

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

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### Project Setting and Description

The Arizona Department of Transportation (ADOT), in association with the Maricopa Association of Governments (MAG), is planning a TI reconstruction project at the Interstate 17 (I-17)/Indian School Road traffic interchange (TI). The Indian School Road TI is located at milepost (MP) 202.93 on I-17. The project would occur on Indian School Road between 23<sup>rd</sup> Avenue and 27<sup>th</sup> Avenue within the City of Phoenix, Maricopa County, Arizona (See Figure 1).

Indian School Road is a major east-west arterial across I-17 in central Phoenix. According to MAG's I-10/I-17 Corridor Master Plan ("Spine Study"), the Indian School Road TI has the second-highest east-west demand in the I-17 corridor. The study identified a need to upgrade the Indian School Road TI to a high-capacity service interchange, with an emphasis on east-to-west through volumes on Indian School Road. The I-17/Indian School Road TI was identified in the Spine Study as warranting capacity improvements since congestion is predicted to reach unacceptable levels by 2040. The project is included in the MAG Transportation Improvement Program ([TIP](#)), as approved on February 27, 2019.

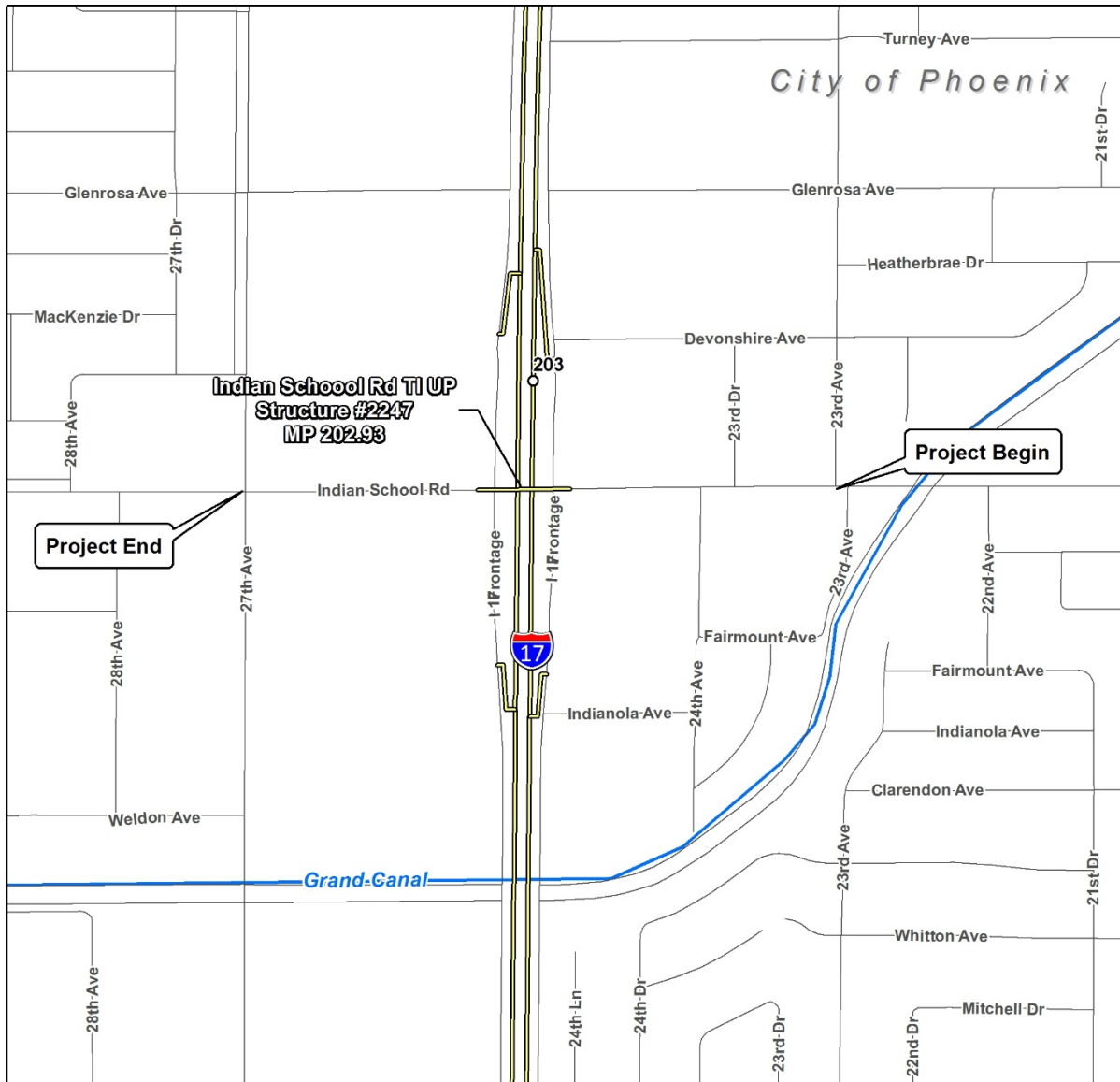
The purpose of this project is to add a third level of roadway over the I-17/Indian School Road TI to accommodate eastbound and westbound through-traffic on Indian School Road across the interchange. The existing Indian School Road and ramp intersections will remain on the second level and will continue to be used for access to I-17, as well as adjacent businesses and residences. I-17 is on the first level. East-west through-traffic would be able to traverse the TI without stopping at traffic signals at the I-17 on and off-ramps.

The project is currently in the design concept phase. The scope of work identified at this stage includes:

- Construction of a third level flyover bridge over the I-17/Indian School Road TI to accommodate two lanes of traffic in each direction
- Construction of two new detached single-span pedestrian bridges north and south of the existing Indian School Road bridge over I-17
- Conversion of the existing pedestrian walkways along Indian School Road into vehicular travel lanes and shoulders
- Intersection modifications at 23<sup>rd</sup> Avenue and 27<sup>th</sup> Avenue to accommodate the addition of the flyover and predicted traffic volumes
- New lighting along the new flyover
- Installation of signs

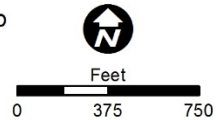
A design concept report is anticipated to be finalized in Spring 2019, with final design in 2020. Construction of the selected alternative would begin in 2021. A public meeting will be scheduled to provide project details and engage the public during the final design stage.

Figure 1. Project Vicinity Map



Source: ADOT ATIS (2013); ASLD ALRIS (2010)

- Interstate
- Local Roads
- Mileposts
- Perennial Drainage
- Private Land Ownership



Map Disclaimer: This map is intended for general siting purposes only.

## 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 projects that have 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 expand highway capacity project that have a significant increase in the number of diesel vehicles. The build scenario would not cause a significant increase in the number of diesel truck compared with the no-build scenario, see Table 1 below. Compared to no-build scenario, the truck AADT on Indian School Rd segments would change slightly between -76 and 240 vehicles per day. Most of the I-17/Indian School Rd TI ramps would have less truck with truck AADT reduction between 30 and 132 vehicles per day in build scenario. The truck volumes would be greater than 8% of the total traffic.

Table 1. AADT & Truck AADT on Indian School Rd and I-17 Ramps

| Indian School Rd Segment                     | 2040 No Build AADT | 2040 No Build Truck AADT | 2040 No Build Truck% | 2040 Build AADT | 2040 Build Truck AADT | 2040 Build Truck% |
|--|--------------------|--------------------------|----------------------|-----------------|-----------------------|-------------------|
| 31 <sup>st</sup> Ave to 27 <sup>th</sup> Ave | 45,821             | 3,174                    | 7%                   | 46,138          | 3,098                 | 7%                |
| 27 <sup>th</sup> Ave to I-17 SB Off Ramp     | 52,010             | 3,310                    | 6%                   | 60,472          | 3,541                 | 6%                |
| I-17 SB Off Ramp to NB On Ramp               | 57,377             | 2,695                    | 5%                   | 64,239          | 2,935                 | 5%                |
| I-17 NB On Ramp to 23 <sup>rd</sup> Ave      | 56,503             | 2,256                    | 4%                   | 63,745          | 2,481                 | 4%                |
| 23 <sup>rd</sup> Ave to 19 <sup>th</sup> Ave | 53,742             | 2,168                    | 4%                   | 57,614          | 2,358                 | 4%                |
| SB I-17 Off Ramp                             | 16,151             | 763                      | 5%                   | 15,139          | 733                   | 5%                |
| SB I-17 On Ramp                              | 16,795             | 1,294                    | 8%                   | 15,622          | 1,203                 | 8%                |
| NB I-17 Off Ramp                             | 13,765             | 887                      | 6%                   | 12,512          | 755                   | 6%                |
| NB I-17 On Ramp                              | 14,493             | 698                      | 5%                   | 13,717          | 701                   | 5%                |

Source: Final Preliminary Traffic Report, February 2019 and associated MAG traffic demand model  
 Truck AADT includes AADT from medium truck and heavy truck

### 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. Table 2 on next page shows LOS summary of the intersections with Indian School Road. Although some of the intersections with Indian School Road would result in LOS D or worse in the no-build and build scenarios, the intersections are not deemed to have a significant number of diesel trucks or increased traffic volumes for significant number of diesel trucks related to the project, as discussed in Table 1.

Table 2. Intersections LOS Summary

| No. | Intersection with Indian School Road | Peak Hour | 2040 Build | 2040 No-Build | 2018 Existing |
|-----|--------------------------------------|-----------|------------|---------------|---------------|
| 4   | SB I-17 Ramps                        | AM        | D          | F             | F             |
|     |                                      | PM        | B          | D             | D             |
| 5   | NB I-17 Ramps                        | AM        | D          | D             | D             |
|     |                                      | PM        | C          | F             | F             |
| 1   | 31 <sup>st</sup> Avenue              | AM        | D          | D             | E             |
|     |                                      | PM        | D          | C             | D             |
| 2   | 27 <sup>th</sup> Avenue              | AM        | F          | E             | E             |
|     |                                      | PM        | F          | F             | F             |
| 7   | 23 <sup>rd</sup> Avenue              | AM        | C          | C             | C             |
|     |                                      | PM        | C          | C             | B             |
| 8   | 19 <sup>th</sup> Avenue              | AM        | F          | F             | D             |
|     |                                      | PM        | F          | F             | E             |

Source: Final Preliminary Traffic Report, February 2019

### 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 construct any new bus or rail terminals.

### 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 expand any bus or rail terminals.

### 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 project location is not listed in MAG's 2012 SIP as a site of violation or potential violation.

### POAQC Determination

The I-17, Indian School Rd Traffic Interchange project does not require a quantitative hot-spot analysis for PM<sub>10</sub> because this project does not match one of the listed project types above, and it is not considered a project of local air quality concern for PM<sub>10</sub>.

### **Interagency Consultation Results**

On April 1, 2019 ADOT provided a copy of this questionnaire, to the following consultation parties, EPA, MAG, Arizona Department of Environmental Quality (ADEQ), and Maricopa County Air Quality Department as the local air agencies in Maricopa County. There were no objections to the project determination and on April 16, 2019 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 40CFR 93.123(b).



Beverly Chenausky <bchenausky@azdot.gov>

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## Re: Interagency Consultation: I-17, Indian School Road Traffic Interchange

1 message

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**Beverly Chenausky** <bchenausky@azdot.gov>

Tue, Apr 16, 2019 at 10:17 AM

To: Lindy Bauer <lbauer@azmag.gov>, Transportationconformity <transportationconformity@azdeq.gov>, Johanna Kuspert - AQDX <JKuspert@mail.maricopa.gov>, "Wamsley.Jerry" <wamsley.jerry@epa.gov>

Cc: Clifton Meek <mEEK.clifton@epa.gov>, Dean Giles <dgiles@azmag.gov>, ADOTAirNoise - ADOT <adotairnoise@azdot.gov>, Karina O'Conner <oconnor.karina@epa.gov>, Katie Rodriguez <krodriguez@azdot.gov>, "Adrian N. Leon" <aleon2@azdot.gov>

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

On Mon, Apr 1, 2019 at 10:47 AM Beverly Chenausky <bchenausky@azdot.gov> wrote:

To Interested Parties:

ADOT is presenting the following project, **I-17, Indian School Road Traffic Interchange**, 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.

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