dust Control Permit Application has been approved, you must post your Dust Control Permit along with this Dust Control Plan on-site, as required by Rule 310, Section 409.***

**Category A. Vehicles/Motorized Equipment**

(See Instructions page 10)


**A.1 Unpaved Staging Areas, Unpaved Parking Areas, and Unpaved Material Storage Areas**

- ☐ **P** ☐ **C** Apply water (**Fill out Category I, “Water” on pp. 37-41**)
- ☐ **P** ☐ **C** Pave (Choose one of the following): ☐ Beginning of Project\* ☐ During Project\* ☐ End of Project\*  
\*Must specify additional primary control measure(s) that will be in place prior to paving
- ☐ **P** ☐ **C** Apply and maintain gravel, recycled asphalt, or other suitable material
- ☐ **P** ☐ **C** Apply and maintain dust suppressant(s), other than water (**Fill out Category J, “Dust Suppressants other than water” on p. 42**)
- ☐ **P** ☐ **C** Limit vehicle trips to no more than 20 per day per road **AND** limit vehicle speeds to no more than 15 m.p.h. In the space provided; 1) list the maximum number of vehicle trips on the unpaved parking/staging/material storage areas each day (including number of employee vehicles, earthmoving equipment, haul trucks and water trucks), 2) provide a description of how vehicle speeds will be restricted to no more than 15 m.p.h., and 3) specify which area(s) this will apply to:
- \_\_\_\_\_
- ☐ **P** ☐ **C** Other: \_\_\_\_\_
- \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

\_\_\_\_\_

**A.2 Unpaved Access Areas/Haul Roads**

- ☐ **P** ☐ **C** Apply water (**Fill out Category I, “Water” on pp. 37-41**)
- ☐ **P** ☐ **C** Pave (Choose one of the following): ☐ Beginning of Project\* ☐ During Project\* ☐ End of Project\*  
\*Must specify additional primary control measure(s) that will be in place prior to paving
- ☐ **P** ☐ **C** Apply and maintain surface gravel, recycled asphalt, or other suitable material
- ☐ **P** ☐ **C** Apply and maintain dust suppressant(s), other than water (**Fill out Category J, “Dust Suppressants other than water” on p. 42**)
- ☐ **P** ☐ **C** Limit vehicle trips to no more than 20 per day per road **AND** limit vehicle speeds to no more than 15 m.p.h. In the space provided; 1) list the maximum number of vehicle trips on the unpaved parking/staging/material storage areas each day (including number of employee vehicles, earthmoving equipment, haul trucks and water trucks), 2) provide a description of how vehicle speeds will be restricted to no more than 15 m.p.h., and 3) specify which road(s) this will apply to:
- \_\_\_\_\_
-  ☐ **C** Cease operations, NOTE: This option CANNOT be considered a *primary* control measure.
- ☐ **P** ☐ **C** Other: \_\_\_\_\_
- \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

\_\_\_\_\_

Category B. Disturbed Surface Areas

(See Instructions page 10)

B.1 Before Active Operations occur

- ☐ P ☐ C Pre-water site to the depth of cuts (Fill out Category I, “Water” on pp. 37-41)
- ☐ P ☐ C Phase work to reduce the amount of disturbed surface area at any one time. Attach a map delineating the phases and their extent
- ☐ P ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

B.2 During Active Operations

- ☐ P ☐ C Apply water or other suitable dust suppressant(s) other than water (Fill out Category I, “Water” on pp. 37-41 or Category J, “Dust Suppressants other than water” on p. 42)
- ☐ P ☐ C Apply water to maintain a soil moisture content at a minimum of 12% or at least 70% of the optimum soil moisture content for areas that have an optimum moisture content for compaction of less than 12% (Fill out Category I, “Water” on pp. 37-41)
- ☐ P ☐ C In conjunction with one of the above listed measures construct fences or three-foot to five-foot high wind barriers with 50% or less porosity adjacent to roadways or urban areas to reduce the amount of windblown material leaving the site
- ☒ ☐ C Cease operations, NOTE: This option CANNOT be considered a *primary* control measure.
- ☐ P ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

B.3 Stabilization for any inactive period, of any length, 24 hours per day, seven days per week including weekends, after work hours, and holidays

- ☐ P ☐ C Apply water (Fill out Category I, “Water” on pp. 37-41)  
Disturbed Surface Areas: Three times per day, increased to a minimum of four times per day if there is evidence of wind-blown dust  
Open Storage Piles (temporarily disturbed): At least twice per hour in a PM<sub>10</sub> nonattainment area, at least once per hour in a PM<sub>10</sub> attainment area
- ☐ P ☐ C Apply and maintain surface gravel or dust suppressant(s) other than water (Fill out Category J, “Dust Suppressants other than water” on p. 42)
- ☐ P ☐ C Cover open storage piles with tarps, plastic or other materials such that wind will not remove the covering(s)
- ☐ P ☐ C Establish vegetative ground cover (landscaping)
- ☐ P ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

B.4 Permanent Stabilization of Disturbed Surface Areas required within ten days following the completion of the Dust-Generating Operation if finished for a period of 30 days or longer

- ☐ P ☐ C Pave (Choose one of the following): ☐ Beginning of Project\* ☐ During Project\* ☐ End of Project\*  
\*Must specify additional primary control measure(s) that will be in place prior to paving
- ☐ P ☐ C Apply and maintain gravel, recycled asphalt, or other suitable material
- ☐ P ☐ C Apply and maintain dust suppressant(s) other than water (Fill out Category J, “Dust Suppressants other than water” on p. 42)
- ☐ P ☐ C Establish vegetative ground cover (landscaping)
- ☐ P ☐ C Implement above control measures and restrict vehicle access to the area
- ☐ P ☐ C Apply water (Fill out Category I, “Water” on pp. 37-41) and prevent access/trespass by:  
(Check all of the following that apply)  
☐ ditches ☐ fences ☐ berms ☐ shrubs ☐ trees ☐ other
- ☐ P ☐ C Restore area such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby undisturbed native conditions (desert xeriscaping)
- ☐ P ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_



Category C. Bulk Material Handling

(See Instructions page 11)

C.1 Off-Site Hauling onto Paved Areas Accessible to the Public

☐ P ☒ **Required:** Install, maintain, and use a suitable trackout control device that controls and prevents trackout and/or removes particulate matter from tires and the exterior surfaces of haul trucks and/or motor vehicles that traverse the site

☐ P ☒ **Required when a cargo compartment is loaded:** cover haul trucks with a tarp or other suitable closure **AND** load all haul trucks such that the freeboard is not less than 3 inches **AND** load all haul trucks such that at no time shall the highest point of the bulk material be higher than the sides, front, and back of the cargo container area **AND** prevent spillage or loss of bulk material from holes or other openings in the cargo compartment

☐ P ☒ **Required when a cargo compartment is empty:** cover haul trucks with a tarp or other suitable closure **OR** clean the interior of the cargo compartment before leaving the site

NOTE: The following options CANNOT be considered for a *primary* control measure.

☒ ☐ C Apply water to the top of the load **(Fill out Category I, “Water” on pp. 37-41)**

☒ ☐ C Apply dust suppressant(s) other than water to the top of the load **(Fill out Category J, “Dust Suppressants other than water” on p. 42)**

☒ ☐ C Cease operations

☒ ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

C.2 Hauling/Transporting within the Boundaries of the Work Site but not crossing a Paved Area Accessible to the Public

☐ P ☐ C Limit vehicle speed to 15 m.p.h. or less while traveling on the work site such that visible emissions coming-off the load do not exceed 20% opacity

☐ P ☐ C Apply water to the top of the load **(Fill out Category I, “Water” on pp. 37-41)**

☐ P ☐ C Apply dust suppressant(s) other than water to the top of the load **(Fill out Category J, “Dust Suppressants other than water” on p. 42)**

☐ P ☐ C Cover haul trucks with a tarp or other suitable closure

☒ ☐ C Cease operations, NOTE: This option CANNOT be considered a *primary* control measure.

☐ P ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

C.3 Hauling/Transporting within the Boundaries of the Work Site and crossing and/or accessing a Paved Area accessible to the Public

☐ P ☒ **Required:** Load all haul trucks such that the freeboard is not less than 3 inches **AND** load all haul trucks such that at no time shall the highest point of the bulk material be higher than the sides, front, and back of the cargo container area **AND** prevent spillage or loss of bulk material from holes or other openings in the cargo compartment **AND** install suitable trackout control device

NOTE: The following options CANNOT be considered for a *primary* control measure.

☒ ☐ C Cease operations

☒ ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

C.4 Bulk Material Stacking, Loading, and Unloading Operations

☐ P ☐ C Apply water **(Fill out Category I, “Water” on pp. 37-41)**

☐ P ☐ C Apply dust suppressant(s) other than water **(Fill out Category J, “Dust Suppressants other than water” on p. 42)**

NOTE: These following options CANNOT be considered for a *primary* control measure.

☒ ☐ C Cease operations

☒ ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

C.5 Open Storage Piles

☐ P ☐ C **Prior to and/or while conducting** stacking, loading, and unloading operations spray material with water or a dust suppressant other than water **(Fill out Category I, “Water” on pp. 37-41 or Category J, “Dust Suppressants other than water” on p. 42)**

☐ P ☐ C **When not conducting** stacking, loading, and unloading operations cover open storage piles with tarps, plastic, or other material,  
**OR**  
Apply water to maintain soil moisture content at a minimum of 12% or maintain at least 70% of the optimum soil moisture content, for areas that have an optimum moisture content for compaction of less than 12% **(Fill out Category I, “Water” on pp. 37-41),**  
**OR**  
Maintain a soil crust,  
**OR**  
In conjunction with the two measures above, construct and maintain wind barriers, storage silos, or a three-sided enclosure with walls, whose length is no less than equal to the pile length, whose distance from the pile is no more than twice the height of the pile, whose height is equal to the pile height, and whose porosity is no more than 50%

☐ P ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

Category D. Trackout, Carry-out, Spillage, and Erosion

(See Instructions page 11)

D.1 Trackout Control Device

A trackout control device must be installed if a work site has 2 acres or more of disturbed surface area or if a work site has 100 cubic yards of bulk material hauled on-site or off-site per day.

- ☐ P ☒ **Required:** Install at all exits to a paved area accessible to the public at least one of the following:  
(Choose all that apply)  
☐ gravel pad    ☐ grizzly or rumble grate    ☐ wheel wash system    ☐ paved area
- ☒ ☐ C Cease operations, NOTE: This option CANNOT be considered a *primary* control measure.
- ☐ P ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

D.2 Cleaning

Trackout/carry-out must be cleaned up immediately if trackout/carry-out extends a cumulative distance of 25 linear feet or more along a paved area accessible to the public including curbs, gutters, and sidewalks.

All other trackout/carry-out must be cleaned up no later than the end of the workday (End of Work Day is the end of a working period that may include one or more work shifts. If working 24 hours a day, the end of a working period shall be considered no later than 8:00 p.m.).

- ☐ P ☐ C Operate a street sweeper or wet broom with sufficient water and at the manufacturer's recommended speed (e.g. kick broom, steel bristle broom, Teflon broom, vacuum)
- ☐ P ☐ C Manually sweep-up deposits
- ☐ P ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

Category E. Weed Abatement by Discing or Blading

(See Instructions page 12)

E.1 Disturbance Operations

- ☐ P ☒ **Required:** Pre-water site **AND** apply water during weed abatement by discing or blading (**Fill out Category I, “Water” on pp. 37-41**)

NOTE: The following options CANNOT be considered for a *primary* control measure.

- ☒ ☐ C Cease operations
- ☒ ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

E.2 Stabilization

- ☐ P ☐ C Pave immediately following weed abatement
- ☐ P ☐ C Apply gravel
- ☐ P ☐ C Apply water (**Fill out Category I, “Water” on pp. 37-41**)
- ☐ P ☐ C Apply dust suppressant(s) other than water (**Fill out Category J, “Dust Suppressants other than water” on p. 42**)
- ☐ P ☐ C Establish vegetative ground cover (landscaping)
- ☐ P ☐ C Other: \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

Category F. Blasting Operations

(See Instructions page 12)

- ☐ P ☒ **Required:** Discontinue blasting, if wind gusts above 25 m.p.h., **AND** **Required:** Pre-water **AND** maintain surface soils in a stabilized condition where support equipment and vehicles will operate (**Fill out Category I, “Water” on pp. 37-41**)
- ☐ P ☐ C Apply water (**Fill out Category I, “Water” on pp. 37-41**)
- ☐ P ☐ C Apply and maintain dust suppressant(s) other than water (**Fill out Category J, “Dust Suppressants other than water” on p. 42**)
- ☒ ☐ C Other, NOTE: This option CANNOT be considered a *primary* control measure. \_\_\_\_\_

Or, explain why this category and its control measures are not applicable \_\_\_\_\_

Category G. Demolition Activities

(See Instructions page 12)

P

Required:

Apply water or water in combination with dust suppressant(s) to demolition debris immediately following demolition activity (Fill out Category I, “Water” on pp. 37-41 or Category J, “Dust Suppressants other than water” on p. 42),

AND

Required:

Apply water or water in combination with dust suppressant(s) to all surrounding areas and to all disturbed soil surfaces immediately following demolition activity (Fill out Category I, “Water” on pp. 37-41 or Category J, “Dust Suppressants other than water” on p. 42)

NOTE: The following options CANNOT be considered for a *primary* control measure.

C

Thoroughly clean debris from paved and other surfaces following demolition activity

C

Other: \_\_\_\_\_

Or, explain why this category and its control measures are not applicable \_\_\_\_\_

Category H. Wind Event

(See Instructions page 13)

H.1

During Active Operation

P

C

Cease dust-generating operation for the duration of the wind event when the 60-minute average wind speed is greater than 25 m.p.h. and stabilize work area if dust-generating operation is ceased for the remainder of the work day

P

C

Apply water or other suitable dust suppressant at least twice per hour (once per hour if outside the nonattainment area) (Fill out Category I, “Water” on pp. 37-41 or Category J, “Dust Suppressants other than water” on p. 42)

P

C

Apply water to maintain soil moisture content at a minimum of 12%, as determined by ASTM Method D2216-05 or other equivalent method as approved by the Control Officer and the Administrator of the Environmental Protection Agency (Fill out Category I, “Water” on pp. 37-41)

P

C

Maintain at least 70% of the optimum soil moisture content for areas that have an optimum moisture content for compaction of less than 12%, as determined by ASTM Method D1557-02e1, or other equivalent method as approved by the Control Officer or the Administrator Of The Environmental Protection Agency (Fill out Category I, “Water” on pp. 37-41)

P

C

Apply water or other suitable dust suppressant(s) at least twice (once if outside the nonattainment area) per hour and construct fences or three-foot to five-foot high wind barriers with 50% or less porosity adjacent to roadways or urban areas to reduce the amount of windblown material leaving the site (Fill out Category I, “Water” on pp. 37-41 or Category J, “Dust Suppressants other than water” on p. 42)

C

Other, NOTE: This option CANNOT be considered a *primary* control measure. \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

H.2

Temporary Disturbed Surface Areas after work hours, weekends, holidays and any other inactive periods 24 hours per day, seven days per week

P

C

Apply and maintain surface gravel or dust suppressant(s) (Fill out Category I, “Water” on pp. 37-41 or Category J, “Dust Suppressants other than water” on p. 42)

P

C

Apply water or water in combination with dust suppressant(s) to all disturbed surface areas three times per day. If there is evidence of windblown dust, increase watering frequency to a minimum of four times per day. (Fill out Category I, “Water” on pp. 37-41 or Category J, “Dust Suppressants other than water” on p. 42)

P

C

Apply water or water in combination with dust suppressant(s) on open storage piles at least twice per hour (once per hour if outside the nonattainment area) to maintain a visible crust (Fill out Category I, “Water” on pp. 37-41 or Category J, “Dust Suppressants other than water” on p. 42)

P

C

Cover open storage piles with tarps, plastic, or other material such that wind will not remove the coverings

C

Other, NOTE: This option CANNOT be considered a *primary* control measure. \_\_\_\_\_

Or, explain why this sub-category and its control measures are not applicable \_\_\_\_\_

Category I. Water

(See Instructions page 13)

For each of the different project phases, indicate how the water is to be stored on or supplied to the project site in the “Supply” column, specifying the quantity and size of the supply method (e.g. (2) 3,000 gallon water towers). Also designate how the water will be applied to control dust-generation throughout the project lifetime in the “Application” column, stating the quantity and size of the application method (e.g. 1 fire hose, (3) 1,000 gal. water trucks). Minimum water availability means water supply in conjunction with the water application system.

Soil Rating:

Severe

Moderate

(See Appendix F of the Maricopa County Air Pollution Control Regulations as well as the Instructions, pages 13 and 15-17)

Soil Texture Rating	Project Phase - Site Clearing/Removal of Vegetation/Debris/Demolition	
	Total Acres Disturbed	Minimum Water Available
Severe (clay, silty clay, sandy clay)	0 - 2 acres	500 - 1,000 gallons per day
	2 - 10 acres	1,000 - 5,000 gallons per day
	10 - 100 acres	5,000 - 50,000 gallons per day
	> 100 acres	> 50, 000 gallons per day
Moderate (all other classifications)	0 - 2 acres	300 - 600 gallons per day
	2 - 10 acres	600 - 3,000 gallons per day
	10 - 100 acres	3,000 - 30,000 gallons per day
	> 100 acres	> 30,000 gallons per day

Average Daily Disturbance in Acres \_\_\_\_\_ Number of Gallons per day \_\_\_\_\_

Supply	Quantity and Size	Application	Quantity and Size
<div><div></div>Metered Hydrant</div>	_____	<div><div></div>Hose</div>	_____
<div><div></div>Water Tower</div>	_____	<div><div></div>Water Truck</div>	_____
<div><div></div>Water Pond</div>	_____	<div><div></div>Water Pull</div>	_____
<div><div></div>Off-Site</div>	_____	<div><div></div>Water Buffalo</div>	_____
<div><div></div>Other _____</div>	_____	<div><div></div>Other _____</div>	_____

Maricopa County Dust Control Permit Application Package – DUST CONTROL PLAN

Page 37 of 42

Maricopa County Dust Control Permit Application Package – DUST CONTROL PLAN

Page 36 of 42



Soil Texture Rating	Project Phase - Mass Grading (Includes basements)	
	Minimum Water Available (November – February)	Minimum Water Available (March – October)
<b>Severe</b> (clay, silty clay, sandy clay)	5,000 gallons per acre per day and	10,000 gallons per acre per day and
	30 gallons per cubic yard of material moved	30 gallons per cubic yard of material moved
<b>Moderate</b> (all other classifications)	5,000 gallons per acre per day and	10,000 gallons per acre per day and
	30 gallons per cubic yard of material moved	30 gallons per cubic yard of material moved

Average Daily Disturbance in Acres \_\_\_\_\_ Number of Gallons per acre per day \_\_\_\_\_

Daily Minimum Water Availability \_\_\_\_\_  
(Number of Acres Disturbed) × (Number of Gallons per acre per day)

Supply	Quantity and Size	Application	Quantity and Size
<input type="checkbox"/> Metered Hydrant	_____	<input type="checkbox"/> Hose	_____
<input type="checkbox"/> Water Tower	_____	<input type="checkbox"/> Water Truck	_____
<input type="checkbox"/> Water Pond	_____	<input type="checkbox"/> Water Pull	_____
<input type="checkbox"/> Off-Site	_____	<input type="checkbox"/> Water Buffalo	_____
<input type="checkbox"/> Other _____	_____	<input type="checkbox"/> Other _____	_____

Soil Texture Rating	Project Phase - Underground Utilities	
	Total Acres Disturbed	Minimum Water Available
<b>Severe</b> (clay, silty clay, sandy clay)	0 - 2 acres	500 - 1,000 gallons per day
	2 - 10 acres	1,000 - 5,000 gallons per day
	10 - 100 acres	5,000 - 50,000 gallons per day
	> 100 acres	> 50, 000 gallons per day
<b>Moderate</b> (all other classifications)	0 - 2 acres	300 - 600 gallons per day
	2 - 10 acres	600 - 3,000 gallons per day
	10 - 100 acres	3,000 - 30,000 gallons per day
	> 100 acres	> 30,000 gallons per day

Average Daily Disturbance in Acres \_\_\_\_\_ Number of Gallons per day \_\_\_\_\_

Supply	Quantity and Size	Application	Quantity and Size
<input type="checkbox"/> Metered Hydrant	_____	<input type="checkbox"/> Hose	_____
<input type="checkbox"/> Water Tower	_____	<input type="checkbox"/> Water Truck	_____
<input type="checkbox"/> Water Pond	_____	<input type="checkbox"/> Water Pull	_____
<input type="checkbox"/> Off-Site	_____	<input type="checkbox"/> Water Buffalo	_____
<input type="checkbox"/> Other _____	_____	<input type="checkbox"/> Other _____	_____

Soil Texture Rating	Project Phase - Unpaved Access Areas/Haul Roads	
	Total Acres Disturbed	Minimum Water Available
<b>Severe</b> (clay, silty clay, sandy clay)	0 - 2 acres	375 - 750 gallons per day
	2 - 10 acres	750 - 3,500 gallons per day
	10 - 100 acres	3,500 - 35,000 gallons per day
	> 100 acres	> 35,000 gallons per day
<b>Moderate</b> (all other classifications)	0 - 2 acres	225 - 400 gallons per day
	2 - 10 acres	400 - 2,250 gallons per day
	10 - 100 acres	2,250 - 22,500 gallons per day
	> 100 acres	> 22,500 gallons per day

Average Daily Disturbance in Acres \_\_\_\_\_ Number of Gallons per day \_\_\_\_\_

Supply	Quantity and Size	Application	Quantity and Size
<input type="checkbox"/> Metered Hydrant	_____	<input type="checkbox"/> Hose	_____
<input type="checkbox"/> Water Tower	_____	<input type="checkbox"/> Water Truck	_____
<input type="checkbox"/> Water Pond	_____	<input type="checkbox"/> Water Pull	_____
<input type="checkbox"/> Off-Site	_____	<input type="checkbox"/> Water Buffalo	_____
<input type="checkbox"/> Other _____	_____	<input type="checkbox"/> Other _____	_____

Soil Texture Rating	Project Phase - Vertical/Paved (This pertains to Dust Control during the vertical phase of the project)	
	Total Acres Disturbed	Minimum Water Available
<b>Severe</b> (clay, silty clay, sandy clay)	0 - 2 acres	250 - 500 gallons per day
	2 - 10 acres	500 - 2,500 gallons per day
	10 - 100 acres	2,500 - 25,000 gallons per day
	> 100 acres	> 25,000 gallons per day
<b>Moderate</b> (all other classifications)	0 - 2 acres	150 - 300 gallons per day
	2 - 10 acres	300 - 1,500 gallons per day
	10 - 100 acres	1,500 - 15,000 gallons per day
	> 100 acres	> 15,000 gallons per day

Average Daily Disturbance in Acres \_\_\_\_\_ Number of Gallons per day \_\_\_\_\_

Supply	Quantity and Size	Application	Quantity and Size
<input type="checkbox"/> Metered Hydrant	_____	<input type="checkbox"/> Hose	_____
<input type="checkbox"/> Water Tower	_____	<input type="checkbox"/> Water Truck	_____
<input type="checkbox"/> Water Pond	_____	<input type="checkbox"/> Water Pull	_____
<input type="checkbox"/> Off-Site	_____	<input type="checkbox"/> Water Buffalo	_____
<input type="checkbox"/> Other _____	_____	<input type="checkbox"/> Other _____	_____

Soil Texture Rating	Project Phase - Staging/Parking Areas/Storage Areas Including Landscaping Installation	
	Total Acres Disturbed	Minimum Water Available
Severe (clay, silty clay, sandy clay)	0 - 2 acres	375 - 750 gallons per day
	2 - 10 acres	750 - 3,500 gallons per day
	10 - 100 acres	3,500 - 35,000 gallons per day
	> 100 acres	> 35,000 gallons per day
Moderate (all other classifications)	0 - 2 acres	225 - 400 gallons per day
	2 - 10 acres	400 - 2,250 gallons per day
	10 - 100 acres	2,250 - 22,500 gallons per day
	> 100 acres	> 22,500 gallons per day

Average Daily Disturbance in Acres \_\_\_\_\_ Number of Gallons per day \_\_\_\_\_

Supply	Quantity and Size	Application	Quantity and Size
<input type="checkbox"/> Metered Hydrant	_____	<input type="checkbox"/> Hose	_____
<input type="checkbox"/> Water Tower	_____	<input type="checkbox"/> Water Truck	_____
<input type="checkbox"/> Water Pond	_____	<input type="checkbox"/> Water Pull	_____
<input type="checkbox"/> Off-Site	_____	<input type="checkbox"/> Water Buffalo	_____
<input type="checkbox"/> Other _____	_____	<input type="checkbox"/> Other _____	_____

Soil Texture Rating	Project Phase - Structure Excavation (Includes stem walls, footings, culverts, abutments, caissons)	
	Total Acres Disturbed	Minimum Water Available
Severe (clay, silty clay, sandy clay)	0 - 2 acres	500 - 1,000 gallons per day
	2 - 10 acres	1,000 - 5,000 gallons per day
	10 - 100 acres	5,000 - 50,000 gallons per day
	> 100 acres	> 50, 000 gallons per day
Moderate (all other classifications)	0 - 2 acres	300 - 600 gallons per day
	2 - 10 acres	600 - 3,000 gallons per day
	10 - 100 acres	3,000 - 30,000 gallons per day
	> 100 acres	> 30,000 gallons per day

Average Daily Disturbance in Acres \_\_\_\_\_ Number of Gallons per day \_\_\_\_\_

Supply	Quantity and Size	Application	Quantity and Size
<input type="checkbox"/> Metered Hydrant	_____	<input type="checkbox"/> Hose	_____
<input type="checkbox"/> Water Tower	_____	<input type="checkbox"/> Water Truck	_____
<input type="checkbox"/> Water Pond	_____	<input type="checkbox"/> Water Pull	_____
<input type="checkbox"/> Off-Site	_____	<input type="checkbox"/> Water Buffalo	_____
<input type="checkbox"/> Other _____	_____	<input type="checkbox"/> Other _____	_____

Soil Texture Rating	Project Phase - Fine Grading	
	Total Acres Disturbed	Minimum Water Available
Severe (clay, silty clay, sandy clay)	0 - 2 acres	500 - 1,000 gallons per day
	2 - 10 acres	1,000 - 5,000 gallons per day
	10 - 100 acres	5,000 - 50,000 gallons per day
	> 100 acres	> 50, 000 gallons per day
Moderate (all other classifications)	0 - 2 acres	300 - 600 gallons per day
	2 - 10 acres	600 - 3,000 gallons per day
	10 - 100 acres	3,000 - 30,000 gallons per day
	> 100 acres	> 30,000 gallons per day

Average Daily Disturbance in Acres \_\_\_\_\_ Number of Gallons per day \_\_\_\_\_

Supply	Quantity and Size	Application	Quantity and Size
<input type="checkbox"/> Metered Hydrant	_____	<input type="checkbox"/> Hose	_____
<input type="checkbox"/> Water Tower	_____	<input type="checkbox"/> Water Truck	_____
<input type="checkbox"/> Water Pond	_____	<input type="checkbox"/> Water Pull	_____
<input type="checkbox"/> Off-Site	_____	<input type="checkbox"/> Water Buffalo	_____
<input type="checkbox"/> Other _____	_____	<input type="checkbox"/> Other _____	_____

Import/Export Operations

Number of Yards Involved in this Phase \_\_\_\_\_ Number of Days for Operation \_\_\_\_\_

Number of Yards Imported/Exported × 30 gallons of water per yard = \_\_\_\_\_ (Total Gallons required)

Total Gallons required divided by number of days = \_\_\_\_\_

Supply	Quantity and Size	Application	Quantity and Size
<input type="checkbox"/> Metered Hydrant	_____	<input type="checkbox"/> Hose	_____
<input type="checkbox"/> Water Tower	_____	<input type="checkbox"/> Water Truck	_____
<input type="checkbox"/> Water Pond	_____	<input type="checkbox"/> Water Pull	_____
<input type="checkbox"/> Off-Site	_____	<input type="checkbox"/> Water Buffalo	_____
<input type="checkbox"/> Other _____	_____	<input type="checkbox"/> Other _____	_____

Category J. Dust Suppressants other than water

(See Instructions page 13)

Although water is a dust suppressant, the information required by Table J should not include information on water supply and water application. The information required by Table J is for all other dust suppressants that you use. Fill out the applicable areas in the table below and attach information on environmental impacts and approvals or certifications related to appropriate and safe use for ground application. Also, attach product specification(s) and application sheet(s) or label instructions.

Application Area	Manufacturer Name	Product	Application Frequency *	Intensity**
A Vehicles/Motorized Equipment				
B Disturbed Surface Areas				
C Bulk Material Handling				
D Trackout, Carry-out, Spillage, and Erosion				
E Weed Abatement by Discing or Blading				
F Blasting Operations				
G Demolition Activities				
H Wind Event				

\* How often the surface will receive a complete application of dust suppressant (e.g. 3 times a day)

\*\* The amount used over a period of time (e.g. gallons/minute)

This page intentionally left blank



APPENDIX 4-5

MEMORANDUM OF AGREEMENT

Appendix 4-5, *Memorandum of Agreement*, contains the Memorandum of Agreement committing FHWA, USACE, and ADOT to integrating NEPA and Section 404 of the Clean Water Act into the transportation planning, decision-making, and implementation process of the project. The completion of this memorandum of agreement is required as a component of a coordinated environmental review process to improve inter-agency communications, protect Waters and wetlands, expedite construction of necessary projects, and enable more projects to proceed on budget and schedule.

JPA/IGA 10-067I  
AG Contract NO: P00120103933  
ADOT Project No: M5106 01X  
& M5106 02X

AMENDED AND SUPERSEDED  
MEMORANDUM OF AGREEMENT  
BETWEEN THE  
ARIZONA DEPARTMENT OF TRANSPORTATION,  
FEDERAL HIGHWAY ADMINISTRATION, ARIZONA DIVISION OFFICE  
AND  
THE UNITED STATES ARMY CORPS OF ENGINEERS'  
LOS ANGELES DISTRICT  
CONCERNING FUNDING FOR THE DEPARTMENT OF THE ARMY PERMIT PROCESS ON  
PRIORITY FEDERAL-AID HIGHWAY PROJECTS

THIS AMENDED AND SUPERSEDED MEMORANDUM OF AGREEMENT ("AMENDED MOA") is entered into as of this day 18 of MARCH, 2013, between the U.S. Army Corps of Engineers' Los Angeles District (hereinafter the "Corps"), Federal Highway Administration, Arizona Division Office (hereinafter the "FHWA"), and the Arizona Department of Transportation (hereinafter the "ADOT"), collectively, referred to herein as the "Parties."

RECITALS

WHEREAS, the Parties entered into a Memorandum of Agreement ("Original MOA") effective June 18, 2012 concerning funding for the Department of the Army permit process on priority Federal-aid highway projects; and

WHEREAS, the Parties wish to amend and supersede the Original MOA in its entirety; and

WHEREAS, the Corps has regulatory jurisdiction over certain activities occurring in waters of the United States, including wetlands; and

WHEREAS, because of Federal-aid transportation funding increases under the Moving Ahead for Progress in the 21<sup>st</sup> Century ("MAP-21"), Public Law 112-141, ADOT substantially increased the number of transportation projects the Corps must review pursuant to 33 U.S.C. 1344 (Section 404 of the Clean Water Act of 1972 ("CWA")), as amended and 33 U.S.C. 403 (Section 10 of the River and Harbor Act of 1899 ("RHA")); and

WHEREAS, the Corps has indicated that, due to staff resource constraints, it is currently unable to provide ADOT with priority review for permitting decisions for the increased number of Federal-aid transportation projects pursuant to its responsibilities; and

WHEREAS, ADOT desires the Corps to increase its level of early involvement during the project planning and development process, so that final Corps reviews will not constitute an unexpected delay in ADOT project implementation; and



WHEREAS, 23 U.S.C. 139(j) [Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)], allows ADOT to furnish Federal-Aid Highway Program (“FAHP”) funds to the Corps to expedite the processing of environmental documents for permit decisions for priority transportation projects, and

WHEREAS, this AMENDED MOA is intended to (1) enable the Parties to fully consider, address, and protect environmental resources early in the development of proposed transportation actions; (2) avoid conflicts late in project development through close coordination during early transportation planning and development stages; (3) provide sufficient information to the Corps for timely analysis of project effects and to assist ADOT in developing appropriate mitigation measures; (4) maximize the effective use of limited Corps personnel resources by focusing attention on projects that would most affect aquatic resources; (5) provide a mechanism for expediting project coordination when necessary; and (6) provide procedures for resolving disputes in this resource partnering effort, and

WHEREAS, the FHWA has indicated and agrees that the State’s apportioned Federal-aid highway funds can be used to support this AMENDED MOA.

NOW, THEREFORE, the Parties agree as follows:

AGREEMENT

Article I. PURPOSE AND AUTHORITIES

A. This AMENDED MOA is entered into by the Parties for the purpose of establishing the responsibilities of the Parties relative to priority review of FAHP-funded projects with the goal of achieving timely design and implementation of highway improvements while also assuring such design and implementation is sensitive to the protection of aquatic resources for which the Corps is responsible under Federal statute and regulation. This AMENDED MOA is not intended as the exclusive means of obtaining review of projects proposed by ADOT. This AMENDED MOA is a vehicle by which ADOT may obtain expedited review of FAHP-funded projects designated as priorities, outside of the ordinary Corps review process.

B. ADOT enters into this AMENDED MOA pursuant to Arizona Revised Statute section 28-401 and other relevant Arizona law and 23 U.S.C. 139(j) (Section 6002 of SAFETEA-LU).

C. The Corps enters into this AMENDED MOA pursuant to 23 U.S.C. 139(j) (Section 6002 of SAFETEA-LU).

D. FHWA enters into this AMENDED MOA pursuant to 23 U.S.C. 139(j) (Section 6002 of SAFETEA-LU).

Article II. SCOPE OF WORK

A. Activities that the Corps may pursue under this AMENDED MOA are restricted to actions taken under Corps regulatory authority that will expedite processing of environmental permits required by ADOT in furtherance of FAHP funded projects in accordance with the mandates of 23 U.S.C. 139(j), to facilitate permit application review in less than the customary time necessary for such review. Said processing shall include a full consideration of all relevant and applicable environmental laws and regulations. In no way shall it be construed or implied that the Parties intend to abrogate by entering into this AMENDED MOA any obligations or duties to comply with applicable Federal or state

laws, regulations, guidance, policies and procedures. Use of such funds will not affect the impartial decision-making of the Corps either substantively or procedurally.

B. The Corps’ Regulatory Program is funded as a Congressionally appropriated line item in the annual Federal budget. ADOT will provide the Corps with funds in accordance with 23 U.S.C. 139(j). The Corps will provide one full-time Regulatory Program Manager qualified at grade GS-11 as described in **Attachment C**, exclusively dedicated to expediting permit evaluation-related services, as described in Article II.D, below, for ADOT-designated priority projects to support efficient decision-making related to ADOT’s permitting needs.

C. The Corps will establish a separate internal financial account to track receipt and expenditure of the funds associated with its review of permit applications submitted by ADOT. The Corps full-time Regulatory Program Manager will charge his or her time and expenses against the account when they perform work to either expedite permit evaluation related requests designated by ADOT as a priority or undertake other programmatic efforts to support efficient decision-making related to ADOT’s permitting needs. Corps Regulatory personnel will focus on permit approvals prioritized by ADOT; however, if no or less than three projects are designated by ADOT as a priority, Corps regulatory personnel will then work on other programmatic efforts, and assist with staff training for ADOT.

D. Funds contributed by ADOT hereunder will be expended by the Corps to defray the costs of the funded Regulatory Program Manager (including salary, associated benefits, overhead and travel expenses) and other costs in order to expedite the evaluation of priority permit applications designated by ADOT. Such activities will include, but not be limited to, the following: jurisdictional determinations; site visits; travel; federal register preparation; public notice preparation and distribution; public hearings; preparation of correspondence; public interest review; preparation and review of environmental documentation; meetings with ADOT and resource agencies; training for ADOT employees, partners and contractors; and any other permit evaluation related responsibilities that may be mutually agreed upon.

E. If the funds provided by ADOT are expended and not replenished, any remaining priority permit applications will be handled like those of any permit applicant.

Article III. INTERAGENCY COMMUNICATIONS

To provide for consistent and effective communication between the Parties, each party will appoint a Principal Representative to serve as its central point of contact on matters relating to this AMENDED MOA. Additional representatives may also be appointed to serve as points of contact on specific actions or issues. Each party will issue a letter to the other designating the Principal Representative for each party within fifteen (15) calendar days of AMENDED MOA execution. The Principal Representative for each party may be changed upon written notification to the other parties.

Article IV. RESPONSIBILITIES OF THE PARTIES

A. The Corps shall supplement, and not supplant, its existing Regulatory Program personnel, who currently review ADOT projects on a routine basis, with one qualified full-time Regulatory Program Manager at grade GS-11 as described in **Attachment C**, within projected funding levels provided by ADOT. The Corps shall use the funds provided to defray the costs of salaries and associated benefits and to reimburse travel expenses in order to:

1. Expedite review of ADOT’s FAHP-funded priority projects in accordance with the purpose, terms, and conditions of this AMENDED MOA. ADOT will provide and update the list of



priority projects as needed. The Corps shall not redirect resources from, or otherwise postpone, other non-priority projects submitted by ADOT through the standard Corps review process.

2. Actively participate in ADOT scoping, planning, and project development meetings and field reviews, when requested, to identify critical issues, key decision points, and potential conflicts as early as possible. Participation includes sharing, when appropriate, the most current information to ensure that good transportation decisions result. The level of participation will be determined by the project's relative priority, as identified by ADOT, as well as the Corps' current and projected workload of priority projects and activities.
  3. Participate with other federal, state, and local agencies in the concurrent and proactive review of transportation projects and provide any concurrences or recommendations, as required. The level of participation will be determined by the project's relative priority, as identified by ADOT, as well as the Corps' current and projected workload of priority projects and activities.
  4. Participate in transportation planning meetings, their related activities, and the review of the environmental elements of any planning documents, as requested. The level of participation will be determined by the project's relative priority, as identified by ADOT, as well as the Corps' current and projected workload of priority projects and activities.
  5. As appropriate, use a coordinated process to review draft and final environmental impact statements and other environmental documents, and provide timely agency comments.
  6. Explore potential programmatic permitting approaches to facilitate reduced processing time.
  7. Provide quarterly status updates on Corps decisions or pending actions that will affect ADOT.
  8. Perform other related priority tasks, such as early project scoping/coordination as requested by ADOT and agreed to by the Corps.
  9. Review application packages for completeness and notify ADOT within 15 calendar days of receipt if application is incomplete.
  10. Provide periodic CWA section 404 permit training for ADOT employees, partners, consultants, and contractors.
  11. Attend periodic application status meetings with ADOT as necessary.
  12. Provide ADOT with quarterly accounting records of actual account of expenditures for salaries, benefits, travel and indirect costs as drawn against advance state payment in support of work contemplated by this AMENDED MOA.
- B. ADOT will provide \$169,313.65 to fund Corps Regulatory personnel for the purpose of timely review of selected FAHP-funded priority projects and other identified activities. To facilitate the Corps' reviews and activities, ADOT will:
1. Identify individual projects and other activities requiring priority involvement by the Corps under this AMENDED MOA. The list of projects will be reviewed and revised by ADOT as

necessary.

2. Actively engage the Corps personnel in ADOT scoping, planning, and project development through various means, including, but not limited to, meetings, field visits, conference calls, video teleconferencing, and electronic correspondence.
3. Provide adequate information regarding projects and other specific activities. Provide sufficient information and time to the Corps, on projects requiring authorization by standard individual permit, for the timely determination of project purpose statements and range of alternatives, analysis of project effects, determination of the least environmentally damaging practicable alternative, and development of appropriate mitigation measures. Upon request, provide supplemental information necessary to assure that the Corps can effectively accomplish the tasks listed in Article IV. A. above.
4. In consultation with the Corps, recommend realistic timelines for the Corps' involvement.
5. Maintain a single focal point of contact at ADOT for general coordination with the Corps, arranging pre-application meetings, submittal of Department of the Army permit applications, and other requests for regulatory action.
6. Attend periodic application status meetings with the Corps, as necessary.
7. Participate, to the extent allowable, and in training provided by the Corps pursuant to Article IV.A.10 above.
8. Program a FAHP project to track costs contemplated by this AMENDED MOA.
9. Provide advance payments as contemplated by this AMENDED MOA.

C. FHWA will:

1. Approve programming a FAHP project to accomplish the work contemplated by this AMENDED MOA at the applicable federal-aid reimbursement rate.
2. Within 3 days after receiving an invoice from ADOT, reimburse ADOT for the total amount of Federal share payable for any project programmed (including advance payments) to support this AMENDED MOA.
3. In the event FHWA fails to fulfill the obligations set forth in this AMENDED MOA or withdraw its proposed plans for whatever reason, the FHWA shall, subject to the availability of funds, be responsible for all costs incurred by the ADOT up to the time of withdrawal, unless the reason for the FHWA failure or cancellation is due to ADOT's failure to comply with its obligations hereunder.

D. Performance Measures

1. ADOT and the Corps have agreed to a set of performance measures to monitor activities under this AMENDED MOA. These performance measures are included as **Attachment A** to this AMENDED MOA and incorporated herein by reference.



2. These performance measures may be revised by mutual agreement of ADOT and the Corps without necessitating a formal amendment to this AMENDED MOA.

Article V. FUNDING

A. Within 60 days of execution of this AMENDED MOA and prior to the Corps incurring any expenditure to expedite permit evaluation-related activities as specified in this AMENDED MOA, funds shall be provided by ADOT to the Corps in the amount of \$ 42,328.41 to cover a period of three months of the Corps' budget estimate, which is included as **Attachment B** to this AMENDED MOA and incorporated herein by reference. Payments by ADOT are to be made by check, wire transfer, or electronic funds transfer as follows:

1. For checks, the payment shall be mailed to:

U.S. Army Corps of Engineers, Los Angeles District  
Finance and Accounting Officer  
P.O. Box 532711  
Los Angeles, CA 90053-2325  
Attn: Carlos M. Tabares

2. For electronic funds transfers, payment shall be made in accordance with Standard Operating Procedure ("SOP") UFC 08 (**Attachment D**).

3. For wire transfers, payment shall be made in accordance with SOP UFC 07 (**Attachment E**). Paragraph 4a of this SOP refers to this AMENDED MOA instead of a Project Cooperation Agreement.

B. At the end of the calendar month in which the Corps received the advance payment specified in Article V.A. above and at the end of the calendar month of each month thereafter while this AMENDED MOA remains in effect, the Corps will invoice ADOT for an advance payment for the next month in the amount equal to what the Corps expended during the prior calendar month. Payment shall be made within a reasonable period of time after ADOT receives the invoice (not to exceed 30 calendar days) in the same manner as provided in Article V.A. above. Invoices shall be submitted by the Corps to:

Mr. Paul O'Brien  
Arizona Department of Transportation  
Manager, Environmental Planning Group  
1611 W Jackson Street; Mail Drop EM02  
Phoenix, AZ 85007

C. If the Corps' actual costs for providing the agreed upon level of service will exceed the amount of funds available, the Corps will notify ADOT prior to fund exhaustion of the incremental amount of funds needed to defray the remaining anticipated costs.

D. No later than July 31, 2013, and July 31 of each subsequent year that this AMENDED MOA remains in effect, the Corps and ADOT will discuss the Corps' anticipated costs to be incurred for the next Federal fiscal year, including any step-increase and locality adjustments. Revisions agreed to by ADOT and the Corps will be incorporated into a revised budget estimate, without necessitating a formal revision or amendment to this MOA. No later than August 30, 2013 and August 30 of each subsequent year that this AMENDED MOA remains in effect, the Corps will provide a written request to ADOT for the total amount specified in the revised budget estimate.

E. The Corps will carry over any unexpended and unobligated funds from year to year. In

the event any funds remain unexpended and unobligated when this AMENDED MOA is terminated or expires, the Corps will refund such unexpended and unobligated funds to ADOT.

Article VI. APPLICABLE LAWS

The applicable statutes, regulations, directives, and procedures of the United States will govern this AMENDED MOA and all documents and actions pursuant to it. Unless otherwise required by law, all expediting of permit applications undertaken by the Corps will be governed by Corps regulations, guidance, policies and procedures.

Article VII. DISPUTE RESOLUTION

In the event of a dispute, the Parties agree to use their best efforts to resolve the dispute in an informal fashion through consultation and communication, or other forms of non-binding alternative disputes resolution mutually acceptable to the Parties. The Parties agree that, in the event such measures fail to resolve the dispute, they shall proceed in accordance with applicable Federal law.

Article VIII. PUBLIC INFORMATION

Justification and explanation of FHWA and/or ADOT programs or projects before other agencies, departments and offices will not be the responsibility of the Corps. The Corps may provide, upon request from ADOT or the FHWA, any assistance necessary to support justification or explanations of activities conducted under this AMENDED MOA. In general, the Corps is responsible only for public information regarding Corps Regulatory activities. ADOT and/or FHWA will give the Corps advance notice before making formal, official statements regarding Corps activities funded under this AMENDED MOA.

Article IX. AMENDMENT, MODIFICATION AND TERMINATION

A. This AMENDED MOA may be modified or amended only by written, mutual agreement of the Parties.

B. Any Party may terminate this AMENDED MOA without cause upon thirty (30) days' written notice to the other Parties. In the event of termination, ADOT will continue to be responsible for all costs incurred by the Corps in performing expedited environmental permit review services up to the time of notice and for the costs of closing out any ongoing contracts in support of the provision of services by the Corps under this AMENDED MOA.

C. Within sixty (60) calendar days of termination, or the expiration of the AMENDED MOA, the Corps shall provide ADOT with a final statement of expenditures. Within sixty (60) calendar days after submittal of the Corps' final statement of expenditures, the Corps, subject to availability of funds, shall remit to ADOT any unobligated or unexpended funds.

Article X. MISCELLANEOUS

A. This AMENDED MOA will not affect any pre-existing or independent relationships or obligations between the Parties.

B. The Corps' participation in this AMENDED MOA does not imply endorsement of ADOT projects nor does it diminish, modify, or otherwise affect Corps statutory or regulatory authorities.

C. If any provision of this AMENDED MOA is determined to be invalid or unenforceable, the remaining provisions will remain in force and unaffected to the fullest extent permitted by law and regulation.


D. This AMENDED MOA, including any documents incorporated by reference or attachments thereto, constitute the entire agreement between the Parties. All prior or contemporaneous agreements, understandings, representations and statements, oral or written, are merged herein and shall be of no further force or effect.

Article XI. EFFECTIVE DATE AND DURATION

This AMENDED MOA and any amendments will become effective on the date of signature by the last Party, and the signing and dating of the Determination Letter by the Arizona State’s Attorney General. ADOT shall provide written notice to the Corps and FHWA of the occurrence of the latter event. Unless amended or modified pursuant to Article IX.A., this AMENDED MOA shall remain in force until whichever of these events occurs first: 1) September 30, 2017; or 2) the AMENDED MOA is terminated pursuant to Article IX.B.

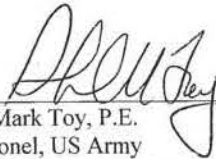
IN WITNESS WHEREOF, the Arizona Department of Transportation, acting by and through its authorized officer, the State Engineer, the U.S Army Corps of Engineers, acting by and through its authorized officer, the District Engineer, and the Federal Highway Administration, acting by and through its authorized officer, the Division Administrator, executes this AMENDED MOA.

ARIZONA DEPARTMENT OF TRANSPORTATION

  
Dallas Hammit, P.E.  
Deputy State Engineer, Development


Date: 2/21/2013

U.S. ARMY CORPS OF ENGINEERS,  
LOS ANGELES DISTRICT

  
R. Mark Toy, P.E.  
Colonel, US Army  
Commander and District Engineer

Date: 18 MAR 2013

FEDERAL HIGHWAY ADMINISTRATION,  
ARIZONA DIVISION OFFICE

  
Karla S. Petty  
Division Administrator

Date: 3/4/2013



Attachment A

Performance Measures

For the measures listed below, ADOT and the Corps are expected to achieve the identified objective, for those projects designated as a priority by ADOT, unless ADOT and Corps have mutually agreed to extend the timeframe.

Performance Objective	Performance Measure
<ul style="list-style-type: none"><li>When appropriate, the ADOT staff will utilize the Nationwide Permit (NWP) Information Form to ensure a complete Department of the Army permit application is received, which in turn is expected to expedite the Corps' permit review process.</li></ul>	The NWP Information Form shall be utilized at least 90% of the time.
<ul style="list-style-type: none"><li>Upon initial receipt of a permit application, the Corps will notify ADOT within fifteen (15) calendar days if additional information is necessary to deem the application complete.</li></ul>	The Corps shall provide such notification within the stated time frame at least 85% of the time.
<ul style="list-style-type: none"><li>Standard Individual Permits will be processed within sixty (60) days of a complete application, with the exception of those that are delayed due to: absence of CWA Section 401 certification; Section 7 of the Endangered Species Act (ESA) consultation(s); Section 106 of the National Historic Preservation Act (NHPA) consultations; untimely submittal of information or comments from ADOT; an extended comment period for the PN; and/or other environmental review processes with statutory time frames (e.g., Environmental Impact Statement).</li></ul>	The Corps shall meet the stated objective at least 90% of the time.
<ul style="list-style-type: none"><li>General Permits, including Nationwide Permits, will be processed within 45 calendar days, with the exception of those that are delayed due to the absence of CWA Section 401 certification, Section 106 of the NHPA and/or Section 7 of the ESA.</li></ul>	The Corps shall meet the stated objective at least 90% of the time.

Attachment B

Corps' Budget Estimate  
GS-11 Project Manager in Phoenix,  
Arizona

	Yearly	Monthly
Salary	\$162,313.65	\$13,526.14
Travel	\$1,000.00	\$83.33
Administrative costs	\$6,000.00	\$500.00
Total:	\$169,313.65	\$14,109.47

Three month  
estimate: \$42,328.41



Attachment C

Professional Standards for Supplemental Staff

One (1) full time employee, or equivalent, with experience and/or education in engineering, biology, natural resources, or other related environmental science. Working knowledge of Section 404 of the (Federal) Clean Water Act, Section 10 of the Rivers and Harbors Act or 1899, the National Environmental Policy Act, the (Federal) Endangered Species Act, and the National Historic Preservation Act is essential. In addition, the ability to travel, occasionally overnight, is mandatory (temporary duty may constitute 10-20% of the employee's time). This employee will be qualified to be paid under the Federal White Collar Pay Schedule at the GS-11 or GS-12 level.

Attachment D

DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS  
FINANCE CENTER  
5722 INTEGRITY DRIVE  
MILLINGTON TENNESSEE 38054-5005

CEFC-FD  
SOP No. UFC-08

1 June 2004  
Revised 1 April 2006

STANDING OPERATING PROCEDURES  
ELECTRONIC FUNDS TRANSFERS TO THE CORPS

1. **PURPOSE.** To Standing Operating Procedure (SOP) provides procedures for utilizing Electronic Funds Transfer (EFT) and the Automated Clearing House (ACH) networks in lieu of mailing a check for payment to the Corps.
2. **APPLICABILITY.** The provisions of this SOP apply to the USACE Finance Center (UFC) and activities supported by the UFC.
3. **REFERENCE.** SOP No. UFC-03, Collection/Deposit Procedures.
4. **PROCEDURES.** When a Corps customers wishes to use EFT or ACH processes to transfer of cash contributions in lieu of mailing a check to the UFC, the enclosed procedures must be followed to ensure accurate and timely credit for the funds transferred.
  - a. The customer must notify the supported activity F&A Officer or Project Manager in advance of the pending cash transfer. **The customer's notification should include the date of the transfer, amount, type of transfer (CCD+ or CTX format), and any other known data that will be used to identify the transfer.** The customer's financial institution will transfer the funds via the ACH network using the Cash Concentration or Disbursement Plus (CCD+) or Corporate Trade Exchange (CTX) formats of transactions. The required data elements for these types of transactions are provided in the enclosures.
  - b. Upon notification from the customer or the Project Manager of the pending EFT, the supported activity F&A Officer must enter a Collection Receiving Officer Voucher (ROV) in CEFMS. All EFT collection vouchers must be submitted to the UFC Disbursing Division using Form UFC-DISB-1 (available at: <http://fc.ufc.usace.army.mil/forms/a-ufcdsb1.pdf>). There should only be one EFT transaction per ROV and no other transactions should be attached to an ROV established for EFT purposes.

CEFC-FD  
SOP No. UFC-08

1 June 2004  
Revised 1 April 2006

c. In addition to the enclosed format instructions, the F&A Officer or the Project manager must also provide the following information to the customer for the EFT transfer:

- (1) The District/Division/Laboratory/RBC two-digit EROC
- (2) The CEFMS ROV number
- (3) The Advance Account or Local Cost Share Number


5. **Ca\$hLink II Agency Access System.** Ca\$hLink II is an on-line U.S. Treasury system that allows the UFC to access and confirm our deposit information the next working day after the EFT is posted. The UFC monitors the Ca\$hLink II system daily. Upon verification of the EFT transfer in Ca\$hLink II, the UFC will certify the ROV and confirm the deposit. Funds will be available immediately after the deposit confirmation.

The UFC will not require any additional documentation from the supported activity or the customer provided all required documentation identified above is provided. **If an EFT transaction is received via Ca\$hLink II that cannot be identified, it will be rejected back to the sender.** Before rejecting an EFT, the UFC will research and try to determine the proper supported activity and CEFMS account to update. For those EFT transactions rejected by the UFC, the financial institution (bank) that initiated the EFT will notify the customer (sender) of the rejected transaction.

6. **CHANGES.** Refer all discrepancies, comments or questions regarding this SOP to the Chief, Disbursing Division, Directorate of Finance (CEFC-FD) 901-874-8648.

FOR THE DIRECTOR:

Encls

  
SHIRLEY L. AUTRY  
Deputy Director, Finance

UFC-08

Revised 1 April 2006

U.S. ARMY CORPS OF ENGINEERS FINANCE CENTER  
Electronic Funds Transfer  
Customer Implementation Data Sheet

ACH CCD+ Format

DATA Element Name	Contents	Size	Position
*Record Type Code	6	1	01-01
*Transaction Code	22	2	02-03
*Receiving ABA	05103670	8	04-11
*Check Digit	6	1	12-12
*Account Number	220025	17	13-29
Payment Amount	Amount of Payment (\$\$\$\$cc)	10	30-39
Identification Number	Optional	15	40-54
*Receiver Name	USACE Finance Center	22	55-76
**Discretionary Data	EROC Code of Corp Office	2	77-78
Addenda Indicator	1 (addenda present)	1	79-79
Trace Number	Assigned by Remitter's Bank	15	80-94

ADDENDA RECORD FORMAT

DATA Element Name	Contents	Size	Position
*Record type Code	7	1	01-01
*Addenda Type Code	05	2	02-03
***Payment Related Data	ROV #/Account #;EROC	80	04-83
Sequence Number	Addenda number starting at 0001	4	84-87
Addenda Trace Number	Same as the last 7 numbers of the detail trace number	7	88-94

- \*Data remains same for every transaction  
\*\*EROC Code of Corps District  
\*\*\*Data supplied by Corps District to Customer - If data is not present, transaction will be rejected

UFC-08

Revised 1 April 2006

U.S. ARMY CORPS OF ENGINEERS FINANCE CENTER  
Electronic Funds Transfer  
Customer Implementation Data Sheet

ACH CTX Format

DATA Element Name	Contents	Size	Position
*Record Type Code	6	1	01-01
*Transaction Code	22	2	02-03
*Receiving ABA	05103670	8	04-11
*Check Digit	6	1	12-12
*Account Number	220025	17	13-29
Payment Amount	Amount of Payment (\$\$\$\$cc)	10	30-39
Identification Number	Optional	15	40-54
Number of Addenda	Number of Addenda Records attached	4	55-58
*Receiver Name	USACE Finance Center	22	59-74
Reserved	Blank	2	75-76
**Discretionary Data	EROC Code of Corp Office	2	77-78
Addenda Indicator	1 (addenda present)	1	79-79
Trace Number	Assigned by Remitter's Bank	15	80-94

ADDENDA RECORD FORMAT

DATA Element Name	Contents	Size	Position
*Record Type Code	7	1	01-01
*Addenda Type Code	05	2	02-03
***Payment Related Data	ROV #/Account #; EROC	80	04-83
Sequence Number	Addenda number starting at 0001	4	84-87
Addenda Trace Number	Same as the last 7 numbers of the detail trace number	7	88-94

- \*Data remains same for every transaction  
\*\*EROC Code of Corps District  
\*\*\*Data supplied by Corps District to Customer - If data is not present, transaction will be rejected



Attachment E

DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
FINANCE CENTER  
5722 INTEGRITY DRIVE  
MILLINGTON TENNESSEE 38054-5005

CEFC-FD  
SOP No. UFC-07

1 June 2004  
Revised: 1 April 2006

STANDING OPERATING PROCEDURE  
WIRE TRANSFER OF FUNDS

1. **PURPOSE.** This Standing Operating Procedure (SOP) provides procedures to follow in order to deposit funds into an advance account or a cost sharing account through use of Wire Transfer.
2. **APPLICABILITY.** This SOP applies the USACE Finance Center (UFC) and activities supported by the UFC.
3. **REFERENCE.** SOP No. UFC-03, Collection/Deposit Procedures.
4. **PROCEDURES.** When a customer wishes to use wire transfer procedures to transfer funds to the Corps, the enclosed wire transfer procedures must be followed to ensure accurate and timely credit for funds transferred.
  - a. The customer must notify the supporting F&A Officer in advance of a transfer providing the date of the transfer, amount and the applicable Project Cooperation Agreement (PCA) number or advance account number the funds are intended for. The sponsor must wire the funds through the Federal Reserve Bank of New York using a Type 1000, Structured Third Party Funds Transfer Message to transfer the funds to the UFC. The data needed by the customer's sponsor bank is provided as enclosure 1.
  - b. When notification from the customer is received by the F&A Officer, a Collection Receiving Office Voucher (ROV) must be created in CEFMS. All wire transfer collection vouchers must be submitted to the UFC Disbursing Division using the UFC-DISB-6 Form (enclosure 2). The supported F&A Officer must ensure that all information on the form is provided and forwarded to the UFC arriving in advance of the transfer. There should only be one wire transfer for each ROV.
5. **Ca\$hLink II Agency Access System.** Ca\$hLink II is an on-line U.S. Treasury system that allows the UFC to access and confirm our deposit information the next working day after the wire transfer is posted. The UFC monitors the Ca\$hLink II system daily. Upon verification of the wire transfer in Ca\$hLink II, the UFC will certify the ROV and confirm the deposit. Funds will be available immediately after the deposit confirmation.

CEFC-FD  
SOP No. UFC-07

1 June 2004  
Revised 1 April 2006

The UFC will not require any additional documentation from the supported activity or the customer provided all required documentation identified above is provided. **If a wire transfer is received via Ca\$hLink II that cannot be identified, it will be rejected back to the sender.** Before rejecting a wire transfer, the UFC will research and try to determine the proper supported activity and CEFMS account to update. For those wire transfers rejected by the UFC, the financial institution (bank) that initiated the transfer will notify the customer (sender) of the rejected transaction.

6. **CHANGES.** Refer all discrepancies, comments or questions regarding this SOP to the Chief, Disbursing Division, Directorate of Finance (CEFC-FD) 901-874-8648.

FOR THE DIRECTOR:



SHIRLEY L. AUTRY  
Deputy Director, Finance

Encls

**TYPE 1000, STRUCTURED THIRD PARTY FUNDS TRANSFER MESSAGE**  
(Information Provided by Customer when Making Transfer)

KEY FIELDS - 1000 FUNDS TRANSFER

FIELD NAME	LENGTH	VALUE
Receiver-dfi#	9	021030004 (Standard)
Type-subtype-code	4	1000
Sender-dfi #	9	Sender ABA-number (Bank Routing No.)
Sender-ref-#	16	Filled by sender (Use PCA No.)
Amount	18	Use dollar sign, commas, and decimal point
Sender-dfi-info	80	Filled by sender
Receiver-dfi-info	80	TREAS NYC/CTR/BNF=/AC-00008736

NOTE: THE RECEIVER-DFI-INFO FIELD IS OF CRITICAL IMPORTANCE. IT MUST APPEAR IN THE PRECISE MANNER SHOWN TO ALLOW FOR THE AUTOMATED PROCESSING AND CLASSIFICATION OF THE FUNDS TRANSFER MESSAGE.

Free-text-line-1	80	Filled in by sender
Free-text-line-I	80	Filled in by sender
Free-text-line-l	80	Filled in by sender

WIRE TRANSFER ONLY

RECEIVING VOUCHER ROUTING SLIP

Date Receiving Voucher Entered Into CEFMS: \_\_\_\_\_

Authorized Collector's Name: \_\_\_\_\_

District: \_\_\_\_\_

PCA#, Advance Account Number, Local Cost Share Number: \_\_\_\_\_

Sponsor Name: \_\_\_\_\_

CEFMS Receiving Voucher Number: \_\_\_\_\_

Date of Transfer: \_\_\_\_\_

Amount of Transfer: \_\_\_\_\_

*If you have any questions please contact the Disbursing Division at (901) 874-8432.*

This page intentionally left blank



APPENDIX 4-6

PROGRAMMATIC AGREEMENT

Appendix 4-6, *Programmatic Agreement*, presents the final Programmatic Agreement that will guide the Section 106 process in the determination of project effects as they become known through the course of the project. Implementation of the Programmatic Agreement assists to ensure resources and their proper treatment are taken into consideration in the planning process.

PROGRAMMATIC AGREEMENT

AMONG

FEDERAL HIGHWAY ADMINISTRATION  
ARIZONA STATE HISTORIC PRESERVATION OFFICE  
ARIZONA DEPARTMENT OF TRANSPORTATION  
ARIZONA STATE LAND DEPARTMENT  
ARIZONA STATE MUSUEM  
ARMY CORPS OF ENGINEERS  
BUREAU OF LAND MANAGEMENT  
BUREAU OF RECLAMATION  
SALT RIVER PROJECT  
MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION  
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY  
ROOSEVELT IRRIGATION DISTRICT  
CITY OF AVONDALE  
CITY OF CHANDLER  
CITY OF GLENDALE  
CITY OF PHOENIX  
CITY OF TOLLESON  
AK-CHIN INDIAN COMMUNITY  
CHEMEHUEVI TRIBE  
COCOPAH TRIBE  
COLORADO RIVER INDIAN TRIBE  
FORT MCDOWELL YAVAPAI NATION  
FORT MOJAVE TRIBE  
FORT YUMA-QUECHAN TRIBE  
GILA RIVER INDIAN COMMUNITY  
HAVASUPAI TRIBE  
HOPI TRIBE  
HUALAPAI TRIBE  
KAIBAB-PAIUTE TRIBE  
NAVAJO NATION  
PASCUA YAQUI TRIBE  
PUEBLO OF ZUNI  
SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY  
SAN CARLOS APACHE TRIBE  
SAN JUAN SOUTHERN PAIUTE  
TOHONO O'ODHAM NATION  
TONTON APACHE TRIBE  
WHITE MOUNTAIN APACHE TRIBE  
YAVAPAI-APACHE NATION

**LOOP 202 – SOUTH MOUNTAIN FREEWAY PROJECT  
PROJECT NO. NH-202-D(ADY)  
TRACS NO. 202L MA 054 H5764 01L  
MARICOPA COUNTY, ARIZONA**

**WHEREAS**, the Federal Highway Administration (FHWA) proposes to construct a loop highway connecting Interstate 10 (I-10) west of Phoenix with I-10 south of Phoenix (the Loop 202 – South Mountain Freeway Project), a federally-funded project in Maricopa County, Arizona (hereafter referred to as “the Project”); and

**WHEREAS**, the proposed Project may have an adverse effect upon historic properties, which are defined as “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register of Historic Places, including artifacts, records, and material remains related to such a property or resource” (National Historic Preservation Act [NHPA] 16 U.S.C. 470w, Title III, Section 301 [5]); and

**WHEREAS**, all the historic properties that may be affected by this Project have not yet been identified; and

**WHEREAS**, the proposed project may have an adverse effect upon Traditional Cultural Properties (TCP), which are defined as any place that is “eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community’s history, and (b) are important in maintaining the continuing cultural identity of the community” (National Park Service National Register Bulletin: Guidelines for Evaluating and Documenting Traditional Properties); and

**WHEREAS**, all the Traditional Cultural Properties that may be affected by this Project have not yet been identified; and

**WHEREAS**, the Arizona Department of Transportation (ADOT), acting as agent for FHWA, has participated in consultation and has been invited to be a signatory to this Programmatic Agreement (Agreement); and

**WHEREAS**, the FHWA has consulted with the Arizona State Historic Preservation Office (SHPO), the Bureau of Land Management (BLM), the Army Corps of Engineers (Corps), the Bureau of Reclamation (Reclamation), the Bureau of Indian Affairs, the Arizona State Land Department (ASLD), the Salt River Project (SRP), the City of Avondale (COA), the City of Chandler (COC), the City of Glendale (COG), the City of Phoenix (COP), the City of Tolleson (COT), and the Advisory Council on Historic Preservation (the Council) in accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR §800.6(b)(2)) to resolve the possible adverse effects of the Project on historic properties; and

**WHEREAS**, the Council has participated in consultation and has been invited to be a signatory to the Agreement; and

**WHEREAS**, FHWA and the U.S. Army Corps of Engineers (Corps) have agreed that FHWA will assume lead responsibility for compliance under Section 106 of the National Historic Preservation Act for issuance of permits by the Corps for the development of land and waters of the United States under Section 404 of the Clean Water Act, and the Corps has participated in consultation and been invited to concur in this agreement; and

**WHEREAS**, the Indian Tribes that may attach religious or cultural importance to affected properties have been consulted [pursuant to 36 CFR § 800.2 (c)(2)(ii)(A-F)], and the following tribes have been invited to be Concurring Parties in the Agreement: the Ak-Chin Indian Community, the Chemehuevi Tribe, the Cocopah Tribe, the Colorado River Indian Tribe, the Fort McDowell Yavapai Nation, the Fort Mojave Tribe, the Fort Yuma-Quechan Tribe, the Gila River Indian Community, the Havasupai Tribe, the Hopi Tribe, the Hualapai Tribe, the Kaibab-Paiute Tribe, the Navajo Nation, the Pasqua Yaqui Tribe, the Pueblo of Zuni, the Salt River Pima-Maricopa Indian Community, the San Carlos Apache Tribe, the San Juan Southern Paiute, the Tohono O’Odham Nation, the Tonto Apache Tribe, the White Mountain Apache Tribe, the Yavapai-Apache Nation, and the Yavapai-Prescott Indian Tribe; and

**WHEREAS**, in their role as lead federal agency, FHWA has consulted with the SHPO pursuant to 36 CFR Part 800, regulations implementing Section 106 of the NHPA (16 U.S.C. 470f) as revised in 2000; and

**WHEREAS**, SHPO is authorized to enter into this agreement in order to fulfill its role of advising and assisting Federal agencies in carrying out their Section 106 responsibilities under the following federal statutes: Sections 101 and 106 of the NHPA of 1966, as amended, 16 U.S.C. 470f, and pursuant to 36 CFR Part 800, regulations implementing Section 106, at 800.2(c)(1)(i) and 800.6(b); and

**WHEREAS**, SHPO is authorized to advise and assist federal and state agencies in carrying out their historic preservation responsibilities and cooperate with these agencies under A.R.S. § 41-511.04(D)(4); and

**WHEREAS**, by their signature all parties agree that the regulations specified in the ADOT document, “ADOT Standard Specifications for Road and Bridge Construction” (Section 104.12, 2000) will account for the cultural resources in potential material sources used in Project construction; and

**WHEREAS**, an agreement regarding the treatment and disposition of Human Remains, Associated Funerary Objects, and Objects of Cultural Patrimony would be developed by the Arizona State Museum (ASM) for state and private land; and

**WHEREAS**, in the event that any portion of the Project takes place on Tribal Lands, an agreement regarding the treatment and disposition of Human Remains, Associated Funerary



Objects, and Objects of Cultural Patrimony would be developed by the appropriate Tribal entities; and

**WHEREAS**, Human Remains and Associated Funerary Objects recovered on Federal or Tribal lands will be treated in accordance with the Native American Graves and Protection Repatriation Act (NAGPRA); and

**WHEREAS**, any data recovery on State and private land necessitated by the Project must be permitted by the ASM pursuant to A.R.S. § 41-842; and

**WHEREAS**, any data recovery on Federal lands necessitated by the Project must be permitted under the Archaeological Resource Protection Act (ARPA) in accordance with the Federal land-holding agency; and

**WHEREAS**, in the event that any data recovery for the Project should take place on Tribal lands, all applicable permits would be obtained; and

**NOW, THEREFORE**, all parties agree that upon FHWA's decision to proceed with the Project, FHWA shall ensure that the following stipulations are implemented in order to take into account the effects of the Project on historic properties, and that these stipulations shall govern the Project and all of its parts until this Agreement expires or is terminated.

**Stipulations**

FHWA will ensure that the following measures are carried out.

1. Plans submittal and identification of Area of Potential Effect (APE)  
  
Upon receipt by ADOT, copies of the plans and related documents pertaining to this undertaking including the 30%, 60% and 95% draft construction documents, the Project assessments, design concept reports and cultural resources survey reports will be provided to the consulting parties for review and comment.
2. Identification of historic properties and recommendation of effect  
  
ADOT, on behalf of FHWA, in consultation with all parties to this Agreement, shall ensure that new inventory surveys of the Project APE will include identification of all cultural resources and determinations of eligibility will be made in accordance with 36 CFR § 800.4 for all historic properties.
3. Identification, Evaluation, Documentation, and Mitigation of Impacts to Traditional Cultural Places  
  
FHWA, in consultation with all parties to this Agreement, shall ensure that consultation with the Indian Tribes that may attach religious or cultural importance to affected properties will continue in order to identify, evaluate, document, and mitigate possible

impacts to Traditional Cultural Places according to National Park Service National Register Bulletin Number 38: Guidelines for Evaluating and Documenting Traditional Properties.

4. Development of a Data Recovery Work Plan

The data recovery work plan will be submitted by ADOT, on behalf of FHWA, to all parties to this Agreement for 30 calendar days' review. The data recovery plan will be consistent with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-37). Unless any signatory or concurring party objects to the data recovery plan within 30 calendar days after receipt of the plan, FHWA shall ensure that it is implemented prior to construction.

5. The Data Recovery Work Plan (the Work Plan) will specify:

- a) The properties or portions of properties where data recovery is to be carried out. Also, it will specify any property or portion of property that would be destroyed or altered without treatment;
- b) The results of previous research relevant to the Project, and the research questions to be addressed through data recovery, with an explanation of their relevance and importance;
- c) The field and laboratory analysis methods to be used, with an explanation of their relevance to the research questions;
- d) The methods to be used in analysis, data management, and dissemination of data to the professional community and the public;
- e) The proposed disposition and curation of recovered materials and records in accordance with 36 CFR 79;
- f) Procedures for monitoring, evaluating and treating discoveries of unexpected or newly identified properties during construction of the Project, including consultation with other parties;
- g) A protocol for the treatment of Human Remains, in the event that such remains are discovered, describing methods and procedures for the recovery, analysis, treatment, and disposition of Human Remains, Associated Funerary Objects, and Objects of Cultural Patrimony. This protocol will reflect concerns and/or conditions identified as a result of consultations among parties to this Agreement;
- h) A proposed schedule for Project tasks, including a schedule for the submission of draft and final reports to consulting parties.



#### 6. Review and comment on the Work Plan

- a) Upon receipt of a draft of the Work Plan, ADOT, on behalf of FHWA, will review and subsequently submit such documents concurrently to all consulting parties for review. All consulting parties will have 30 calendar days from receipt to review and provide written comments to ADOT. Lack of response within this review period will be taken as concurrence with the plan.
- b) If revisions to the Work Plan are made all consulting parties have 20 calendar days from receipt to review the revisions and provide written comments to ADOT. Lack of response within this review period will be taken as concurrence with the plan or report.
- c) Once the Work Plan is determined adequate by all parties (with SHPO concurrence), FHWA shall issue authorization to proceed with the implementation of the Work Plan, subject to obtaining all necessary permits.
- d) Final drafts of the Work Plan will be provided to all consulting parties.

#### 7. Review and Comment on Preliminary Report of Findings

- a) Upon completion of fieldwork, the institution, firm, or consultant responsible for the work will prepare and submit a brief Preliminary Report of Findings.
- b) Upon receipt of a draft of the Preliminary Report, ADOT, on behalf of FHWA, will review and subsequently submit such documents concurrently to all consulting parties for review. All consulting parties will have 30 calendar days from receipt to review and provide written comments to ADOT. Lack of response within this review period will be taken as concurrence with the Report.
- c) If revisions to the Preliminary Report of Findings are made, all consulting parties have 20 calendar days from receipt to review the revisions and provide written comments to ADOT. Lack of response within this review period will be taken as concurrence with the report.
- d) Once the Preliminary Report of Findings has been accepted as a final document, ADOT, on behalf of FHWA, will notify appropriate Project participants that construction may proceed.

#### 8. Review and Comment on Data Recovery Report

- a) Upon completion of data recovery, a report will be prepared incorporating all appropriate data analyses and interpretations. The schedule for completion of the report will be developed in accordance with Stipulation 5 (h) above, and in consultation with signatories and concurring parties to this Agreement.

- b) Upon receipt of the data recovery report, ADOT, on behalf of FHWA, will review and subsequently submit such documents concurrently to all consulting parties for review. All consulting parties will have 30 calendar days from receipt to review and provide written comments to ADOT. Lack of response within this review period will be taken as concurrence with the Report.

- b) If revisions to the data recovery report are made, all consulting parties have 20 calendar days from receipt to review the revisions and provide written comments to ADOT. Lack of response within this review period will be taken as concurrence with the report.

#### 9. Standards for Monitoring and Data Recovery

All historic preservation work carried out pursuant to this Agreement shall be carried out by or under the supervision of a person, or persons, meeting at a minimum the Secretary of the Interior's Professional Qualifications Standards (48 FR 44738-44739).

#### 10. Curation

All materials and records resulting from the data recovery program conducted within the Project area, except as noted below, shall be curated in accordance with standards 36 CFR 79 and guidelines generated by ASM. The repository for materials either will be ASM or one that meets those standards and guidelines in Maricopa County.

All materials and records resulting from data recovery undertaking on land owned by Reclamation shall be curated in accordance with standards 36 CFR 79 and guidelines generated by the Huhugam Heritage Center, Gila River Indian Reservation. The repository for materials recovered from Reclamation land will be the Huhugam Heritage Center.

All materials subject to repatriation under NAGPRA, A.R.S. § 41-844 and A.R.S. § 41-865 shall be maintained in accordance with the burial agreement until any specified analyses, as determined following consultation with the appropriate Indian tribes and individuals, are complete and the materials are returned.

#### 11. Additional Inventory Survey

ADOT, on behalf of FHWA, in consultation with all parties to this agreement shall ensure that new inventory surveys of additional rights-of-way and temporary construction easements will include determinations of eligibility that are made in accordance with 36 CFR § 800.4(c) for all historic properties, including any added staging or use areas. Should any party to this Agreement disagree with FHWA regarding eligibility, the SHPO shall be consulted and resolution sought within 30 calendar days. If the FHWA and SHPO disagree on eligibility, FHWA shall request a formal determination from the Keeper of the National Register.



## 12. Objection by a Signatory

Should any signatory to this Agreement object within 30 days to any plan or report provided for review or to any aspect of this undertaking related to historic preservation issues, FHWA shall consult with the objecting party to resolve the objection. If an objection by a signatory to this agreement cannot be resolved, FHWA shall request further comments of the Council with reference only to the subject of the dispute; the FHWA's responsibility to carry out all actions under this Agreement that are not the subject of the dispute will remain unchanged.

## 13. Discoveries

If potential historic or prehistoric archaeological materials or properties are discovered after construction begins, the person in charge of the construction shall promptly report the discovery to the ADOT Historic Preservation Specialist, representing FHWA. If human remains or funerary objects are discovered, ADOT shall require construction to immediately cease within the area of the discovery, take steps to protect the discovery, and notify and consult with appropriate Native American groups to determine treatment and disposition measures in accordance with the previously implemented burial agreement. The Director of the ASM (the Director) shall also be informed. In consultation with the Director and ADOT, on behalf of FHWA, the person in charge of construction shall immediately take steps to secure and maintain preservation of the discovery. If the discovery appears to involve Human Remains as defined in ASM rules implementing A.R.S. § 41-844 and 41-865, ASM and FHWA shall ensure that the discovery is treated according to the burial agreement. If the discovery is on Federal or Tribal land and appears to involve Human Remains as defined in NAGPRA, ADOT on behalf of FHWA shall ensure that the discovery is treated according to NAGPRA.

If Human Remains are not involved, then the ADOT Historic Preservation Specialist shall evaluate the discovery, and in consultation with FHWA and SHPO, determine if the Plan previously approved in accordance with Stipulation 4 is appropriate to the nature of the discovery. If appropriate, the Plan shall be implemented by ADOT, on behalf of FHWA. If the Plan is not appropriate to the discovery, FHWA shall ensure that an alternate plan for the resolution of adverse effect is developed pursuant to 36 CFR § 800.6 and circulated to the consulting parties, who will have 48-hours to review and comment upon the alternate plan. FHWA shall consider the resulting comments, and shall implement the alternate plan once a project specific permit has been issued.

If potential prehistoric or historic archaeological materials or properties are discovered on Reclamation land after construction has begun, the person in charge of construction shall promptly report the discovery to the Phoenix Area Office of the Bureau of Reclamation as well as the ADOT Historic Preservation Specialist.

## 14. Amendments

This Agreement may be amended by the signatories pursuant to 36 CFR § 800.6 (c) (7). FHWA shall file any amendments with the Council and provide notice to the concurring parties.

## 15. Termination

Any signatory may terminate the Agreement by providing 30 day written notification to the other signatories. During this 30-day period, the signatories may consult to seek agreement on amendments or other actions that would avoid termination pursuant to 36 CFR § 800.6 (b). If the parties cannot agree on actions to resolve disagreements, FHWA will comply with 36 CFR § 800.7(a).

16. In the event the FHWA or ADOT cannot carry out the terms of this agreement, the FHWA will comply with 36 CFR § 800.3 through 800.6.

17. There shall be an annual meeting among FHWA, SHPO, and ADOT to review the effectiveness and application of this agreement, to be held on or near the anniversary date of the execution of this agreement.

This agreement shall be null and void if its terms are not carried out within ten (10) years from the date of its execution, unless the signatories agree in writing to an extension for carrying out its terms.

Execution of this Agreement by the signatories and its subsequent filing with the Council is evidence that the Federal Highway Administration has afforded the Advisory Council on Historic Preservation an opportunity to comment on Loop 202 – South Mountain Freeway Project and its effects on historic properties, and that the Federal Highway Administration has taken into account the effects of the undertaking on historic properties.

**SIGNATORIES**

FEDERAL HIGHWAY ADMINISTRATION

By Steph D. Thomas Date 12/20/06  
Title Environmental Program Manager

ARIZONA STATE HISTORIC PRESERVATION OFFICER

By James Giaman Date 12/28/06  
Title AZSHAPO

**INVITED SIGNATORIES**

ARIZONA DEPARTMENT OF TRANSPORTATION

By Thor Anderson Date 12-5-06  
Title Manager, Environmental Planning Group

**CONCURRING PARTIES**

ARIZONA STATE LAND DEPARTMENT

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

BUREAU OF RECLAMATION

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

BUREAU OF LAND MANAGEMENT

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

U. S. ARMY CORPS OF ENGINEERS

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

SALT RIVER PROJECT

By Ray Hedrick Date 1/15/07  
Title Manager, Siting & Studies

MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_



BUREAU OF RECLAMATION

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

BUREAU OF LAND MANAGEMENT

By \_\_\_\_\_  
Title \_\_\_\_\_ Date \_\_\_\_\_

U. S. ARMY CORPS OF ENGINEERS

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

SALT RIVER PROJECT

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION

By [Signature] Date 01-16-07  
Title Environment Programs Mgr  
MDOT Transportation Planning Division

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

BUREAU OF RECLAMATION

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

BUREAU OF LAND MANAGEMENT

By \_\_\_\_\_  
Title \_\_\_\_\_ Date \_\_\_\_\_

U. S. ARMY CORPS OF ENGINEERS

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

SALT RIVER PROJECT

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

By [Signature] Date 1-30-07  
Title Environment and Safety Program Manager

ROOSEVELT IRRIGATION DISTRICT

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

CITY OF AVONDALE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

CITY OF CHANDLER

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

CITY OF GLENDALE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

CITY OF PHOENIX

By Barbara Stahl

Date 1-8-07

Title Historic Preservation Officer

CITY OF TOLLESON

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

AK-CHIN INDIAN COMMUNITY

By \_\_\_\_\_

Date \_\_\_\_\_

Final Programmatic Agreement  
Loop 202 – South Mountain Freeway  
December 2006

CONCURRING PARTIES

ARIZONA STATE MUSEUM

By Jonathan H. Romaguera

Date January 10, 2007

Title DIRECTOR

**Addendum**  
Final Programmatic Agreement  
Loop 202 – South Mountain Freeway  
December 2006

Title \_\_\_\_\_

CHEMEHUEVI TRIBE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

COCOPAH TRIBE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

COLORADO RIVER INDIAN TRIBE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

FORT MCDOWELL YAVAPAI NATION

By [Signature]

Date 1-11-07

Title President

FORT MOJAVE TRIBE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

FORT YUMA-QUECHAN TRIBE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

GILA RIVER INDIAN COMMUNITY

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

HAVASUPAI TRIBE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

HOPI TRIBE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

HUALAPAI TRIBE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

KAIBAB-PAIUTE TRIBE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

NAVAJO NATION

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

PASCUA YAQUI TRIBE

By \_\_\_\_\_

Date \_\_\_\_\_



Title \_\_\_\_\_

PUEBLO OF ZUNI

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

SAN CARLOS APACHE TRIBE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

SAN JUAN SOUTHERN PAIUTE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

TOHONO O'ODHAM NATION

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

TONTO APACHE TRIBE

By 

Date 020307

Title \_\_\_\_\_

WHITE MOUNTAIN APACHE TRIBE

By \_\_\_\_\_

Date \_\_\_\_\_

Title \_\_\_\_\_

YAVAPAI-APACHE NATION

By 

Date 1/3/07

Title ARCHAEOLOGIST



**Department of Energy**  
Western Area Power Administration  
Desert Southwest Customer Service Region  
P.O. Box 6457  
Phoenix, AZ 85005-6457

OCT 28 2010

OCT 25 2010

Robert E. Hollis, District Administrator  
Arizona Department of Transportation  
4000 North Central Avenue, Suite 1500  
Phoenix, Arizona 85012-3500

**RE: Programmatic Agreement for the Federal Highway Administration and Arizona Department of Transportation South Mountain Freeway Project, Mohave County.**

Dear Mr. Hollis:

The Western Area Power Administration (Western) has received the Programmatic Agreement (PA) regarding the Environmental Impact Statement (EIS) which was developed for the proposed South Mountain Freeway Project. The signed agreement is enclosed with the letter.

Western supports the Federal Highway Administration and the Arizona Department of Transportation in their section 106 responsibilities related to the project. Western's participation in the PA supports our requirements under the National Historic Preservation Act related to the requirement to move our transmission lines to accommodate the construction of this project.

Western looks forward to participating in future meetings and reviewing related documents for the PA. Thank you for inviting us to sign the PA.

If you have any questions or comments, please do not hesitate to contact Mary Barger at (602) 605-2524 or call me at (602) 605-2592.

Sincerely,

John R. Holt  
Environmental Manager

Enclosure

**PROGRAMMATIC AGREEMENT**

**AMONG**

**FEDERAL HIGHWAY ADMINISTRATION  
ARIZONA STATE HISTORIC PRESERVATION OFFICE  
ARIZONA DEPARTMENT OF TRANSPORTATION**

**LOOP 202 – SOUTH MOUNTAIN FREEWAY PROJECT  
PROJECT NO. NH-202-D(ADY )  
TRACS NO. 202L MA 054 H5764 01L  
MARICOPA COUNTY, ARIZONA**

**WHEREAS**, the Federal Highway Administration (FHWA) proposes to construct a loop highway connecting Interstate 10 (I-10) west of Phoenix with I-10 south of Phoenix (the Loop 202 – South Mountain Freeway Project), a federally-funded project in Maricopa County, Arizona (hereafter referred to as “the Project”); and

**WHEREAS**, the proposed Project may have an adverse effect upon historic properties, which are defined as “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register of Historic Places, including artifacts, records, and material remains related to such a property or resource”(National Historic Preservation Act [NHPA] 16 U.S.C. 470w, Title III, Section 301 [5]); and

**WHEREAS**, all the historic properties that may be affected by this Project have not yet been identified; and

**WHEREAS**, the proposed project may have an adverse effect upon Traditional Cultural Properties (TCP) which is defined as a place that is “eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community’s history, and (b) are important in maintaining the continuing cultural identity of the community” (National Park Service National Register Bulletin: Guidelines for Evaluating and Documenting Traditional Properties); and

**WHEREAS**, all the Traditional Cultural Places that may be affected by this Project have not yet been identified; and

**WHEREAS**, the Arizona Department of Transportation (ADOT), acting as agent for FHWA, has participated in consultation and has been invited to be a signatory to this Programmatic Agreement (Agreement); and

**WHEREAS**, the FHWA has consulted with the Arizona State Historic Preservation Office (SHPO), the Bureau of Land Management (BLM), the Bureau of Reclamation (Reclamation), the Bureau of Indian Affairs, the Western Area Power Administration (Western), the Arizona State Land Department (ASLD), the Salt River Project (SRP), the City of Avondale (COA), the City of Chandler (COC), the City of Glendale (COG), the City of Phoenix (COP), the City of Tolleson



(COT), and the Advisory Council on Historic Preservation (the Council) in accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR §800.6(b)(2)) to resolve the possible adverse effects of the Project on historic properties; and

**WHEREAS**, the Council has participated in consultation and has been invited to be a signatory to the Agreement; and

**WHEREAS**, FHWA and the U.S. Army Corps of Engineers (Corps) have agreed that FHWA will assume lead responsibility for compliance under Section 106 of the National Historic Preservation Act for issuance of permits by the Corps for the development of land and waters of the United States under Section 404 of the Clean Water Act, and the Corps has participated in consultation and been invited to concur in this agreement; and

**WHEREAS**, the Indian Tribes that may attach religious or cultural importance to affected properties have been consulted [pursuant to 36 CFR § 800.2 (c)(2)(ii)(A-F)], and the following tribes have been invited to be Concurring Parties in the Agreement: the Ak-Chin Indian Community, the Chemehuevi Tribe, the Cocopah Tribe, the Colorado River Indian Tribe, the Fort McDowell Yavapai Nation, the Fort Mojave Tribe, the Fort Yuma-Quechan Tribe, the Gila River Indian Community, the Havasupai Tribe, the Hopi Tribe, the Hualapai Tribe, the Kaibab-Paiute Tribe, the Navajo Nation, the Pasqua Yaqui Tribe, the Pueblo of Zuni, the Salt River Pima-Maricopa Indian Community, the San Carlos Apache Tribe, the San Juan Southern Paiute, the Tohono O'Odham Nation, the Tonto Apache Tribe, the White Mountain Apache Tribe, the Yavapai-Apache Nation, and the Yavapai-Prescott Indian Tribe; and

**WHEREAS**, in their role as lead federal agency, FHWA has consulted with the SHPO pursuant to 36 CFR Part 800, regulations implementing Section 106 of the NHPA (16 U.S.C. 470f) as revised in 2000; and

**WHEREAS**, SHPO is authorized to enter into this agreement in order to fulfill its role of advising and assisting Federal agencies in carrying out their Section 106 responsibilities under the following federal statutes: Sections 101 and 106 of the NHPA of 1966, as amended, 16 U.S.C. 470f, and pursuant to 36 CFR Part 800, regulations implementing Section 106, at 800.2(c)(1)(i) and 800.6(b); and

**WHEREAS**, SHPO is authorized to advise and assist federal and state agencies in carrying out their historic preservation responsibilities and cooperate with these agencies under A.R.S. § 41-511.04(D)(4); and

**WHEREAS**, by their signature all parties agree that the regulations specified in the ADOT document, "ADOT Standard Specifications for Road and Bridge Construction" (Section 104.12, 2000) will account for the cultural resources in potential material sources used in Project construction; and

**WHEREAS**, an agreement regarding the treatment and disposition of Human Remains, Associated Funerary Objects, and Objects of Cultural Patrimony would be developed by the Arizona State Museum (ASM) for state and private land; and

**WHEREAS**, in the event that any portion of the Project takes place on Tribal Lands, an agreement regarding the treatment and disposition of Human Remains, Associated Funerary

Objects, and Objects of Cultural Patrimony would be developed by the appropriate Tribal entities; and

**WHEREAS**, Human Remains and Associated Funerary Objects recovered on Federal or Tribal lands will be treated in accordance with the Native American Graves and Protection Repatriation Act (NAGPRA); and

**WHEREAS**, any data recovery on State and private land necessitated by the Project must be permitted by the ASM pursuant to A.R.S. § 41-842; and

**WHEREAS**, any data recovery on Federal lands necessitated by the Project must be permitted under the Archaeological Resource Protection Act (ARPA) in accordance with the Federal land-holding agency; and

**WHEREAS**, in the event that any data recovery for the Project should take place on Tribal lands, all applicable permits would be obtained; and

**NOW, THEREFORE**, all parties agree that upon FHWA's decision to proceed with the Project, FHWA shall ensure that the following stipulations are implemented in order to take into account the effects of the Project on historic properties, and that these stipulations shall govern the Project and all of its parts until this Agreement expires or is terminated.

#### Stipulations

FHWA will ensure that the following measures are carried out.

1. Plans submittal and identification of Area of Potential Effect (APE)

Upon receipt by ADOT, copies of the plans and related documents pertaining to this undertaking including the 30%, 60% and 95% draft construction documents, the Project assessments, design concept reports and cultural resources survey reports will be provided to the consulting parties for review and comment.

2. Identification of historic properties and recommendation of effect

ADOT, on behalf of FHWA, in consultation with all parties to this Agreement, shall ensure that new inventory surveys of the Project APE will include identification of all cultural resources and determinations of eligibility that are made in accordance with 36 CFR § 800.4 for all historic properties.

3. Identification, Evaluation, Documentation, and Mitigation of Impacts to Traditional Cultural Places



FHWA in consultation with all parties to this Agreement, shall ensure that consultation with the Indian Tribes that may attach religious or cultural importance to affected properties will continue in order to identify, evaluate, document, and mitigate possible impacts to Traditional Cultural Places according to National Park Service National Register Bulletin 38: Guidelines for Evaluating and Documenting Traditional Properties.

4. Development of a Data Recovery Work Plan

The data recovery work plan will be submitted by ADOT, on behalf of FHWA, to all parties to this Agreement for 30 calendar days' review. The data recovery plan will be consistent with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation (48 FR 44734-37). Unless any signatory or concurring party objects to the data recovery plan within 30 calendar days after receipt of the plan, FHWA shall ensure that it is implemented prior to construction.

5. The Data Recovery Work Plan (the Work Plan) will specify:

- a) The properties or portions of properties where data recovery is to be carried out. Also, it will specify any property or portion of property that would be destroyed or altered without treatment;
- b) The results of previous research relevant to the Project, and the research questions to be addressed through data recovery, with an explanation of their relevance and importance;
- c) The field and laboratory analysis methods to be used, with an explanation of their relevance to the research questions;
- d) The methods to be used in analysis, data management, and dissemination of data to the professional community and the public;
- e) The proposed disposition and curation of recovered materials and records in accordance with 36 CFR 79;
- f) Procedures for monitoring, evaluating and treating discoveries of unexpected or newly identified properties during construction of the Project, including consultation with other parties;
- g) A protocol for the treatment of Human Remains, in the event that such remains are discovered, describing methods and procedures for the recovery, analysis, treatment, and disposition of Human Remains, Associated Funerary Objects, and Objects of Cultural Patrimony. This protocol will reflect concerns and/or conditions identified as a result of consultations among parties to this Agreement;
- h) A proposed schedule for Project tasks, including a schedule for the submission of draft and final reports to consulting parties.

6. Review and comment on the Work Plan

- a) Upon receipt of a draft of the Work Plan, ADOT, on behalf of FHWA, will review and subsequently submit such documents concurrently to all consulting parties for review. All consulting parties will have 30 calendar days from receipt to review and provide comments to ADOT. All comments shall be in writing with copies provided to the other consulting parties. Lack of response within this review period will be taken as concurrence with the plan.
- b) If revisions to the Work Plan are made all consulting parties have 20 calendar days from receipt to review the revisions and provide written comments to ADOT. Lack of response within this review period will be taken as concurrence with the plan or report.
- c) Once the Work Plan is determined adequate by all parties (with SHPO concurrence), FHWA shall issue authorization to proceed with the implementation of the Work Plan, subject to obtaining all necessary permits.
- d) Final drafts of the Work Plan will be provided to all consulting parties.

7. Review and Comment on Preliminary Report of Findings

- a) Upon completion of fieldwork, the institution, firm, or consultant responsible for the work will prepare and submit a brief Preliminary Report of Findings.
- b) Upon receipt of a draft of the Preliminary Report, ADOT, on behalf of FHWA, will review and subsequently submit such documents concurrently to all consulting parties for review. All consulting parties will have 30 calendar days from receipt to review and provide written comments to ADOT. Lack of response within this review period will be taken as concurrence with the Report.
- c) If revisions to the Preliminary Report of Findings are made, all consulting parties have 20 calendar days from receipt to review the revisions and provide written comments to ADOT. Lack of response within this review period will be taken as concurrence with the report.
- d) Once the Preliminary Report of Findings has been accepted as a final document, ADOT, on behalf of FHWA, will notify appropriate Project participants that construction may proceed.

8. Review and Comment on Data Recovery Report

- a) Upon completion of data recovery, a report will be prepared incorporating all appropriate data analyses and interpretations. The schedule for completion of the



report will be developed in accordance with Stipulation 5 (h) above, and in consultation with signatories and concurring parties to this Agreement.

- b) Upon receipt of the data recovery report, ADOT, on behalf of FHWA, will review and subsequently submit such documents concurrently to all consulting parties for review. All consulting parties will have 30 calendar days from receipt to review and provide written comments to ADOT. Lack of response within this review period will be taken as concurrence with the Report.
- c) If revisions to the data recovery report are made, all consulting parties have 20 calendar days from receipt to review the revisions and provide written comments to ADOT. Lack of response within this review period will be taken as concurrence with the report.

#### 9. Standards for Monitoring and Data Recovery

All historic preservation work carried out pursuant to this Agreement shall be carried out by or under the supervision of a person, or persons, meeting at a minimum the Secretary of the Interior's Professional Qualifications Standards (48 FR 44738-44739).

#### 10. Curation

All materials and records resulting from the data recovery program conducted within the Project area, except as noted below, shall be curated in accordance with standards 36 CFR 79 and guidelines generated by ASM. The repository for materials either will be ASM or one that meets those standards and guidelines in Maricopa County.

All materials and records resulting from data recovery undertaking on land owned by Reclamation shall be curated in accordance with standards 36 CFR 79 and guidelines generated by the Huhugam Heritage Center, Gila River Indian Reservation. The repository for materials recovered from Reclamation land will be the Huhugam Heritage Center.

All materials subject to repatriation under NAGPRA, A.R.S. § 41-844 and A.R.S. § 41-865 shall be maintained in accordance with the burial agreement until any specified analyses, as determined following consultation with the appropriate Indian tribes and individuals, are complete and the materials are returned.

#### 11. Additional Inventory Survey

ADOT, on behalf of FHWA, in consultation with all parties to this agreement shall ensure that new inventory surveys of additional rights-of-way and temporary construction easements will include determinations of eligibility that are made in accordance with 36 CFR § 800.4(c) for all historic properties, including any added staging or use areas. Should any party to this Agreement disagree with FHWA regarding eligibility, the SHPO shall be consulted and resolution sought within 30 calendar days. If the FHWA and SHPO disagree

on eligibility, FHWA shall request a formal determination from the Keeper of the National Register.

#### 12. Objection by a Signatory or Concurring Party

Should any signatory to this Agreement object within 30 days to any plan or report provided for review or to any aspect of this undertaking related to historic preservation issues, FHWA shall consult with the objecting party to resolve the objection. If an objection by a signatory to this agreement cannot be resolved, FHWA shall request further comments of the Council with reference only to the subject of the dispute; the FHWA's responsibility to carry out all actions under this Agreement that are not the subject of the dispute will remain unchanged.

#### 13. Discoveries

If potential historic or prehistoric archaeological materials or properties are discovered after construction begins, the person in charge of the construction shall promptly report the discovery to the ADOT Historic Preservation Specialist, representing FHWA. If human remains or funerary objects are discovered, ADOT shall require construction to immediately cease within the area of the discovery, take steps to protect the discovery, and notify and consult with appropriate Native American groups to determine treatment and disposition measures in accordance with the previously implemented burial agreement. The Director of the ASM (the Director) shall also be informed. In consultation with the Director and ADOT, on behalf of FHWA, the person in charge of construction shall immediately take steps to secure and maintain preservation of the discovery. If the discovery appears to involve Human Remains as defined in ASM rules implementing A.R.S. § 41-844 and 41-865, ASM and FHWA shall ensure that the discovery is treated according to the burial agreement. If the discovery is on Federal or Tribal land and appears to involve Human Remains as defined in NAGPRA, ADOT on behalf of FHWA shall ensure that the discovery is treated according to NAGPRA.

If Human Remains are not involved, then the ADOT Historic Preservation Specialist shall evaluate the discovery, and in consultation with FHWA and SHPO, determine if the Plan previously approved in accordance with Stipulation 4 is appropriate to the nature of the discovery. If appropriate, the Plan shall be implemented by ADOT, on behalf of FHWA. If the Plan is not appropriate to the discovery, FHWA shall ensure that an alternate plan for the resolution of adverse effect is developed pursuant to 36 CFR § 800.6 and circulated to the consulting parties, who will have 48 hours to review and comment upon the alternate plan. FHWA shall consider the resulting comments, and shall implement the alternate plan once a project specific permit has been issued.

If potential prehistoric or historic archaeological materials or properties are discovered on Reclamation land after construction has begun, the person in charge of construction shall promptly report the discovery to the Phoenix Area Office of the Bureau of Reclamation as well as the ADOT Historic Preservation Specialist.



14. Amendments

This Agreement may be amended by the signatories pursuant to 36 CFR § 800.6 (c) (7). FHWA shall file any amendments with the Council and provide notice to the concurring parties.

15. Termination

Any signatory may terminate the Agreement by providing 30 day written notification to the other signatories. During this 30-day period, the signatories may consult to seek agreement on amendments or other actions that would avoid termination pursuant to 36 CFR § 800.6 (b). If the parties cannot agree on actions to resolve disagreements, FHWA will comply with 36 CFR § 800.7(a).

16. In the event the FHWA or ADOT cannot carry out the terms of this agreement, the FHWA will comply with 36 CFR § 800.3 through 800.6.

17. There shall be an annual meeting among FHWA, SHPO, and ADOT to review the effectiveness and application of this agreement, to be held on or near the anniversary date of the execution of this agreement.

This agreement shall be null and void if its terms are not carried out within ten (10) years from the date of its execution, unless the signatories agree in writing to an extension for carrying out its terms.

Execution of this Agreement by the signatories and its subsequent filing with the Council is evidence that the Federal Highway Administration has afforded the Advisory Council on Historic Preservation an opportunity to comment on Loop 202 – South Mountain Freeway Project and its effects on historic properties, and that the Federal Highway Administration has taken into account the effects of the undertaking on historic properties.

SIGNATORIES

FEDERAL HIGHWAY ADMINISTRATION

By Mary E. Faye  
Title Environmental Program Manager

Date 9/16/2010

ARIZONA STATE HISTORIC PRESERVATION OFFICER

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

INVITED SIGNATORIES

ARIZONA DEPARTMENT OF TRANSPORTATION

By Shirley Anderson  
Title Manager, Environmental Planning Group

Date 9/15/10

CONCURRING PARTIES

ARIZONA STATE LAND DEPARTMENT

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_



BUREAU OF RECLAMATION

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

BUREAU OF LAND MANAGEMENT

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

U.S ARMY CORPS OF ENGINEERS

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

SALT RIVER PROJECT

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

ROOSEVELT IRRIGATION DISTRICT

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

CITY OF AVONDALE

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

CITY OF CHANDLER

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

CITY OF GLENDALE

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

CITY OF PHOENIX

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

CITY OF TOLLESON

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

AK-CHIN INDIAN COMMUNITY

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

CHEMEHUEVI TRIBE

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

COCOPAH TRIBE

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

COLORADO RIVER INDIAN TRIBE

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

FORT MCDOWELL YAVAPAI NATION

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

FORT MOJAVE TRIBE

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

FORT YUMA-QUECHAN TRIBE

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

GILA RIVER INDIAN COMMUNITY

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

HAVASUPAI TRIBE

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

HOPI TRIBE

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

HUALAPAI TRIBE

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

KAIBAB-PAIUTE TRIBE

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

NAVAJO NATION

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

PASCUA YAQUI TRIBE

By \_\_\_\_\_ Date \_\_\_\_\_  
Title \_\_\_\_\_

PUEBLO OF ZUNI

By \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY

By \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

SAN CARLOS APACHE TRIBE

By \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

SAN JUAN SOUTHERN PAIUTE

By \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

TOHONO O'ODHAM NATION

By \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

TONTO APACHE TRIBE

By \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

WHITE MOUNTAIN APACHE TRIBE

By \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

YAVAPAI-APACHE NATION

By \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_

ARIZONA STATE MUSEUM

By \_\_\_\_\_

Title \_\_\_\_\_ Date \_\_\_\_\_

WESTERN AREA POWER ADMINISTRATION

By 

Title Regional Manager, ASW Date 10/18/2010



APPENDIX 4-7

FARMLAND CONVERSION

Appendix 4-7, *Farmland Conversion*, contains the US Department of Agriculture Natural Resources Conservation Services Farmland Conversion Impact Rating form (form NRCS-CPA-106) for Corridor Type Projects. The Farmland Protection Policy Act (FPPA) was established to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. This impact rating is being completed to ensure compliance with FPPA.

U.S. DEPARTMENT OF AGRICULTURE  
Natural Resources Conservation Service

NRCS-CPA-106  
(Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING  
FOR CORRIDOR TYPE PROJECTS

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request 11/18/13		4. Sheet 1 of 3	
1. Name of Project South Mountain Transportation Corridor		5. Federal Agency Involved Federal Highway Administration			
2. Type of Project EIS/LDCR		6. County and State Maricopa County, Arizona			
PART II (To be completed by NRCS)		1. Date Request Received by NRCS 11/18/13		2. Person Completing Form Andrew Burnes	
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form).		YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		4. Acres Irrigated 267,295	
5. Major Crop(s) alfalfa, cotton, grains		6. Farmable Land in Government Jurisdiction Acres: 267,295 % 3.2		7. Amount of Farmland As Defined in FPPA Acres: 190,182 % 3.2	
8. Name Of Land Evaluation System Used N/A		9. Name of Local Site Assessment System N/A		10. Date Land Evaluation Returned by NRCS	
PART III (To be completed by Federal Agency)		Alternative Corridor For Segment - Western Section			
		W59		W71	
A. Total Acres To Be Converted Directly		588		501	
B. Total Acres To Be Converted Indirectly, Or To Receive Services					
C. Total Acres In Corridor		588		501	
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland		588		501	
B. Total Acres Statewide And Local Important Farmland					
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		24		25	
PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)		85		87	
PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))		Maximum Points			
1. Area in Nonurban Use		15		10	
2. Perimeter in Nonurban Use		10		7	
3. Percent Of Corridor Being Farmed		20		12	
4. Protection Provided By State And Local Government		20		0	
5. Size of Present Farm Unit Compared To Average		10		5	
6. Creation Of Nonfarmable Farmland		25		10	
7. Availability Of Farm Support Services		5		3	
8. On-Farm Investments		20		15	
9. Effects Of Conversion On Farm Support Services		25		8	
10. Compatibility With Existing Agricultural Use		10		4	
TOTAL CORRIDOR ASSESSMENT POINTS		160		74	
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100		85	
Total Corridor Assessment (From Part VI above or a local site assessment)		160		74	
TOTAL POINTS (Total of above 2 lines)		260		159	
1. Corridor Selected:		2. Total Acres of Farmlands to be Converted by Project:		3. Date Of Selection:	
				4. Was A Local Site Assessment Used?  YES <input type="checkbox"/> NO <input type="checkbox"/>	
5. Reason For Selection:					
Signature of Person Completing this Part: _____ DATE _____					
NOTE: Complete a form for each segment with more than one Alternate Corridor					

FARMLAND CONVERSION IMPACT RATING  
FOR CORRIDOR TYPE PROJECTS

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request 11/18/13		4. Sheet 2 of 3	
1. Name of Project South Mountain Transportation Corridor		5. Federal Agency Involved Federal Highway Administration			
2. Type of Project EIS/LDCR		6. County and State Maricopa County, Arizona			
PART II (To be completed by NRCS)		1. Date Request Received by NRCS 11/18/13		2. Person Completing Form Andrew Burnes	
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		4. Acres Irrigated 267,295		Average Farm Size 302	
5. Major Crop(s) alfalfa, cotton, grains	6. Farmable Land in Government Jurisdiction Acres: 267,295 % 3.2		7. Amount of Farmland As Defined in FPPA Acres: 190,182 % 3.2		
8. Name Of Land Evaluation System Used N/A	9. Name of Local Site Assessment System N/A		10. Date Land Evaluation Returned by NRCS		

PART III (To be completed by Federal Agency)	Alternative Corridor For Segment - Western Section			
	W101EPR	W101WPR		W101CFR
A. Total Acres To Be Converted Directly	744	788		737
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	744	788		737
PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	744	788		737
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	21	23		25
PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)	88	85		85
PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))	Maximum Points			
1. Area in Nonurban Use	15	9	10	9
2. Perimeter in Nonurban Use	10	6	7	7
3. Percent Of Corridor Being Farmed	20	11	12	12
4. Protection Provided By State And Local Government	20	0	0	0
5. Size of Present Farm Unit Compared To Average	10	5	5	5
6. Creation Of Nonfarmable Farmland	25	10	10	10
7. Availability Of Farm Support Services	5	3	3	3
8. On-Farm Investments	20	15	15	15
9. Effects Of Conversion On Farm Support Services	25	8	8	8
10. Compatibility With Existing Agricultural Use	10	4	4	4
TOTAL CORRIDOR ASSESSMENT POINTS	160	71	74	73
PART VII (To be completed by Federal Agency)				
Relative Value Of Farmland (From Part V)	100	88	85	85
Total Corridor Assessment (From Part VI above or a local site assessment)	160	71	74	73
TOTAL POINTS (Total of above 2 lines)	260	159	159	158
1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?	
			YES <input type="checkbox"/> NO <input type="checkbox"/>	
5. Reason For Selection:				

Signature of Person Completing this Part:DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

FARMLAND CONVERSION IMPACT RATING  
FOR CORRIDOR TYPE PROJECTS

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request		4. Sheet 3 of 3	
1. Name of Project South Mountain Transportation Corridor		5. Federal Agency Involved Federal Highway Administration			
2. Type of Project EIS		6. County and State Maricopa County, Arizona			
PART II (To be completed by NRCS)		1. Date Request Received by NRCS 11/18/13		2. Person Completing Form Andrew Burnes	
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		4. Acres Irrigated 267,295		Average Farm Size 302	
5. Major Crop(s) alfalfa, cotton, grains	6. Farmable Land in Government Jurisdiction Acres: 267,295 % 3.2		7. Amount of Farmland As Defined in FPPA Acres: 190,182 % 3.2		
8. Name Of Land Evaluation System Used N/A	9. Name of Local Site Assessment System N/A		10. Date Land Evaluation Returned by NRCS		

PART III (To be completed by Federal Agency)	Alternative Corridor For Western & Eastern Sections			
	W101EFR	E1		
A. Total Acres To Be Converted Directly	735	135		
B. Total Acres To Be Converted Indirectly, Or To Receive Services				
C. Total Acres In Corridor	735	135		
PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	735	135		
B. Total Acres Statewide And Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	22	22		
PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)	88	88		
PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))	Maximum Points			
1. Area in Nonurban Use	15	9	6	
2. Perimeter in Nonurban Use	10	6	5	
3. Percent Of Corridor Being Farmed	20	12	0	
4. Protection Provided By State And Local Government	20	0	0	
5. Size of Present Farm Unit Compared To Average	10	5	0	
6. Creation Of Nonfarmable Farmland	25	10	0	
7. Availability Of Farm Support Services	5	3	0	
8. On-Farm Investments	20	15	0	
9. Effects Of Conversion On Farm Support Services	25	8	0	
10. Compatibility With Existing Agricultural Use	10	4	4	
TOTAL CORRIDOR ASSESSMENT POINTS	160	72	15	
PART VII (To be completed by Federal Agency)				
Relative Value Of Farmland (From Part V)	100	88	88	
Total Corridor Assessment (From Part VI above or a local site assessment)	160	72	15	
TOTAL POINTS (Total of above 2 lines)	260	160	103	
1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used?	
			YES <input type="checkbox"/> NO <input type="checkbox"/>	
5. Reason For Selection:				

Signature of Person Completing this Part:DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

NRCS-CPA-106 (Reverse)
CORRIDOR - TYPE SITE ASSESSMENT CRITERIA
<p>The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.</p>
<p>(1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?</p> <p>More than 90 percent - 15 points 90 to 20 percent - 14 to 1 point(s) Less than 20 percent - 0 points</p>
<p>(2) How much of the perimeter of the site borders on land in nonurban use?</p> <p>More than 90 percent - 10 points 90 to 20 percent - 9 to 1 point(s) Less than 20 percent - 0 points</p>
<p>(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?</p> <p>More than 90 percent - 20 points 90 to 20 percent - 19 to 1 point(s) Less than 20 percent - 0 points</p>
<p>(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?</p> <p>Site is protected - 20 points Site is not protected - 0 points</p>
<p>(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with \$1,000 or more in sales.)</p> <p>As large or larger - 10 points Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points</p>
<p>(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?</p> <p>Acreage equal to more than 25 percent of acres directly converted by the project - 25 points Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s) Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points</p>
<p>(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?</p> <p>All required services are available - 5 points Some required services are available - 4 to 1 point(s) No required services are available - 0 points</p>
<p>(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?</p> <p>High amount of on-farm investment - 20 points Moderate amount of on-farm investment - 19 to 1 point(s) No on-farm investment - 0 points</p>
<p>(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?</p> <p>Substantial reduction in demand for support services if the site is converted - 25 points Some reduction in demand for support services if the site is converted - 1 to 24 point(s) No significant reduction in demand for support services if the site is converted - 0 points</p>
<p>(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?</p> <p>Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s) Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points</p>

<p>This page intentionally left blank</p>
---



APPENDIX 4-8

SUPPLEMENTAL BIOLOGICAL RESOURCES INFORMATION

Appendix 4-8, *Supplemental Biological Resources Information*, provides background information in support of the Biological Resources section of the Final Environmental Impact Statement. The information includes correspondence related to wildlife in the Study Area, guidelines for Desert Tortoise surveys, and correspondence related to the Rio Salado Oeste project.

Schippers, Susanna

**From:** Moroge, Michael E.  
**Sent:** Friday, March 31, 2006 11:28 AM  
**To:** Allen, Jack  
**Cc:** Watzek, Kurt  
**Subject:** FW: South Mountain Parkway

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

See AGFD comments below!

-----Original Message-----  
From: Alicia Jontz [mailto:AJontz@gf.state.az.us]  
Sent: Friday, March 31, 2006 11:19 AM  
To: Moroge, Michael E.  
Cc: Russ Haughey; Pat Crouch; Ray Schweinsburg; Kelly Wolff  
Subject: South Mountain Parkway

Michael,

On February 17, 2006, Arizona Game and Fish Department biologists met with Phoenix Parks and Recreation Department at South Mountain to evaluate the proposed route for the continuation of Loop 202, the alternative routes and the proposed wildlife crossings. The Department is strongly committed to maintaining connectivity between wildlife habitats within Arizona. Connectivity should be maintained between South Mountain Park and the Estrella Mountains if possible. In the review of the proposed freeway construction and site visit several challenges to maintaining connectivity between the mountain ranges were noted.

In order for any wildlife crossings to be successful, it is essential that undeveloped wildlife corridors be established and maintained between South Mountain Park and the Estrella Mountains. The majority of the land falling between the two mountain ranges belongs to the Gila River Indian Community. This land is currently sparsely developed; however, while on site, we observed areas that appear to be prepared for development. GRIC would need to be involved in this process and agree to establish corridors across their land. Since reservations are essentially a sovereign nation and many tribes face economic challenges, it may be extremely difficult to develop a relationship with the GRIC at this late juncture and have them set aside lands that they may otherwise develop to the benefit of their economy and tribal members. Surface streets, such as 51st Avenue, may also prove to be barriers to successful wildlife movement as traffic increases. If wildlife corridors are established it may be necessary to place crossings on surface streets lying between the two mountain ranges.

While reviewing the proposed freeway design, we noted that at final buildout, the new freeway is scheduled to be a solid roadway including both lanes of travel and HOV lanes, without a break in the median. A freeway of this size would require lengthy wildlife underpasses or tunnels. Research has shown that many species will not use these large crossings, due to reduced visibility inside the crossing and the inability to see the other side of the crossing. A preferred alternative would be to separate the two lanes of travel, at crossings, allowing for a break in the median and natural light to penetrate the wildlife crossing. The wildlife crossings would then be built at two shorter crossings, which wildlife will more readily use. If this is not possible, the use of artificial lighting inside the crossing may be sufficient.

Currently, the new freeway is proposed to be a ground level freeway with several small wildlife crossings such as box culverts and a few larger crossings. Coyotes, javelina, bobcats, foxes desert tortoises, snakes, gila monsters, chuckwalls

are known to occur within South Mountain Park. Both historically and recently, there have been several credible, but unconfirmed sightings of Mountain Lions within South Mountain Park. Mule deer have not be documented in South Mountain Park for some time and are believed to be extirpated from the area; however, it is possible they still occur in small numbers. The smaller box culvert type crossings will work for many of the smaller wildlife species; however, larger crossings such a raised bridge, provide a more effective crossing for all wildlife species. Natural stream beds or washes may be appropriate places to locate the bridges. With either type of crossing it is essential that the bottom of the crossing be a natural substrate, not the bottom of a concrete box or metal tube, and that fencing is used to encourage use of the crossing.

In the plans for the proposed wildlife crossings, a multiple use crossing was outlined that would allow for both wildlife crossing and human recreation such as hiking and horseback riding. We would strongly discourage this type of design for a wildlife crossing. While some human traffic is unavoidable, managing for high use human recreation would discourage wildlife from using the area, making the crossing ineffective for wildlife movements.

Several routes are proposed to connect the 202 to I-10 in the west valley. In order to maintain the quality and integrity of our riparian systems, the 75th Avenue alternative would be preferable to the 91st Avenue alternative.

The Department appreciates the effort and consideration put into this project by ADOT and other participating parties. Wildlife crossings on roadways in Arizona are relatively new and previously concessions were not made for wildlife. In this instance all involved parties may need to consider that due to expanding development in the Phoenix metropolitan area and the lack of long term sustainable corridors between South Mountain and the Estrella Mountains across GRIC land, this project may not be the highest priority for wildlife crossings in the state. While some wildlife crossings may be appropriate, large expenditures of state funds may not be appropriate in this case. Any wildlife that migrates from the Estrella Mountains into South Mountain park will find themselves landlocked by development and may end up in the urban area causing conflicts with human populations. If all barriers to movement can be overcome, a comprehensive study of species occurrence and density within South Mountain Park would be useful to determine the types of crossings that should be build, species use of crossings once built, and long term population dynamics pre and post freeway construction.

Alicia Jontz  
Wildlife Manager Central Phoenix  
623-556-1158

Desert Tortoise Survey Guidelines for Environmental Consultants  
June 2010

The following informal guidelines are intended to aid private consultants surveying for presence of tortoises on development projects in the Sonoran Desert. Following these guidelines will not provide quantified abundance estimates.

- 1) Surveys will be most productive during tortoise activity periods, primarily during the summer monsoon season (July – September) but also in the spring (April) and fall (October). Tortoises are most active in the morning and evening during summer, late morning to afternoon in spring and fall. Results from summer/fall monitoring plots indicate that tortoises are active at temperatures from 20 to 45°C (1cm above ground).
- 2) In the Sonoran Desert, tortoises usually occur on rocky slopes in desertscrub to semidesert grassland, as well as along washes, and extending into creosotebush flats. Burrows typically occur below rocks and boulders and may be irregularly shaped. Soil burrows and those in wash banks may have a 1/2-moon appearance.
- 3) Presence-absence surveys (3 hectare plots) or clearance surveys (100% coverage), depending on project type, are recommended to survey a discrete parcel of land. The number of 3 hectare plots per unit area depends on the desired intensity of the survey.
- 4) Surveyors should record all live tortoises, carcasses, scat, verified burrows (with scat or tortoise inside), and otherwise suitable/potential burrows (empty) and report to the Department.
- 5) Refer to the Department’s “Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects” if handling will be necessary.

CAJ:caj



RECEIVED  
PHOENIX DISTRICT OFFICE

2013 JUL -5 PM 1:58

BUREAU OF LAND MANAGEMENT  
PHOENIX, AZ July 2, 2013

ARIZONA DIVISION

4000 North Central Avenue  
Suite 1500  
Phoenix, Arizona 85012-3500  
Phone: (602) 379-3646  
Fax: (602) 382-8998  
<http://www.fhwa.dot.gov/azdiv/index.htm>

In Reply Refer To:  
NH-202-D(ADY)  
HOP-AZ

NH-202-D(ADY)  
TRACS No. 202L MA 054 H5764 01L  
South Mountain Freeway (Loop 202)  
Request for Rio Salado Oeste status concurrence

Mr. Jim Andersen, Realty Specialist  
Bureau of Land Management  
21605 West 4th Avenue  
Phoenix, Arizona 85027

Dear Mr. Andersen:

This letter summarizes the current information the South Mountain Freeway study team has compiled regarding the Rio Salado Oeste (RSO) project as it relates to the W59 Alternative of the South Mountain Freeway (Loop 202), Interstate 10 (Papago Freeway) to Interstate 10 (Maricopa Freeway), Draft Environmental Impact Statement and Section 4(f) Evaluation. It should be noted that most of the coordination between the Bureau of Land Management (BLM), City of Phoenix, and the U.S. Army Corps of Engineers (USACE) regarding RSO was in relation to the W55 Alternative. In 2009, the W55 Alternative was shifted to 59th Avenue and was renamed the W59 Alternative. The location of the Salt River/RSO crossing has not changed.

The W59 Alternative would cross the Salt River through the eastern half of a 192-acre BLM parcel. The City of Phoenix has a lease on this parcel under provisions of the Recreation and Public Purposes Act (Lease A-31292). The leased land would be included in the proposed RSO project, which is cosponsored by USACE. Although the lease does not include a reference to the proposed freeway, BLM and the City of Phoenix, in an August 2005 letter, indicated they would work together to amend the lease to show the proposed freeway passing through the parcel if the W55 Alternative was identified as the selected alternative in the environmental impact statement (EIS) and Record of Decision.

In July 2010, the City of Phoenix and USACE completed the *Rio Salado Oeste Conceptual Design Documentation Report*. This report incorporates the location of the proposed South Mountain Freeway as it passes through RSO (see enclosure). According to USACE, the RSO project lacks funding to proceed. As a result, the proposed construction of the South Mountain Freeway in this area would precede RSO. Although traffic noise could affect some species, any wildlife that would inhabit the area after habitat improvements would experience the freeway as



2

an existing condition and become habituated to traffic noise. The City of Phoenix and USACE view the South Mountain Freeway crossing as an opportunity to use stormwater runoff from the proposed freeway to "irrigate" the river habitat. The study team will continue to consult with BLM, USACE, and the City of Phoenix to coordinate design efforts to minimize impacts on the proposed uses of this land.

If this summary is accurate and reflects the most currently available information, please sign the concurrence line below. If you or others in your organization have additional information, please provide it to the Federal Highway Administration by July 14, 2013, so that it can be incorporated into the Final EIS. If you have any questions, please contact Rebecca Yedlin, FHWA Environmental Coordinator, at (620) 382-8979 or [Rebecca.Yedlin@dot.gov](mailto:Rebecca.Yedlin@dot.gov).

Thank you for your time and assistance.

Sincerely,

Karla S. Petty  
Division Administrator

Signature for Bureau of Land Management Concurrence  
NH-202-D(ADY)

07/09/2013  
Date

Enclosure

cc:  
Karen Williams, City of Phoenix, 200 West Washington Street, 12th Floor, Phoenix, AZ 85003  
Brian Kenny, U.S. Army Corps of Engineers, 3636 North Central Avenue, Phoenix, AZ 85012  
Ben Spargo, HDR Engineering, Inc., 3200 E. Camelback Rd., Suite 350, Phoenix, AZ 85018  
Scott Stapp, HDR Engineering, Inc., 3200 E. Camelback Rd., Suite 350, Phoenix, AZ 85018









an existing condition and become habituated to traffic noise. The City of Phoenix and USACE view the South Mountain Freeway crossing as an opportunity to use stormwater runoff from the proposed freeway to “irrigate” the river habitat. The study team will continue to consult with BLM, USACE, and the City of Phoenix to coordinate design efforts to minimize impacts on the proposed uses of this land.

If this summary is accurate and reflects the most currently available information, please sign the concurrence line below. If you or others in your organization have additional information, please provide it to the Federal Highway Administration by July 14, 2013, so that it can be incorporated into the Final EIS. If you have any questions, please contact Rebecca Yedlin, FHWA Environmental Coordinator, at (620) 382-8979 or Rebecca.Yedlin@dot.gov.

Thank you for your time and assistance.

Sincerely,

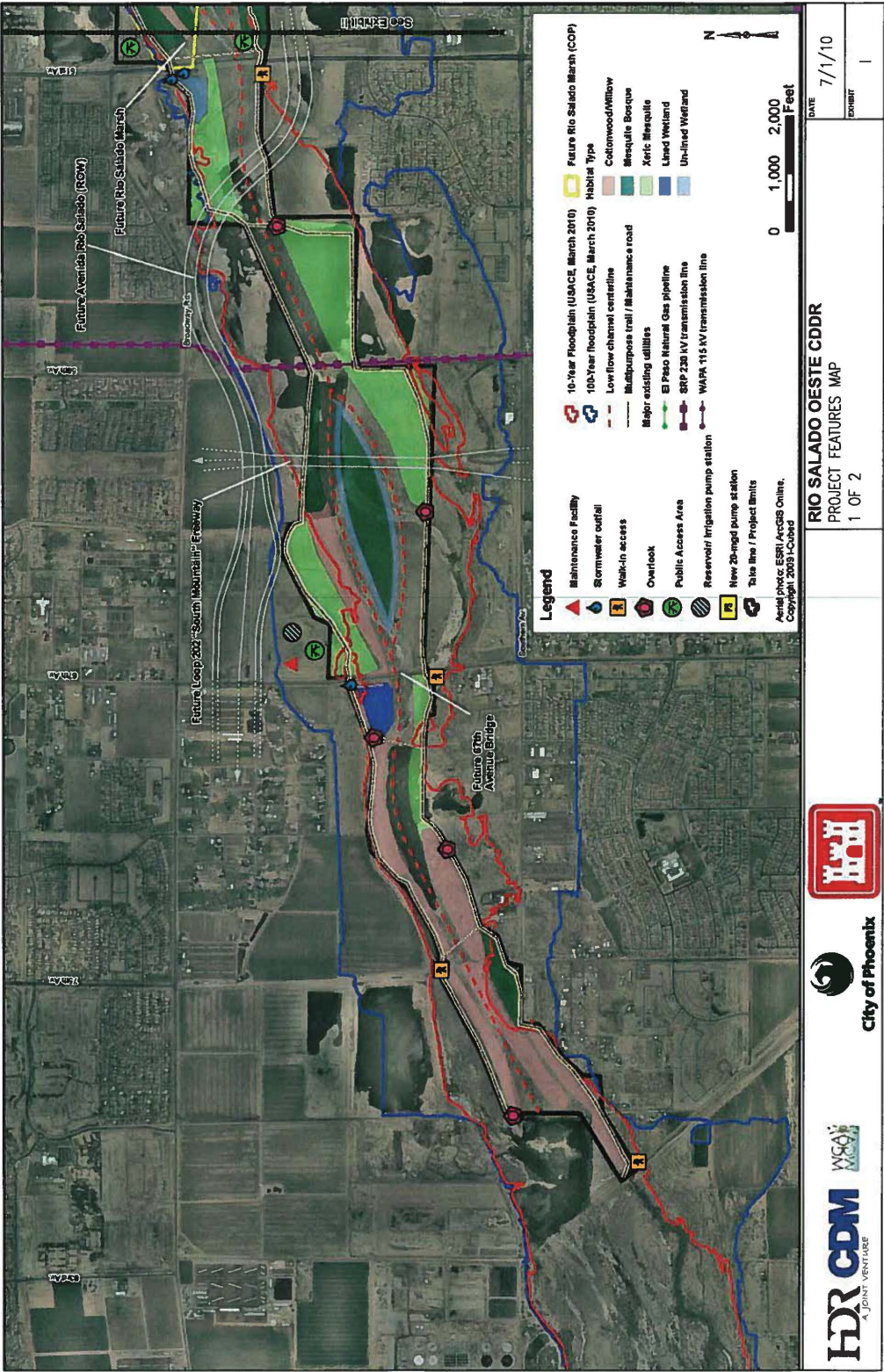
*K. Petty*  
Karla S. Petty  
Division Administrator

*James P. Burke*  
Signature for City of Phoenix Concurrence  
NH-202-D(ADY)

8/8/13  
Date

Enclosure

cc:  
Jim Andersen, Bureau of Land Management, 21605 West 4th Avenue, Phoenix, AZ 85027  
Brian Kenny, U.S. Army Corps of Engineers, 3636 North Central Avenue, Phoenix, AZ 85012  
Ben Spargo, HDR Engineering, Inc., 3200 E. Camelback Rd., Suite 350, Phoenix, AZ 85018  
Scott Stapp, HDR Engineering, Inc., 3200 E. Camelback Rd., Suite 350, Phoenix, AZ 85018







## ARIZONA DIVISION

4000 North Central Avenue  
Suite 1500  
Phoenix, Arizona 85012-3500  
Phone: (602) 378-3646  
Fax: (602) 382-8998  
<http://www.fhwa.dot.gov/azdiv/index.htm>

July 8, 2013

In Reply Refer To:  
NH-202-D(ADY)  
HOP-AZ

NH-202-D(ADY)  
TRACS No. 202L MA 054 H5764 01L  
South Mountain Freeway (Loop 202)  
Request for Rio Salado Oeste status concurrence

Mr. Brian Kenny, Rio Salado Project Manager  
U.S. Army Corps of Engineers  
3636 North Central Avenue  
Phoenix, Arizona 85012

Dear Mr. Kenny:

The study team is updating information within the *South Mountain Freeway (Loop 202), Interstate 10 (Papago Freeway) to Interstate 10 (Maricopa Freeway), Draft Environmental Impact Statement and Section 4(f) Evaluation* (Draft EIS) for the production of the Final EIS for the project. Although the team has had informal telephone communications with you regarding the status of the Rio Salado Oeste (RSO) project, the Federal Highway Administration (FHWA) wishes to formally document the status within the Final EIS.

This letter summarizes the current information the team has compiled regarding the RSO project as it relates to the W59 Alternative of the South Mountain Freeway. It should be noted that much of the prior coordination between the Bureau of Land Management (BLM), City of Phoenix, and the U.S. Army Corps of Engineers (USACE) regarding RSO was in relation to the W55 Alternative. In 2009, the W55 Alternative was shifted to 59th Avenue and was renamed the W59 Alternative. The location of the Salt River/RSO crossing has not changed.

The W59 Alternative would cross the Salt River through the eastern half of a 192-acre BLM parcel. The City of Phoenix has a lease on this parcel under provisions of the Recreation and Public Purposes Act (Lease A-31292). The leased land would be included in the proposed RSO project, which is cosponsored by USACE. Although the lease does not include a reference to the proposed freeway, BLM and the City of Phoenix, in an August 2005 letter, indicated they would work together to amend the lease to show the proposed freeway passing through the parcel if the W55 Alternative was identified as the selected alternative in the EIS and Record of Decision.

2

In July 2010, the City of Phoenix and USACE completed the *Rio Salado Oeste Conceptual Design Documentation Report*. This report incorporates the location of the proposed South Mountain Freeway as it passes through RSO (see enclosure). According to USACE, the RSO project lacks funding to proceed. As a result, the proposed construction of the South Mountain Freeway in this area would precede RSO. Although traffic noise could affect some species, any wildlife that would inhabit the area after habitat improvements would experience the freeway as an existing condition and become habituated to traffic noise. The City of Phoenix and USACE view the South Mountain Freeway crossing as an opportunity to use stormwater runoff from the proposed freeway to "irrigate" the river habitat. The study team will continue to consult with BLM, USACE, and the City of Phoenix to coordinate design efforts to minimize impacts on the proposed uses of this land.

If this summary is accurate and reflects the most currently available information, please sign the concurrence line below. If you or others in your organization have additional information, please provide it to FHWA by July 29, 2013, so that it can be incorporated into the Final EIS. If you have any questions, please contact Rebecca Yedlin, FHWA Environmental Coordinator, at (620) 382-8979 or [Rebecca.Yedlin@dot.gov](mailto:Rebecca.Yedlin@dot.gov).

Thank you for your time and assistance.

Sincerely,

*Karla S. Petty*  
for  
Karla S. Petty  
Division Administrator

*Brian W. Kenny*  
Signature for USACE Concurrence  
NH-202-D(ADY)

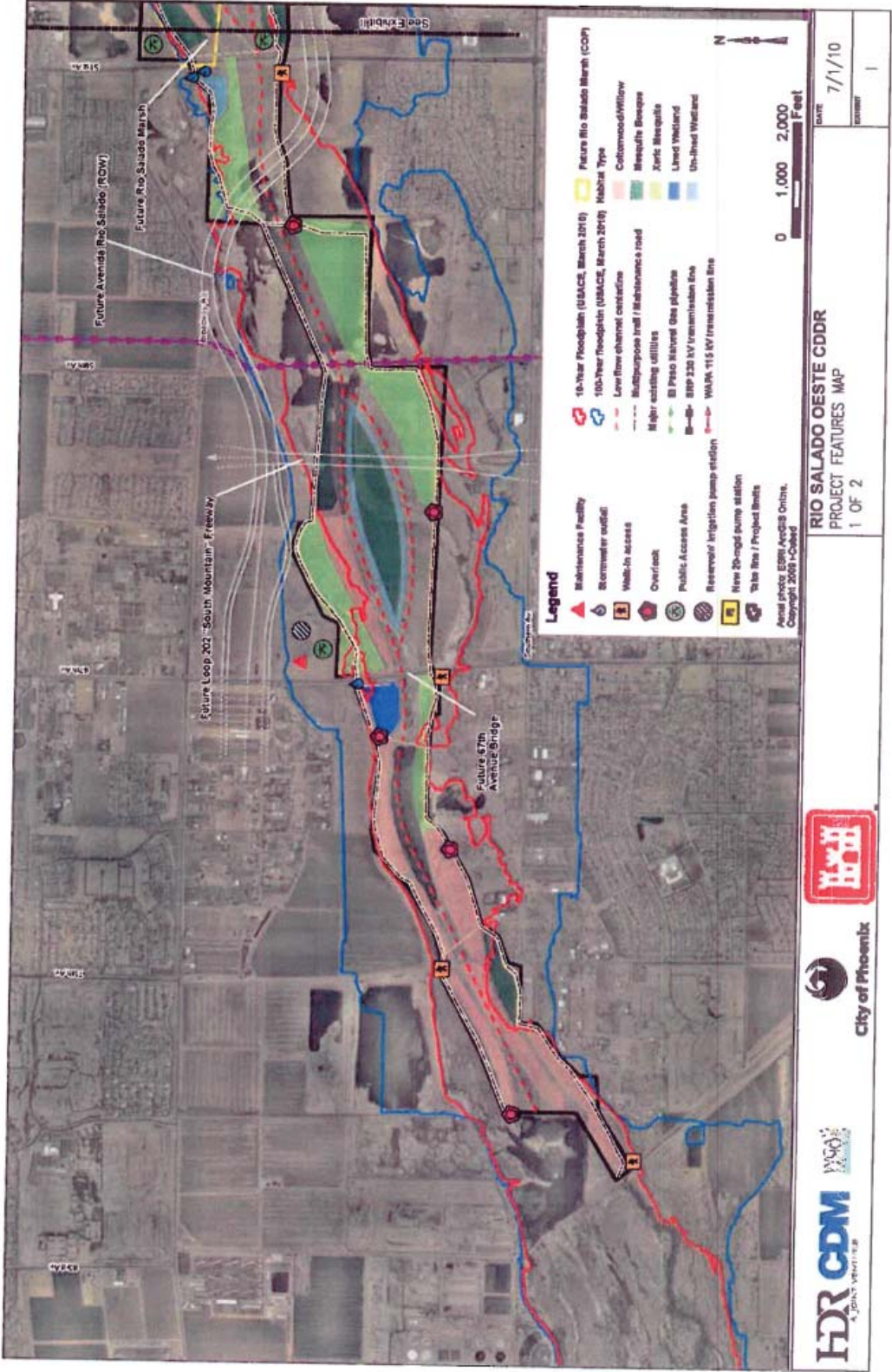
*24 October 2013*  
Date

Enclosure

cc:

Jim Andersen, Bureau of Land Management, 21605 West 4th Avenue, Phoenix, AZ 85027  
Karen Williams, City of Phoenix, 200 West Washington Street, 12th Floor, Phoenix, AZ 85003  
Ben Spargo, HDR Engineering, Inc., 3200 E. Camelback Rd., Suite 350, Phoenix, AZ 85018  
Scott Stapp, HDR Engineering, Inc., 3200 E. Camelback Rd., Suite 350, Phoenix, AZ 85018





This page intentionally left blank