

## Project Level PM Quantitative Hot-Spot Analysis Project of Air Quality Concern Questionnaire

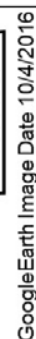
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### Project Setting and Description

The City of Chandler (City), in coordination with the Arizona Department of Transportation (ADOT), and Federal Highway Administration (FHWA) proposes to improve Cooper Road from Alamosa Drive to Riggs Road. The project is located within the City of Chandler, Maricopa County, Arizona.

This project will improve Cooper Road from one lane in each direction (north and southbound) to a minor arterial roadway section using the City's Standard Detail C-205 which will include two vehicular through lanes and one bicycle lane in each direction with sidewalks and a raised, landscaped median. The improvements will include upgrading existing sidewalk and handicap ramps as necessary to meet the City standards and the Americans with Disabilities Act (ADA) guidelines. Roadway improvements will include drainage, signing and striping, lighting, traffic signal upgrades and landscaping and irrigation. This project will establish the ultimate curb return locations at the intersection of Chandler Heights Road for two through lanes with dedicated left and right turn lanes in each direction. The City's utility network will be completed within the roadway improvement limits. These improvements will include new water lines, sewer lines, reclaimed water lines and a complete storm drain system. This project is primarily an infill project that completes the improvements within the corridor. Some areas within the corridor have been improved by adjacent developers, and there are other areas that have not yet been improved.

This project is listed in the MAG FY 2018-2022 Transportation Improvement Program (TIP), and is in the State of Arizona's current five-year (2017-2021) State Transportation Improvement Program (STIP). It is located in the Maricopa County PM10 nonattainment area. The location of the project is shown in Figure 1.



**Figure 1. Project Location Map**

## Project Assessment

The following questionnaire is used to compare the proposed project to a list of project types in 40 CFR 93.123(b) requiring a quantitative analysis of local particulate emissions (Hot-spots) in non-attainment or maintenance areas, which include:

- i) New highway projects that have a significant number of diesel vehicles, and expanded highway projects that have a significant increase in the number of diesel vehicles;
- ii) Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of an increase in traffic volumes from a significant number of diesel vehicles related to the project;
- iii) New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
- iv) Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and
- v) Projects in or affecting locations, areas, or categories of sites which are identified in the PM<sub>10</sub> or PM<sub>2.5</sub> applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

If the project matches one of the listed project types in 40 CFR 123(b)(1) above, it is considered a project of local air quality concern and the hot-spot demonstration must be based on quantitative analysis methods in accordance to 40 CFR 93.116(a) and the consultation requirements of 40 CFR 93.105(c)(1)(i). If the project does not require a PM hot-spot analysis, a qualitative assessment will be developed that demonstrates that the project will not contribute to any new localized violations, increase the frequency or severity of any existing violations, or delay the timely attainment of any NAAQS or any required emission reductions or milestones in any nonattainment or maintenance area.

On March 10, 2006, EPA published *PM<sub>2.5</sub> and PM<sub>10</sub> Hot-Spot Analyses in Project-Level Transportation Conformity Determinations for the New PM<sub>2.5</sub> and Existing PM<sub>10</sub> National Ambient Air Quality Standards; Final Rule* describing the types of projects that would be considered a project of air quality concern and that require a hot-spot analysis (71 FR 12468-12511). Specifically on page 12491, EPA provides the following clarification: “Some examples of *projects of air quality concern* that would be covered by § 93.123(b)(1)(i) and (ii) are: A project on a new highway or expressway that serves a significant volume of diesel truck traffic, such as facilities with greater than 125,000 annual average daily traffic (AADT) and 8% or more of such AADT is diesel truck traffic;” ..” Expansion of an existing highway or other facility that affects a congested intersection (operated at Level-of-Service D, E, or F) that has a significant increase in the number of diesel trucks;” These examples will be used as the baseline for determining if the project is a project of air quality concern.



### New Highway Capacity

Is this a New highway project that has a significant number of diesel vehicles?

*Example: total traffic volumes  $\geq 125,000$  annual average daily traffic (AADT) and truck volumes  $\geq 10,000$  diesel trucks per day (8% of total traffic).*

NO – This is not a new highway project that has a significant number of diesel vehicles.

### Expanded Highway Capacity

Is this an expanded highway project that has a significant increase in the number of diesel vehicles? *Example: the build scenario of the expanded highway or expressway causes a significant increase in the number of diesel trucks compared with the no-build scenario, truck volumes > 8% of the total traffic.*

NO – This is not an expanded highway project that would have a significant increase in the number of diesel vehicles. Table 1 summarizes the average daily traffic and truck traffic data which was provided by MAG. This project will add an additional 127 to 151 trucks.

**Table 1. Traffic Projections for Cooper Road**

	2018	2040	2040	Difference
	Base	No-Build	Build	
Riggs Road to Chandler Height Road				
ADT	9,862	10,201	16,735	6,534
Truck ADT	168	184	335	151
Truck %	1.7%	1.8%	2.0%	0.2%
Chandler Heights Road to Alamosa Drive				
ADT	12,707	14,484	19,872	5,388
Truck ADT	241	290	417	127
Truck %	1.9%	2.0%	2.1%	0.1%

### Projects with Congested Intersections

Is this a project that affects a congested intersection (LOS D or greater) that has a significant number of diesel trucks, OR will change LOS to D or greater because of increase traffic volumes for significant number of diesel trucks related to the project?

NO – As shown in Table 2, the 2040 Build condition for this project will not affect a congested intersection (LOS D or greater) that has a significant number of diesel trucks, nor will this project change the LOS to D or greater at any intersection because of a significant increase in diesel truck traffic volumes. This project improves the LOS at Chandler Heights Road from LOS D to C.

**Table 2. LOS for Cooper Road Intersections**

	2018		2040		2040	
	Base		No-Build		Build	
	AM	PM	AM	PM	AM	PM
<b>LOS at Riggs Road</b>	C	B	C	B	C	B
<b>LOS at Chandler Heights Road</b>	C	B	D	D	C	C

### **New Bus and Rail Terminals**

Does the project involve construction of a new bus or intermodal terminal that accommodates a significant number of diesel vehicles?

NO - This project does not involve new bus or rail terminals; therefore, project types (iii) and (iv) are not addressed in the project assessment.

### **Expanded Bus and Rail Terminals**

Does the project involve an existing bus or intermodal terminal that has a large vehicle fleet where the number of diesel buses (or trains) increases by 50% or more, as measured by arrivals?

NO - This project does not involve new bus or rail terminals; therefore, project types (iii) and (iv) are not addressed in the project assessment.

### **Projects Affecting PM Sites of Violation or Possible Violation**

Does the project affect locations, areas or categories of sites that are identified in the PM<sub>10</sub> or PM<sub>2.5</sub> applicable plan or implementation plan submissions, as appropriate, as sites of violation or potential violation?

NO - The PM<sub>10</sub> State Implementation Plans (SIP) did not identify any specific sites or potential sites of violation. Therefore, no specific sites or potential sites of violation are identified.

### **POAQC Determination**

The proposed project complies with and will not interfere with the implementation of any control measures included in the ADOT 2017-2021 Statewide Transportation Improvement Program (STIP) or the MAG 2018-2022 Transportation Improvement Program (TIP). The project is not anticipated to create LOS D conditions or worsen such conditions at intersections with a significant number of diesel vehicles, and the project would not significantly increase the number of diesel vehicles in the 2040 design year.

Therefore, ADOT is presenting this project for interagency consultation in accordance with 40 CFR 93.105 as a Project that is NOT of Air Quality Concern and thereby will not require a PM hot-spot analysis.

### **Interagency Consultation Results**

On October 15, 2018 ADOT provided a copy of this questionnaire, to the following consultation parties, the Environmental Protection Agency (EPA), FHWA, MAG, ADEQ and the Maricopa County Air Quality Department (MCAQD) as the local air agency in Maricopa County. There were no objections to the project determination and on October 30, 2018 ADOT concluded interagency consultation by notifying interested parties that this project will proceed as a project that does not require a quantitative PM10 hot-spot analysis under 40CFR93.123(b).

## Beverly Chenausky

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**From:** Beverly Chenausky  
**Sent:** Tuesday, October 30, 2018 9:42 AM  
**To:** 'Lindy Bauer'; 'Jerry Wamsley'; 'Johanna Kuspert - AQDX'; 'ADEQ Conformity'  
**Cc:** 'Clifton Meek'; 'Karina O'Conner'; ADOTAirNoise; Michelle Ogburn; Eric Prosnier; 'Dean Giles'  
**Subject:** RE: Interagency Consultation Cooper Rd: Alamosa Drive to Riggs Rd MA CHN SZ181 01C

As there are no objections to the project determination presented, interagency consultation is complete with the project identified as a project that does not require a quantitative hot-spot analysis as listed under 40 CFR 93.123(b).

Thank you,  
Beverly

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**From:** Beverly Chenausky  
**Sent:** Monday, October 15, 2018 10:23 AM  
**To:** 'Lindy Bauer'; 'Jerry Wamsley'; 'Johanna Kuspert - AQDX'; 'ADEQ Conformity'  
**Cc:** 'Clifton Meek'; 'Karina O'Conner'; ADOTAirNoise; Michelle Ogburn; Eric Prosnier; 'Dean Giles'  
**Subject:** RE: Interagency Consultation Cooper Rd: Alamosa Drive to Riggs Rd MA CHN SZ181 01C

[With attachment](#)

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**From:** Beverly Chenausky  
**Sent:** Monday, October 15, 2018 10:21 AM  
**To:** 'Lindy Bauer'; 'Jerry Wamsley'; 'Johanna Kuspert - AQDX'; 'ADEQ Conformity'  
**Cc:** 'Clifton Meek'; 'Karina O'Conner'; ADOTAirNoise; Michelle Ogburn; Eric Prosnier; 'Dean Giles'  
**Subject:** Interagency Consultation Cooper Rd: Alamosa Drive to Riggs Rd MA CHN SZ181 01C

To Interested Parties:

ADOT is presenting the following local project, **Cooper Rd: Alamosa Drive to Riggs Road**, for interagency consultation per 40 CFR 93.105 as a potential project that is not a project of Air Quality Concern and thereby will not require a PM10 hot-spot analysis. If through interagency consultation it is determined that this project will not require a hot-spot analysis, other conformity provisions apply and will be addressed in the air quality section of the environmental clearance. ADOT is requesting responses to the attached questionnaire within **10 business days**; a non-response will be interpreted as concurrence that the project is not a project of air quality concern and does not require a hot-spot analysis. If any consulted party believes this project should be treated as a project of air quality concern that requires a Quantitative PM hot-spot analysis, please document the appropriate section under 40 CFR 93.123 (b) that applies to the project and describe why the project should be treated as a project of air quality concern.

**Beverly T. Chenausky**  
**Air & Noise Program Manager**  
MD EM02, Room 41  
1611 W. Jackson St.  
Phoenix, AZ 85007  
602.712.6269  
azdot.gov



## Project Level CO Hot-Spot Analysis Questionnaire

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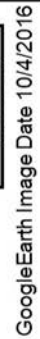
### Project Setting and Description

The City of Chandler (City), in coordination with the Arizona Department of Transportation (ADOT), and Federal Highway Administration (FHWA) proposes to improve Cooper Road from Alamosa Drive to Riggs Road. The project is located within the City of Chandler, Maricopa County, Arizona.

This project will improve Cooper Road from one lane in each direction (north and southbound) to a minor arterial roadway section using the City's Standard Detail C-205 which will include two vehicular through lanes and one bicycle lane in each direction with sidewalks and a raised, landscaped median. The improvements will include upgrading existing sidewalk and handicap ramps as necessary to meet the City standards and the Americans with Disabilities Act (ADA) guidelines. Roadway improvements will include drainage, signing and striping, lighting, traffic signal upgrades and landscaping and irrigation. This project will establish the ultimate curb return locations at the intersection of Chandler Heights Road for two through lanes with dedicated left and right turn lanes in each direction. The City's utility network will be completed within the roadway improvement limits. These improvements will include new water lines, sewer lines, reclaimed water lines and a complete storm drain system. This project is primarily an infill project that completes the improvements within the corridor. Some areas within the corridor have been improved by adjacent developers, and there are other areas that have not yet been improved.

This project is listed in the MAG FY 2018-2022 Transportation Improvement Program (TIP), and is in the State of Arizona's current five-year (2017-2021) State Transportation Improvement Program (STIP). It is located in the Maricopa County CO Maintenance Area. The location of the project is shown in Figure 1.





## Project Assessment – Part A

The following questionnaire is used to compare the proposed project to a list of project types in 40 CFR 93.123(a) requiring a quantitative analysis of local CO emissions (Hot-spots) in non-attainment or maintenance areas, which include:

- i) Projects in or affecting locations, areas, or categories of sites which are identified in the applicable implementation plan as sites of violation or possible violation;
- ii) Projects affecting intersections that are at Level-of-Service D, E, or F, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes related to the project;
- iii) Any project affecting one or more of the top three intersections in the nonattainment or maintenance area with highest traffic volumes, as identified in the applicable implementation plan; and
- iv) Any project affecting one or more of the top three intersections in the nonattainment or maintenance area with the worst level of service, as identified in the applicable implementation plan.

If the project matches one of the listed project types in 40 CFR 93.123(a)(1) above, it is considered a project of local air quality concern and the hot-spot demonstration must be based on quantitative analysis methods in accordance to 40 CFR 93.116(a) and the consultation requirements of 40 CFR 93.105(c)(1)(i).

### Projects Affecting CO Sites of Violation or Possible Violation

Does the project affect locations, areas or categories of sites that are identified in the CO applicable plan or implementation plan submissions, as appropriate, as sites of violation or potential violation?

NO – The MAG 2013 Carbon Monoxide Maintenance Plan for the Maricopa County Area, March 2013 does not identify sites or categories of potential violation for CO..

### Projects with Congested Intersections

Is this a project that affects a congested intersection (LOS D or greater) will change LOS to D or greater because of increased traffic volumes related to the project?

NO – As shown in *Table 1*, the 2040 Build condition for this project will not affect overall congested intersection (LOS D or greater), the current LOS is C or better the and this project this project improves the LOS at Chandler Heights Road from LOS D to C.

**Table 1. LOS for Cooper Road Intersections**

	2018		2040		2040	
	Base		No-Build		Build	
	AM	PM	AM	PM	AM	PM
<b>LOS at Riggs Road</b>	C	B	C	B	C	B
<b>LOS at Chandler Heights Road</b>	C	B	D	D	C	C

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### **Projects Affecting Intersections with Highest Traffic Volumes**

Does the project affect one or more of the top three intersections in the CO maintenance area with highest traffic volumes identified in the CO applicable implementation plan?

NO - There are 2 major intersections within the project limits; Cooper Road & Chandler Heights Road and Cooper Road & Riggs Road. *The MAG 2013 Carbon Monoxide Maintenance Plan for the Maricopa County Area, March 2013* states that the top 3 intersections with the highest traffic volumes or the most congestion are:

- 16th Street & Camelback Road
- Priest Drive & Southern Avenue
- 107th Avenue & Grand Avenue.

### **Projects Affecting Intersections with the Worst Level of Services**

Does the project affect one or more of the top three intersections in the CO maintenance area with the worst level of services identified in the CO applicable implementation plan?

NO - There are 2 major intersections within the project limits; Cooper Road & Chandler Heights Road and Cooper Road & Riggs Road. *The MAG 2013 Carbon Monoxide Maintenance Plan for the Maricopa County Area, March 2013* states that the top 3 intersections with worst LOS are:

- 7th Avenue & Van Buren Street
- Thomas Road & Gilbert Road
- Germann Road & Gilbert Avenue

### **Project Assessment – Part B**

The following questionnaire is used to compare the proposed project to a list of the project types in 40 CFR 93.126 and 40 CFR 93.128 which are exempt from the requirement to determine conformity:

#### **Exempt Projects in the CO maintenance Area**

Is this one of the exempt projects listed – Safety, Mass Transit, Air Quality and Others in Table 2 of 40 CFR 93.126 or a traffic signal synchronization project described in 40 CFR 93.128?

NO - This project is not exempt under Table 2 of 40 CFR 93.126 and is not a traffic signal synchronization project as described in 40 CFR 93.128; therefore, this project is not exempt.

### **Hot-Spot Determination**

The Cooper Road Improvements project is not anticipated to affect any CO sites of violation or possible sites of violation or create LOS D conditions or worsen such conditions at intersections, and the project would not affect one or more of the top three intersections with the highest traffic volumes or worst LOS.

Decide which type of hot-spot analysis is required for the project by choosing a category below.



☐ **If answered “Yes” to any of the questions in the Project Assessment – Part A and “No” to the question in the Project Assessment – Part B,**

- A quantitative CO hot-spot analysis is required under 40 CFR 93.123(a)(1).
- The applicable air quality models, data bases, and other requirements specified in 40 CFR part 51, Appendix W (Guideline on Air Quality Models) should be completed and circulated through interagency consultation for review and comments for 10 days prior to commencing any modeling activities.
- Check if the project fits the condition of the CO Categorical Hot-Spot Finding.

☒ **If answered “No” to all of the questions in the Project Assessment – Part A and “No” to the question in the Project Assessment – Part B,**

- A qualitative CO hot-spot analysis is required under 40 CFR 93.123(a)(2).
- The demonstrations required by 40 CFR 93.116 Localized CO, PM10, and PM2.5 violations (hot-spots) may be based on either: (i) Quantitative methods that represent reasonable and common professional practice; or (ii) A qualitative consideration of local factors, if this can provide a clear demonstration that the requirements of 40 CFR 93.116 are met.

☐ **Regardless of the questions in the Project Assessment – Part A, if “Yes” to the question in the Project Assessment – Part B,**

- No CO hot-spot analysis is required.

In the January 24, 2008, Transportation Conformity Rule Amendments, EPA included a provision at 40 CFR 93.123(a)(3) to allow the U.S. DOT, in consultation with EPA, to make categorical hot-spot findings in CO nonattainment and maintenance areas if appropriate modeling showed that a type of highway or transit project would not cause or contribute to a new or worsened air quality violation of the CO NAAQS or delay timely attainment of the NAAQS or required interim milestone(s), as required under 40 CFR 93.116(a).

**Projects Fitting the Condition of the CO Categorical Hot-Spot Finding**

Do the project’s parameters fall within the acceptable range of modeled parameters (Use the table in the appendix, “Table 1: Project Parameters and Acceptable Ranges for CO Categorical Hot-Spot Finding” or enter the project information into FHWA’s web based tool: [https://www.fhwa.dot.gov/environment/air\\_quality/conformity/policy\\_and\\_guidance/cmc\\_f\\_2017/tool.cfm](https://www.fhwa.dot.gov/environment/air_quality/conformity/policy_and_guidance/cmc_f_2017/tool.cfm))?

NO – The project doesn’t require a quantitative CO analysis and the use of the CO Hot-Spot finding is not applicable to this project, as there is not a significant number of trucks required to rely on the CO finding the maximum percent trucks is 2% for this project, thereby a qualitative discussion will be included in the environmental clearance document.

## Appendix

Table 1: Project Parameters and Acceptable Ranges for CO Categorical Hot-Spot Finding for Urban Intersection

Parameter	Acceptable Range
Analysis year	Greater than or equal to 2017
Angle of cross streets for intersection (degrees)	90
Maximum grade for the intersection (%)	Less than or equal to 2
Maximum grade on cross street for the intersection (%)	0
Number of through lanes	Less than or equal to 4
Number of left turn lanes	Less than or equal to 2
Lane width (ft)	12
Median width (ft)	0
Peak hour average approach speed (mph)	Greater than or equal to 25
Peak hour approach volume (vph)	Less than or equal to 2640
Peak hour Level of Service	A through E
Ambient temperature (°F)	Greater than or equal to -10
Heavy-duty trucks (%)	Greater than or equal to 5
1-hour background CO concentrations (ppm)	Less than or equal to 32.6
8-hour background CO concentrations (ppm)	Less than or equal to 7.3
Persistence factor	Less than or equal to 0.7

Table 2. Traffic Projections for Cooper Road

	2018	2040	2040
	Base	No-Build	Build
<b>Riggs Road to Chandler Height Road</b>			
ADT	9,862	10,201	16,735
Truck ADT	168	184	335
Truck %	1.7%	1.8%	2.0%
<b>Chandler Heights Road to Alamosa Drive</b>			
ADT	12,707	14,484	19,872
Truck ADT	241	290	417
Truck %	1.9%	2.0%	2.1%



## FHWA NEPA CLEARANCE (CONFORMITY DETERMINATION)

**ARIZONA DEPARTMENT OF TRANSPORTATION**

Environmental Planning  
1611 West Jackson Street  
Phoenix, Arizona 85007

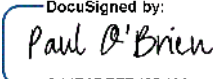
**Categorical Exclusion**

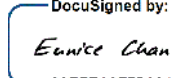
**For**

Cooper Rd: Alamosa Drive to Riggs Road

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Approved by:  DocuSigned by:  
C44E3DEFE42B423... Date: 2/1/2019  
PAUL O'BRIEN, P.E.  
Administrator  
ADOT Environmental Planning

Approved by:  DocuSigned by:  
32EFEA9F7B23407... Date: 2/5/2019  
KARLA S. PETTY  
Arizona Division Administrator  
Federal Highway Administration

This Individual Categorical Exclusion has been prepared in accordance with provisions and requirements of Chapter 1, Title 23 USC; 23 CFR 771.117(d) relating to the implementation of the National Environmental Policy Act of 1969; and 23 CFR 774 relating to Section 4(f) of the Department of Transportation Act of 1966.