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**Appendix 3E**  
POAQC Evaluation

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## **Project of Air Quality Concern Evaluation**

### **I-15 Environmental Impact Statement Farmington to Salt Lake City**

Lead agency:  
Utah Department of Transportation

**July 26, 2023**

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## Abbreviations

AADT	annual average daily traffic
CFR	Code of Federal Regulations
CO	carbon monoxide
EIS	Environmental Impact Statement
EPA	United States Environmental Protection Agency
FHWA	Federal Highway Administration
FR	Federal Register
GP	general purpose (lane)
HOT	high-occupancy/toll (lane)
I-15	Interstate 15
I-215	Interstate 215
I-80	Interstate 80
LOS	level of service
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO <sub>x</sub>	nitrogen oxides
O <sub>3</sub>	ozone
Pb	lead
PM <sub>10</sub>	particulate matter 10 microns in diameter or smaller
PM <sub>2.5</sub>	particulate matter 2.5 microns in diameter or smaller
RTP	<i>Wasatch Front Regional Transportation Plan</i>
SIP	state implementation plan
SO <sub>2</sub>	sulfur dioxide
TIP	Transportation Improvement Program
U.S. 89	U.S. Highway 89
USC	United States Code
UDOT	Utah Department of Transportation
WFRC	Wasatch Front Regional Council

## 1.0 Introduction

The Utah Department of Transportation (UDOT) is preparing an Environmental Impact Statement (EIS) for the Interstate 15 (I-15) Farmington to Salt Lake City Project according to the provisions of the National Environmental Policy Act (NEPA) and other laws, regulations, and guidelines of the Federal Highway Administration (FHWA). UDOT is the project sponsor and lead agency for the project and will be responsible for preparing the I-15 EIS. The environmental review, consultation, and other actions required by applicable federal environmental laws for this action are being, or have been, carried out by UDOT pursuant to 23 United States Code (USC) Section 327 and a Memorandum of Understanding dated May 26, 2022, and executed by FHWA and UDOT.

### What is the purpose of this report?

This report evaluates whether the I-15 Farmington to Salt Lake City Project is a project of air quality concern.

The proposed project study area for the I-15 EIS extends on I-15 from the U.S. Highway 89 (U.S. 89)/ Legacy Parkway/Park Lane interchange (I-15 milepost 325) in Farmington to the Interstate 80 (I-80) West/ 400 South interchange (I-15 milepost 308) in Salt Lake City (Figure 1).

The discussion below provides more information regarding how UDOT determined the termini of the project study area with regard to each major road in the area.

**Northern terminus.** The U.S. 89/Legacy Parkway/Park Lane interchange in Farmington has high-traffic-volume connections to all of these freeways or major arterials and is the logical northern terminus for this project. North of this interchange, traffic volumes measurably decrease on I-15, though congestion issues are present.

**Southern terminus.** 400 South was determined to be the logical southern terminus for this project because traffic measurably decreases going to or coming from downtown Salt Lake City at 400 South and because there is a major I-15/I-80/State Route 201 system-to-system interchange as well as collector-distributor systems south of 400 South. The exit from northbound I-15 to westbound I-80, a major system-to-system interchange, is also located just south of 400 South. I-80 westbound provides access to the Salt Lake City International Airport, the industrial areas surrounding the airport, and an additional system-to-system connection with Interstate 215 (I-215) and Bangor Highway.

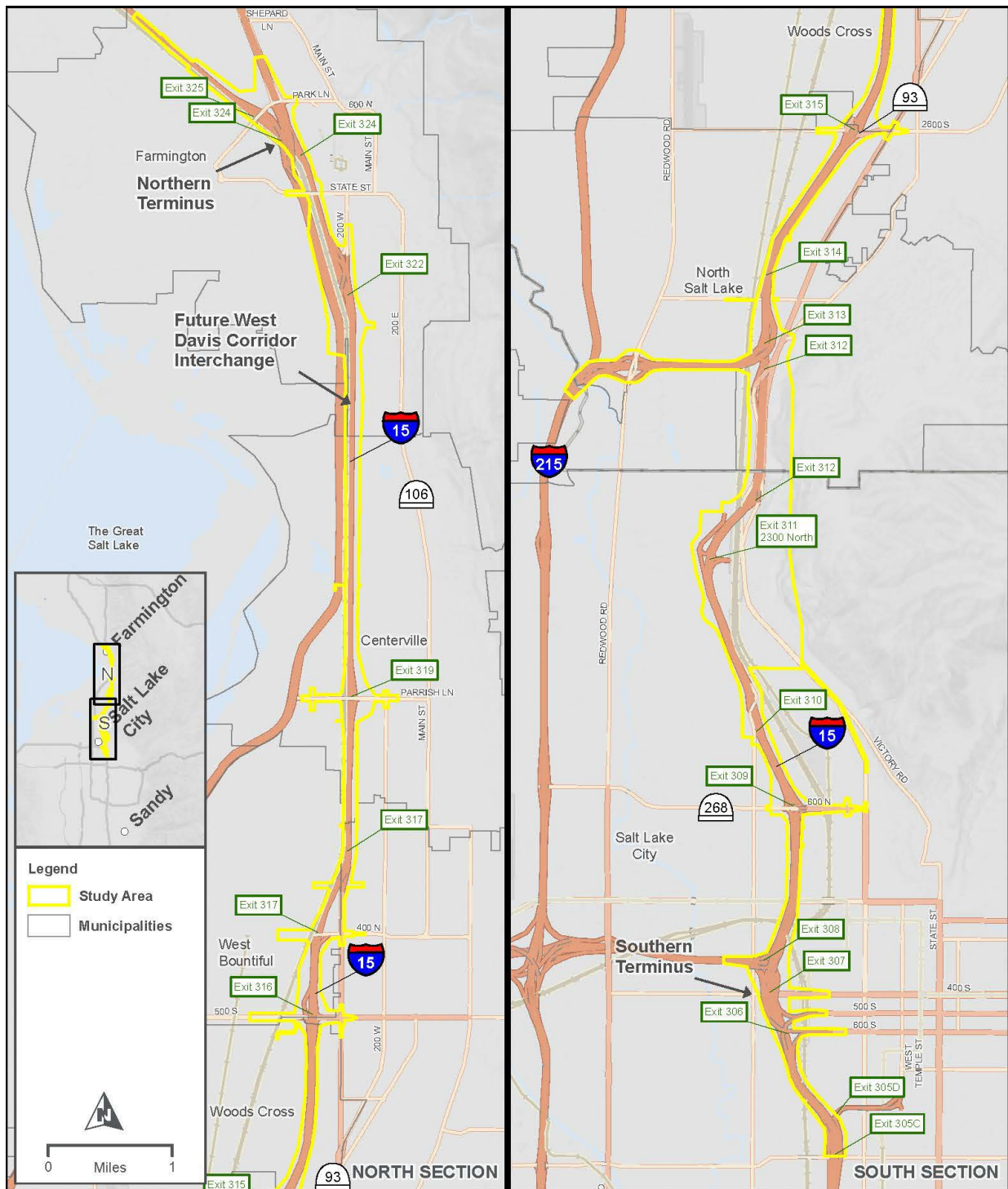
## 2.0 Need for the Project

Improvements to I-15 between Farmington and Salt Lake City are needed due to aging infrastructure and worsening operational characteristics for current and projected (2050) travel demand, both of which contribute to decreased safety, increased congestion, lost productivity, and longer travel times. East-west streets that access or cross I-15 are important to connect communities and support other travel modes such as biking, walking, and transit. When I-15 and its interchanges do not support travel demand, traffic is added to the local streets, which affects both the regional and local transportation system as well as safe, comfortable, and efficient travel for all users.

### What is travel demand?

Travel demand is the expected number of transportation trips in an area. Travel demand can be met by various modes of travel, such as automobile, bus, light rail, carpooling, and bicycling.

Figure 1. Study Area for the I-15 EIS



**NEEDS ASSESMENT STUDY AREA**  
**I-15 EIS: FARMINGTON TO SALT LAKE CITY**



### 3.0 Purpose of the Project

I-15 is the primary north-south interstate highway in Utah and links most trips going to or from all destinations along the Wasatch Front and within Davis and Salt Lake Counties. I-15 also provides regional connections to Las Vegas, southern California, eastern Idaho, and Montana.

I-15 is also a national freight corridor. All segments of I-15 in Davis and Salt Lake Counties carry some of the highest volumes and percentages of freight trips in Utah. I-15 is a National Highway Freight Network route and provides direct connections to West Coast ports.

The purpose of the I-15 project is to improve safety, replace aging infrastructure, provide better mobility for all users, strengthen the state and local economy, and better connect communities along I-15 from Farmington to Salt Lake City.

### 4.0 I-15 Mainline Alternatives

The existing I-15 mainline in the project study area generally has three general-purpose (GP) lanes and one high-occupancy/toll (HOT) lane in Salt Lake County and four GP lanes and one HOT lane in Davis County in each direction. In addition to the through travel lanes, there are also auxiliary lanes (lanes that start at an on-ramp and continue to the next off-ramp) in several locations in the study area.

The EIS is evaluating one mainline alternative, which is described below.

**5 GP and 1 HOT Lane Alternative.** The 5 GP and 1 HOT lane alternative would widen I-15 to a roadway cross section of 5 GP lanes and 1 HOT lane in each direction. This alternative would reduce travel time by about 49% to 55% and increase average speeds by 95% to 125% during both the AM and PM peak periods compared to the 2050 no-action conditions. The 5 GP and 1 HOT lane alternative is consistent with the assumptions for I-15 in the Wasatch Front Regional Council's (WFRC) 2019–2050 regional transportation plan (RTP; WFRC 2019).

#### What are peak periods?

A peak period is a period during a day during which travel demand is highest. For the I-15 project, the morning peak period is the 4-hour period between 6 AM and 10 AM, and the evening peak period is the 4-hour period between 3 PM and 7 PM.

The EIS is also evaluating the following different interchange and active transportation options:

- I-15 profile, local road crossing, and active transportation crossing options between North Temple and the 600 North interchange in Salt Lake City
- Salt Lake City 1000 North interchange and active transportation options
- Salt Lake City 2100 North interchange and active transportation options
- Shared-use path connection options between Salt Lake City and North Salt Lake east of I-15
- I-215 interchange and active transportation options
- North Salt Lake/Woods Cross 2600 South interchange and active transportation options
- Bountiful 500 South interchange and active transportation options
- Bountiful 400 North/500 West interchange and active transportation options
- Centerville Parrish Lane interchange and active transportation options
- Farmington 200 West interchange and active transportation options
- Farmington State Street crossing and active transportation options

The different interchange and active transportation alternatives listed above would not change the annual average daily traffic (AADT) or percent of diesel buses and trucks and therefore would not affect the project's influence on the National Ambient Air Quality Standards.

## 5.0 Regulatory Setting

### 5.1 National Ambient Air Quality Standards (NAAQS)

The U.S. Environmental Protection Agency (EPA), under the authority of the Clean Air Act (42 USC Section 7401 and subsequent sections), established National Ambient Air Quality Standards (NAAQS) for ubiquitous pollutants considered harmful to public health and the environment (40 Code of Federal Regulations [CFR] Part 50). These standards include both primary and secondary standards. Primary standards protect public health, while secondary standards protect public welfare (such as protecting property and vegetation from the effects of air pollution). These standards have been adopted by the Utah Division of Air Quality as the official ambient air quality standards for Utah.

EPA has set NAAQS for six principal pollutants known as criteria pollutants. The current NAAQS are listed in Table 1. According to EPA, transportation sources currently contribute to four of the six criteria pollutants: carbon monoxide (CO), particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), ozone (O<sub>3</sub>), and nitrogen dioxide (NO<sub>2</sub>).

If an area meets the NAAQS for a given air pollutant, the area is called an attainment area for that pollutant (because the NAAQS have been attained). If an area does not meet the NAAQS for a given air pollutant, the area is called a nonattainment area. A maintenance area is an area previously designated as a nonattainment area that has been redesignated as an attainment area and is required by Section 175A of the Clean Air Act, as amended, to have a maintenance plan for the 20 years following its redesignation to attainment or maintenance status.

#### 5.1.1 Attainment Status of the Project Study Area

The project study area is located in Salt Lake and Davis Counties. Salt Lake and Davis Counties are attainment areas for CO, NO<sub>2</sub>, and lead (Pb), and Davis County is an attainment area for PM<sub>10</sub> and sulfur dioxide (SO<sub>2</sub>). Salt Lake County is a nonattainment area for PM<sub>2.5</sub>, O<sub>3</sub>, and secondary SO<sub>2</sub> and a maintenance area for PM<sub>10</sub>, having transitioned from a nonattainment area effective March 27, 2020. Davis County is a nonattainment area for PM<sub>2.5</sub> and O<sub>3</sub>. Table 1 shows the attainment status for Salt Lake and Davis County Counties for each criteria pollutant.

SO<sub>2</sub> and Pb are not considered transportation-related criteria pollutants and are not discussed further.

The Utah Division of Air Quality maintains a network of air quality monitoring stations throughout the state. In general, these monitoring stations are located where there are known air quality problems, so they are usually in or near urban areas or close to specific emission sources. Other stations are located in suburban locations or remote areas to provide an indication of regional air pollution levels.

The Bountiful #2 Monitoring Station (#490110004) located at 171 West 1370 North in Bountiful, the Rose Park Monitoring Station (#490353010) located at 1400 W. Goodwin Avenue in Salt Lake City, and the Hawthorne Monitoring Station (#490353006) located at 1675 South 600 East in Salt Lake City are the closest air quality monitors to the project study area that provide data for all transportation-related criteria pollutants (PM<sub>10</sub>, PM<sub>2.5</sub>, O<sub>3</sub>, CO, and NO<sub>2</sub>). Air quality data for transportation-related criteria pollutants from these monitoring stations are compiled in Appendix A, *Air Quality Monitoring Data*, for 2017 to 2021.

Table 1. National and Utah Ambient Air Quality Standards for Criteria Pollutants and Attainment Status for Salt Lake and Davis Counties

Pollutant	Primary/Secondary	Averaging Time	Level	Form	Attainment Status for Salt Lake and Davis Counties
Carbon monoxide (CO)	Primary	8 hours	9 ppm	Not to be exceeded more than once per year	Salt Lake and Davis Counties are attainment areas
		1 hour	35 ppm	Not to be exceeded more than once per year	
Ozone (O <sub>3</sub> )	Primary and secondary	8 hours	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years	Salt Lake and Davis Counties are marginal nonattainment areas
Particulate matter (PM <sub>2.5</sub> )	Primary	1 year	12.0 µg/m <sup>3</sup>	Annual mean, averaged over 3 years	Salt Lake and Davis Counties are serious nonattainment areas
	Secondary	1 year	15.0 µg/m <sup>3</sup>	Annual mean, averaged over 3 years	
	Primary and secondary	24 hours	35 µg/m <sup>3</sup>	98th percentile, averaged over 3 years	
Particulate matter (PM <sub>10</sub> )	Primary and secondary	24 hours	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years	Salt Lake County is a maintenance area and Davis County is an attainment area
Nitrogen dioxide (NO <sub>2</sub> )	Primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years	Salt Lake and Davis Counties are attainment areas
	Primary and secondary	1 year	53 ppb	Annual mean	Salt Lake and Davis Counties are attainment areas
Sulfur dioxide (SO <sub>2</sub> )	Primary	1 hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.	Salt Lake and Davis Counties are attainment areas
	Secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year.	Salt Lake County is a nonattainment area and Davis County is an attainment area
Lead (Pb)	Primary and secondary	Rolling 3-month average	0.15 µg/m <sup>3</sup>	Not to be exceeded	Salt Lake and Davis Counties are attainment areas

Sources: 49 CFR Part 50 (NAAQS) and EPA 2022 (attainment status)

µg/m<sup>3</sup> = micrograms per cubic meter; ppm = parts per million; ppb = parts per billion; PM<sub>2.5</sub> = particulate matter 2.5 microns in diameter or less; PM<sub>10</sub> = particulate matter 10 microns in diameter or less

## 5.2 Transportation Conformity Requirements

Transportation conformity is a process required by Clean Air Act Section 176(c), which establishes the framework for improving air quality to protect public health and the environment. All state governments are required to develop a state implementation plan (SIP) for each pollutant for which an area is in nonattainment or maintenance status. The SIP explains how the State will comply with the requirements of the Clean Air Act.

Section 176(c) of the Clean Air Act, and its related amendments, require that transportation plans, programs, and projects that are developed, funded, or approved by FHWA and/or the Federal Transit Administration, and metropolitan planning organizations, must demonstrate that such activities conform to the SIP. Transportation conformity requirements apply to any transportation-related criteria pollutants for which the project area is designated a nonattainment or maintenance area.

Unless the project is exempt from conformity requirements, federal agencies are required to make a conformity determination before adopting, accepting, approving, or funding an activity or project located in a nonattainment or maintenance area. A conformity determination is a finding that the activity or project conforms to the SIP's purpose of "eliminating or reducing the severity and number of violations" of the NAAQS and "achieving expeditious attainment of the NAAQS" [42 USC Section 7506(c)] and that the project or activity will not:

- Cause or contribute to new air quality violations of the NAAQS,
- Worsen existing violations of the NAAQS, or
- Delay timely attainment of the NAAQS or required interim milestones.

To demonstrate project-level conformity, a project must come from a conforming RTP and transportation improvement program (TIP), the project design concept and scope must not have changed significantly from that in the RTP and TIP, and the analysis must have used the latest planning assumptions and latest estimates of emissions. Additional analysis might be necessary in CO, PM<sub>10</sub>, and PM<sub>2.5</sub> nonattainment or maintenance areas to determine whether a project would have local air quality impacts. This analysis is referred to as a "hot-spot" analysis. A hot-spot analysis is defined in 40 CFR Section 93.101 as an estimation of likely future local pollutant concentrations and a comparison of those concentrations to the relevant NAAQS. A hot-spot analysis assesses air quality impacts on a smaller scale than an entire nonattainment or maintenance area. A project that requires a PM<sub>10</sub> and PM<sub>2.5</sub> hot-spot analysis is referred to as a "**project of air quality concern.**"

Because the improvements associated with the I-15 project would be in a CO attainment area, a CO hot-spot analysis is not required.

### What is transportation conformity?

Transportation conformity is a process required by Clean Air Act Section 176(c), which establishes the framework for improving air quality to protect public health and the environment.

### What is a hot-spot analysis?

A hot-spot analysis is an estimation of likely future local pollutant concentrations and a comparison of those concentrations to the relevant NAAQS.

## 5.2.1 Transportation Conformity Compliance

WFRC is the metropolitan planning organization for the project region and develops the Wasatch Front RTP (WFRC 2019). The amended 2019–2050 RTP includes two projects that identify improvements to I-15 in Davis and Salt Lake Counties (these two projects are consistent with the 5 GP and 1 HOT lane alternative):

- I-15 widening (from 5 lanes to 6 lanes in each direction) from Farmington to the Salt Lake County border (2019–2050 RTP project: R-D-53)
- I-15 widening (from 4 and 5 lanes to 6 lanes in each direction) from the Davis County border to 600 North in Salt Lake City (2019–2050 RTP project: R-S-137)

EPA approved the maintenance plan for the Salt Lake County 8-hour O<sub>3</sub> standard on September 26, 2013 (78 Federal Register [FR] 59242). Project-level conformity for O<sub>3</sub> is met by demonstrating that the area has a conforming RTP and TIP, and that the project is consistent with the description provided in the RTP.

EPA approved the maintenance plan for the Salt Lake County SIP for PM<sub>10</sub> on July 8, 1994 (59 FR 35036). Salt Lake and Davis Counties do not yet have an approved SIP for PM<sub>2.5</sub>. Until the SIP is approved, interim emissions tests are required for RTP conformity determinations.

The I-15 EIS is also listed in the 2023–2028 TIP (WFRC 2022).

## 5.2.2 Exempt Projects

Projects consistent with 40 CFR Section 93.126 or 40 CFR Section 93.128 are exempt from transportation conformity requirements. Exempt projects include safety projects such as railroad crossings, guard rails, and bridge reconstruction (with no additional travel lanes); mass transit projects such as rehabilitation of transit vehicles; air quality projects such as pedestrian and bicycle facilities; and other projects such as noise attenuation. The I-15 project is not an exempt project under either 40 CFR Section 93.126 or 40 CFR Section 93.128.

### 5.2.3 Definitions and Examples of Projects of Local Air Quality Concern

**PM<sub>2.5</sub> and PM<sub>10</sub> Project-level Analysis Requirements.** A PM hot-spot analysis is required only for specific types of projects, which are listed in the transportation conformity regulations at 40 CFR Section 93.123(b)(1). Projects that require quantitative hot-spot analyses for PM<sub>2.5</sub> and PM<sub>10</sub> are:

- 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 (LOS) D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased 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
- v. Projects in or affecting locations, areas, or categories of sites that 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

#### What is level of service?

Level of service is a measure of the operating conditions on a road or at an intersection. Level of service is represented by a letter "grade" ranging from A (free-flowing traffic and little delay) to F (extremely congested, stop-and-go traffic and excessive delay).

As stated in the list above, the primary considerations in determining whether a project is potentially one of air quality concern is the number of diesel-fueled vehicles resulting from the project or the number of diesel-fueled vehicles at poorly operating intersections.

EPA's *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM<sub>2.5</sub> and PM<sub>10</sub> Nonattainment and Maintenance Areas* (EPA 2021) provides guidance for reviewing transportation projects in the context of CFR Title 40 and clarification regarding the criteria for determining whether a project is a project of air quality concern. Appendix B of EPA's hot-spot guidance provides the following examples of projects of local air quality concern that would be covered by 40 CFR 93.123(b)(1)(i) and (ii):

- A project on a new highway or expressway that serves a significant volume of diesel vehicle traffic, such as facilities with greater than 125,000 AADT, and 8% or more of such AADT is diesel truck traffic
- New exit ramps and other highway facility improvements to connect a highway or expressway to a major freight, bus, or intermodal terminal
- Expansion of an existing highway or other facility that affects a congested intersection (operated at LOS D, E, or F) that has a significant increase in the number of diesel trucks
- Similar highway projects that involve a significant increase in the number of diesel transit buses and/or diesel trucks



EPA's hot-spot guidance also provides the following examples of projects that are *not* projects of local air quality concern under 40 CFR 93.123(b)(1)(i) and (ii):

- Any new or expanded highway project that primarily services gasoline vehicle traffic (that is, does not involve a significant number or increase in the number of diesel vehicles), including such projects involving congested intersections operating at LOS D, E, or F.
- An intersection channelization project or interchange-configuration project that involves either turn lanes or slots, or lanes or movements that are physically separated. These kinds of projects improve freeway operations by smoothing traffic flow and vehicle speeds by improving weave and merge operations, which would not be expected to create or worsen PM NAAQS violations.
- Intersection channelization projects, traffic circles or roundabouts, intersection signalization projects at individual intersections, and interchange-reconfiguration projects that are designed to improve traffic flow and vehicle speeds, and do not involve any increases in idling. Thus, they would be expected to have a neutral or positive influence on PM emissions.

## 6.0 Project of Local Air Quality Concern Evaluation

This section reviews the characteristics of the I-15 project according to the types of projects that require quantitative hot-spot analyses listed in the transportation conformity regulations at 40 CFR Section 93.123(b)(1).

### 6.1 New or Expanded Highway

**Definition.** Is this a new highway project that has a significant number of diesel vehicles or an expanded highway project that will have a significant increase in the number of diesel vehicles?

**Response.** No. The I-15 project is not a new or expanded highway project that would significantly increase the number of diesel vehicles. The I-15 project would replace aging infrastructure and add additional travel lanes to reduce congestion. The proposed project is intended to improve safety and accommodate expected traffic growth in the future.

Table 2 on page 11 shows the percentages of buses and single-unit trucks (FHWA classes 4–7) and single- and multitrailer trucks (FHWA classes 8–13) on segments of I-15 in 2019 as well as the percentages of trucks that use diesel fuel. Based on factory sales, the share of diesel buses and trucks for classes 4–7 varied between 27% and 90% in 2019, and class 8 truck sales were 100% diesel (Davis and Bounday 2022). The share of class 4 and 5 diesel trucks sold has declined from 1995 to 2019, whereas the share of class 6 diesel trucks increased during that period, and class 8 continued to be 100% diesel.

Although the I-15 project would make improvements to a major interstate with up to 13% buses and trucks (and up to 10.1% diesel buses and trucks), the percentage of diesel vehicles would not increase as a result of the project because it is intended to improve traffic flow and safety. Even though the percentage of diesel vehicles would not increase, the number of diesel vehicles is expected to increase due to the total growth in AADT in 2050. However, the additional number of diesel vehicles is not considered a significant increase

because the number of additional diesel vehicles in the 2050 action conditions would be up to about 3,588 more than the number of diesel vehicles in the 2050 no-action conditions (on the segment of I-15 from 1000 North to 1100 West/Warm Springs Road, which is the segment with the largest projected increase in AADT and therefore would have the largest projected increase in the number of diesel vehicles in the project area). This projected increase of 3,588 diesel vehicles is 64% lower than the threshold of 10,000 diesel vehicles provided as an example project of local air quality concern in EPA's hot-spot guidance (EPA 2021). In that guidance, a project of local air quality concern is one in which a project on a new highway or expressway serves a significant volume of diesel vehicle traffic, such as facilities with greater than 125,000 AADT, and 8% or more of such AADT is diesel truck traffic (which equals an increase of 10,000 diesel vehicles if AADT is 125,000).

In addition to the new general-purpose lanes provided with the 2050 action conditions, the increase in traffic on the segment of I-15 from 1000 North to 1100 West/Warm Springs Road is also due to the 2050 action conditions providing an improved access for trucks to use the 2100 North interchange to access the gravel quarries and industrial areas on U.S. 89/Beck Street east of I-15. By keeping this truck traffic on I-15, the 2050 action conditions remove the truck traffic that currently travels through the residential and commercial areas on 600 North and 300 West on the east side of I-15 to reach the gravel quarries. The 2050 action conditions also improve the local interchange at 1000 North by providing a new northbound off-ramp to the Rose Park neighborhood on the west side of I-15. This also increases traffic on I-15 but reduces traffic on the local roads (600 North, 900 West, and 1000 West) west of I-15.

Additionally, diesel bus and truck traffic on I-15 in 2050 is anticipated to grow at the same rate as that of the total number of vehicles on I-15 because the I-15 project would not provide additional access to areas that would result in an increase in diesel bus and truck traffic. The same percentage of buses and trucks would access the study area interchanges in both 2019 and 2050 regardless of the design changes that are intended to improve the operation of I-15 and its interchanges (see Table 2 for the percentages of buses and trucks for both the 2050 no-action and 2050 action conditions).

**What are the 2050 no-action conditions?**

The 2050 no-action conditions are the conditions in the study area in 2050 if no I-15 improvements are made and all other funded transit and roadway projects in WFRC's 2019–2050 RTP are in place.



Table 2. Estimated AADT and Percentage of Diesel Buses and Trucks on Segments of I-15 in the Project Study Area in 2019 and 2050

From	To	AADT			% Buses and Trucks / % Diesel Buses and Trucks <sup>a</sup>					
		2019 <sup>b</sup>	2050 No-Action	2050 Build <sup>c</sup>	2019 <sup>b</sup>		2050 No-Action		2050 Build <sup>c</sup>	
					FHWA Classes 4–7	FHWA Classes 8–13	FHWA Classes 4–7	FHWA Classes 8–13	FHWA Classes 4–7	FHWA Classes 8–13
Park Lane	Shepard Lane	145,000	175,000	179,000	5.0% / 2.9%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%
200 West	U.S. 89	141,000	156,000	170,000	7.0% / 4.1%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%
Parrish Lane	200 West	155,000	201,000	221,000	7.0% / 4.1%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%
500 West	Parrish Lane	160,000	207,000	228,000	7.0% / 4.1%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%
500 South	400 North	157,000	197,000	221,000	7.0% / 4.1%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%
2600 South	500 South	159,000	197,000	224,000	7.0% / 4.1%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%
Center Street	2600 South	166,000	208,000	236,000	7.0% / 4.1%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%	6.0% / 3.5%	6.0% / 6.0%
U.S. 89/Beck Street	I-215	129,000	172,000	208,000	5.0% / 2.9%	4.0% / 4.0%	5.0% / 2.9%	4.0% / 4.0%	5.0% / 2.9%	4.0% / 4.0%
1100 West/Warm Springs Road	U.S. 89/Beck Street	135,000	176,000	225,000	5.0% / 2.9%	4.0% / 4.0%	5.0% / 2.9%	4.0% / 4.0%	5.0% / 2.9%	4.0% / 4.0%
1000 North	1100 West/Warm Springs Road	139,000	180,000	232,000	5.0% / 2.9%	4.0% / 4.0%	5.0% / 2.9%	4.0% / 4.0%	5.0% / 2.9%	4.0% / 4.0%
600 North	1000 North	135,000	175,000	226,000	5.0% / 2.9%	4.0% / 4.0%	5.0% / 2.9%	4.0% / 4.0%	5.0% / 2.9%	4.0% / 4.0%
I-80	600 North	153,000	204,000	240,000	5.0% / 2.9%	4.0% / 4.0%	5.0% / 2.9%	4.0% / 4.0%	5.0% / 2.9%	4.0% / 4.0%
400 South	I-80	139,000	185,000	211,000	5.0% / 2.9%	4.0% / 4.0%	5.0% / 2.9%	4.0% / 4.0%	5.0% / 2.9%	4.0% / 4.0%

<sup>a</sup> Total bus and truck percentages are taken from UDOT automated PeMes traffic counters in 2019. Bus and truck percentage is based on PeMes length data and UDOT vehicle classification. Percentage of diesel buses and trucks was calculated by multiplying the percentage of each vehicle class from the PeMes data by the AADT to determine the number of vehicles in each vehicle class, and then multiplying this number by the percentages shown in Table 5.4 in the *Transportation Energy Data Book: Edition 40* (Davis and Bounday 2022). Based on factory sales, the share of diesel buses and trucks for classes 4–7 varied between 27% and 90% in 2019, and class 8 truck sales were 100% diesel (calculations assume all vehicles in classes 8–13 are 100% diesel).

<sup>b</sup> Source: 2019 AADT taken from UDOT automated PeMes traffic counters in 2019.

<sup>c</sup> Source: 2050 AADT from WFRC regional travel demand model, version 8.3.2.

In addition, the proposed improvements to I-15 are not intended to connect a highway or expressway to a major freight, bus, or intermodal terminal. Although there are a number of primary freight centers near the project study area, and the I-15 project would make improvements to the interchanges these freight centers use, the I-15 project would not construct new exit ramps or make other highway facility improvements designed to connect directly to or provide an improved access for any specific major freight, bus, or intermodal terminal. Table 3 lists the primary freight centers near the project study area. For more information about Utah’s primary freight centers, see the *Utah Freight Plan* (UDOT 2017).

**Table 3. Primary Freight Centers near the Project Study Area and Proposed Access Changes**

Freight Center	Location	Current I-15 Roadway Access	Change in Roadway Access with I-15 Project
Holly Frontier Oil Refinery	393 South 800 West, Woods Cross	500 South interchange, Woods Cross	No change in access. The interchange at 500 South and I-15 would be converted from a diverging diamond interchange to a tight diamond interchange. Access to the Holly facility to or from I-15 would remain the same.
Woods Cross Asphalt Plants	Two plants west of 1100 West 2600 South, Woods Cross	2600 South interchange, Woods Cross	No change in access to and from I-15 at the 2600 South interchange. The interchange at 2600 South would be converted to a single-point urban interchange, and traffic operations at the interchange and on 2600 South would be improved.
Silver Eagle Refinery	2355 South 1100 West, Woods Cross	2600 South interchange, Woods Cross	
Conoco Refinery	245 East 1100 North, North Salt Lake	2600 South interchange, Woods Cross	
Pioneer Pipeline Terminal	245 East 1100 North, North Salt Lake	2600 South interchange, Woods Cross	
North Salt Lake Industrial Complex and Big West Oil Refinery	West of I-15 between Center Street in North Salt Lake and 2600 South in Woods Cross  Big West Oil Refinery is at 333 W. Center St., North Salt Lake	2600 South, Woods Cross; Center Street, North Salt Lake (southbound exit only); U.S. 89, Salt Lake City; or I-215 at Redwood Road, North Salt Lake	No change in access to and from I-15 at the 2600 South interchange. The interchange at 2600 South would be converted to a single-point urban interchange, and traffic operations at the interchange and on 2600 South would be improved. The existing southbound off-ramp access to I-15 at Center St. would be removed. New access (for both southbound and northbound traffic on I-15) to North Salt Lake and this industrial complex would be provided with a new interchange at I-215/U.S. 89.  There would be no change to access to or from I-215 at the Redwood Road interchange.

*(continued on next page)*

Table 3. Primary Freight Centers near the Project Study Area and Proposed Access Changes

Freight Center	Location	Current I-15 Roadway Access	Change in Roadway Access with I-15 Project
Chevron Refinery and Pipeline Terminal	2351 North 1100 West, Salt Lake City	2100 North, Salt Lake City	Access to I-15 would continue to be at the 2100 North (Salt Lake City) interchange. Access to I-15 would be improved at 2100 North with full access to both northbound and southbound I-15 coming from both the west and east sides of I-15 (some of these movements are currently restricted).
Beck Street Gravel Pits	2000 N. Beck St., Salt Lake City	Beck Street/U.S. 89 or Warm Springs Road, Salt Lake City	Improved access to I-15 at the 2100 North interchange would be provided with full access to both northbound and southbound I-15 coming from both the west and east sides of I-15 (some of these movements are currently restricted). Access to I-15 from U.S. 89 would be more direct compared to existing conditions and would reduce current out-of-direction movements that use the 600 North interchange.
Marathon/Tesoro Refinery	474 West 900 North, Salt Lake City	Beck Street or 600 North, Salt Lake City	Access to and from I-15 would continue to be at the 600 North interchange. The interchange at 600 North and I-15 would be converted from a single-point urban interchange to a tight diamond interchange, but access would remain the same.

Source: *Utah Freight Plan* (UDOT 2017)

## 6.2 Projects with Congested Intersections

**Definition.** Does this project affect intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or will this project change an intersection to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project?

**Response.** No. Table 4 lists the intersections in the project study area that could be affected by the proposed project improvements. Although a number of intersections in the study area currently operate at LOS D, E, or F, none of these currently operate with a significant number of diesel vehicles (at least 8% diesel vehicles).<sup>1</sup>

Of the 35 intersections listed in Table 4, only five of these (Warm Springs Road on-ramp to I-15, 900 West on-ramp to I-15, 1100 West and 2600 South, Chicago Street and 1800 North, and Warm Springs Road and 1800 North) currently operate with a significant number of diesel vehicles (at least 8%) (for ease of reference, the rows for these intersections are shaded a darker blue in Table 4). Of these five, three (Warm Springs Road on-ramp to I-15, 900 West on-ramp to I-15, and the intersection of 1100 West and 2600 South) are projected to operate at LOS E or F under the 2050 no-action conditions. Therefore, these intersections would not change to LOS E or F due to increased traffic volumes from a significant number of diesel vehicles related to the project. In addition, the level of service is projected to improve at these intersections under the 2050 action conditions.

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<sup>1</sup> Table 4 shows that the 1100 West and 2600 South intersection currently operates at LOS E with 8% buses and trucks. However, based on factory sales, the share of diesel buses and trucks for FHWA classes 4–7 varied between 27% and 90% in 2019, so the actual percentage of diesel buses and trucks in FHWA classes 4–7 is less than what is shown in Table 4, which shows the percentage of buses and trucks in FHWA classes 4–7 for all fuel types. Class 8 truck sales were 100% diesel (Davis and Bounday 2022); therefore, data for FHWA classes 8–13 shown in Table 4 are assumed to be 100% diesel.

Table 4. Estimated LOS and Percentage of Buses and Trucks at Intersections on I-15 in the Project Study Area in 2019 and 2050

North-south Street	East-west Street	City	2019				2050							
			AADT	LOS	% Buses and Trucks		No-Action				Action			
					FHWA Classes 4-7 <sup>a</sup>	FHWA Classes 8-13	AADT	LOS	% Buses and Trucks		AADT	LOS	% Buses and Trucks	
									FHWA Classes 4-7 <sup>a</sup>	FHWA Classes 8-13			FHWA Classes 4-7 <sup>a</sup>	FHWA Classes 8-13
900 West	600 North	Salt Lake City	24,400	B	4%	2%	31,800	C	4%	2%	28,800	C	4%	2%
800 West	600 North	Salt Lake City	19,200	A	4%	2%	27,300	B	4%	2%	22,900	B	4%	2%
400 West	600 North	Salt Lake City	30,600	C	4%	2%	38,100	F	4%	2%	38,100	D	4%	2%
Warm Springs Road	On-ramp to I-15	Salt Lake City	2,900	B	6%	4%	3,500	E	6%	4%	N/A	D	6%	4%
900 West	On-ramp to I-15	Salt Lake City	14,700	C	6%	4%	15,700	F	6%	4%	23,300	D	6%	4%
U.S. 89	Eagle Gate Drive	North Salt Lake	26,800	A	4%	2%	32,500	B	4%	2%	36,500	B	4%	2%
U.S. 89	Eagle Ridge Drive	North Salt Lake	29,900	B	4%	2%	36,000	C	4%	2%	40,100	B	4%	2%
U.S. 89	Center Street	North Salt Lake	18,700	B	4%	2%	23,400	C	4%	2%	24,800	B	4%	2%
Main Street	Center Street	North Salt Lake	12,000	C	4%	2%	14,600	C	2%	1%	13,000	D	2%	1%
Wildcat Way	2600 South	Woods Cross	34,500	C	3%	1%	37,000	E	4%	2%	46,000	C	4%	2%

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Table 4. Estimated LOS and Percentage of Buses and Trucks at Intersections on I-15 in the Project Study Area in 2019 and 2050

North-south Street	East-west Street	City	2019				2050							
			AADT	LOS	% Buses and Trucks		No-Action				Action			
					FHWA Classes 4-7 <sup>a</sup>	FHWA Classes 8-13	AADT	LOS	% Buses and Trucks		AADT	LOS	% Buses and Trucks	
									FHWA Classes 4-7 <sup>a</sup>	FHWA Classes 8-13			FHWA Classes 4-7 <sup>a</sup>	FHWA Classes 8-13
U.S. 89	2600 South	Woods Cross/ North Salt Lake/ Bountiful	42,800	D	3%	1%	46,200	F	4%	2%	48,300	E	4%	2%
1100 West	2600 South	North Salt Lake	13,000	E	5%	3%	14,400	F	4%	2%	14,400	B	4%	2%
U.S. 89	500 South	Bountiful	49,900	D	3%	1%	57,900	F	4%	2%	58,800	D	4%	2%
700 West	500 South	West Bountiful/ Woods Cross	15,400	A	4%	2%	26,200	F	4%	2%	26,100	B	4%	2%
800 West	500 South	West Bountiful	11,900	A	4%	2%	20,200	F	4%	2%	19,300	A	4%	2%
500 West (U.S. 89)	400 North	West Bountiful/ Bountiful	40,900	D	3%	1%	51,100	F	4%	2%	48,700	D	4%	2%
660 West	400 North	West Bountiful	1,800	A	3%	1%	2,000	A	4%	2%	2,100	A	4%	2%
800 West	400 North	West Bountiful	10,400	D	2%	1%	14,900	C	2%	1%	17,000	B	2%	1%
U.S. 89	1000 North	Bountiful	22,700	B	3%	1%	29,400	F	4%	2%	18,400	B	4%	2%
Frontage Road (700 West)	Parrish Lane	Bountiful	37,200	F	2%	1%	42,900	F	2%	1%	43,800	C	2%	1%

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Table 4. Estimated LOS and Percentage of Buses and Trucks at Intersections on I-15 in the Project Study Area in 2019 and 2050

North-south Street	East-west Street	City	2019				2050							
			AADT	LOS	% Buses and Trucks		No-Action				Action			
					FHWA Classes 4-7 <sup>a</sup>	FHWA Classes 8-13	AADT	LOS	% Buses and Trucks		AADT	LOS	% Buses and Trucks	
									FHWA Classes 4-7 <sup>a</sup>	FHWA Classes 8-13			FHWA Classes 4-7 <sup>a</sup>	FHWA Classes 8-13
Marketplace Drive	Parrish Lane	Centerville	40,300	C	2%	1%	46,400	D	2%	1%	47,200	C	2%	1%
400 West	Parrish Lane	Centerville	35,600	C	2%	1%	39,400	D	2%	1%	41,300	C	2%	1%
1250 West	Parrish Lane	Centerville	20,300	B	3%	1%	33,700	D	2%	1%	32,600	D	2%	1%
Legacy Parkway northbound ramps	Parrish Lane	Centerville	10,800	B	2%	1%	19,500	F	2%	1%	17,500	C	2%	1%
Legacy Parkway southbound ramps	Parrish Lane	Centerville	3,400	B	2%	1%	7,000	C	2%	1%	5,700	B	2%	1%
Frontage Road	Glovers Lane	Farmington	9,800	F	2%	1%	11,000	D	2%	1%	11,300	D	2%	1%
650 West	Glovers Lane	Farmington	8,200	B	2%	1%	16,800	C	2%	1%	16,700	C	2%	1%
200 West	State Street	Farmington	16,600	B	4%	2%	18,100	E	4%	2%	18,700	E	4%	2%
400 West	State Street	Farmington	15,100	A	4%	2%	17,400	E	4%	2%	17,700	E	4%	2%
650 West	State Street	Farmington	19,200	B	4%	2%	23,300	C	4%	2%	23,200	C	4%	2%

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Table 4. Estimated LOS and Percentage of Buses and Trucks at Intersections on I-15 in the Project Study Area in 2019 and 2050

North-south Street	East-west Street	City	2019				2050							
			AADT	LOS	% Buses and Trucks		No-Action				Action			
					FHWA Classes 4-7 <sup>a</sup>	FHWA Classes 8-13	AADT	LOS	% Buses and Trucks		AADT	LOS	% Buses and Trucks	
									FHWA Classes 4-7 <sup>a</sup>	FHWA Classes 8-13			FHWA Classes 4-7 <sup>a</sup>	FHWA Classes 8-13
Chicago Street	1800 North	Salt Lake City	800	A	8%	6%	1,400	A	6%	4%	700	NA <sup>b</sup>	6%	4%
Beck Street	Chicago Street	Salt Lake City	21,000	B	4%	2%	23,900	B	4%	2%	18,000	C	4%	2%
Warm Springs Road	1800 North	Salt Lake City	1,400	A	7%	5%	2,200	B	6%	4%	1,200	NA <sup>b</sup>	6%	4%
300 West	600 North	Salt Lake City	24,800	E	2%	1%	31,100	F	4%	2%	30,600	D	4%	2%

<sup>a</sup> Based on factory sales, the share of diesel buses and trucks for FHWA classes 4-7 varied between 27% and 90% in 2019, so the actual percentage of diesel buses and trucks in FHWA classes 4-7 is less than what is shown in this table, which shows the percentage of buses and trucks in FHWA classes 4-7 for all fuel types. Class 8 truck sales were 100% diesel (Davis and Bounday 2022); therefore, data for FHWA classes 8-13 shown in this table are assumed to be 100% diesel.

<sup>b</sup> The 2050 action conditions would change these intersections. Warm Springs Road and Chicago Street would still be operational, but there would be no intersections at 1800 North.



### 6.3 New Bus and Rail Terminals

**Definition.** Does this project include new bus and rail terminals and transfer points that will have a significant number of diesel vehicles congregating at a single location?

**Response.** No. The I-15 project does not include constructing or connecting to new bus or rail terminals or transfer stations.

### 6.4 Expanded Bus and Rail Terminals

**Definition.** Does this project include expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location?

**Response.** No. The I-15 project does not include expanding bus or rail terminals or transfer stations.

### 6.5 Projects in or Affecting PM<sub>10</sub> or PM<sub>2.5</sub> Sites of Violation or Possible Violation

**Definition.** Is this project in or affecting locations, areas, or categories of sites that 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?

**Response.** No. Sections IX.A and IX.A.21 of Utah's SIP address PM<sub>10</sub> and PM<sub>2.5</sub> in Salt Lake County (UDEQ 2022). The improvements associated with the I-15 project would not be located in or affect locations, areas, or categories of sites identified in either Section IX.A or Section IX.A.21 of the SIP as sites of violation or possible violation.

### 6.6 Project of Air Quality Concern Determination

**Standard.** State whether the project is a project of air quality concern and summarize the support determination. Document the relevant agencies that require interagency consultation on any input for the determination from federal, state, and local transportation and air agencies as necessary for this project per 40 CFR Section 93.105. This information will be included in any subsequent air quality analysis and project-level conformity determination reports.

**Response.** The I-15 project does not qualify as a project of air quality concern since it would not increase the percentage of diesel vehicles and would not significantly increase the number of diesel vehicles in the project study area compared to the no-action conditions. The project is not expected to either influence the vehicle mix in the project study area or attract new diesel vehicles to the area.

In summary, the I-15 project is not a project of air quality concern, so no project-level (hot-spot) analysis is required for conformity purposes under 40 CFR Section 93.123(b).

## 7.0 Interagency Consultation

UDOT will provide a copy of this evaluation to the following consultation parties: EPA, FHWA, WFRC, the Federal Transit Administration, the Utah Transit Authority, and the Utah Department of Environmental Quality.

## 8.0 References

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## Appendix A. Air Quality Monitoring Data

Table A-1. Air Quality Monitoring Data from the Bountiful, Rose Park, and Hawthorne Monitoring Stations in Salt Lake and Davis Counties

Pollutant	Standard	Value	Monitoring Station	Monitoring Year and Data <sup>a</sup>				
				2017	2018	2019	2020	2021
PM <sub>10</sub>	24-hour standard <sup>b</sup>	150 µg/m <sup>3</sup>	Bountiful	48	72	30	52	79
			Rose Park	NA	NA	NA	NA	NA
			Hawthorne	84	111	69	114	94
PM <sub>2.5</sub>	24-hour standard <sup>c</sup>	35 µg/m <sup>3</sup>	Bountiful	36	25.6	22.5	25.6	33.5
			Rose Park	38.5	29.4	28.5	32	39.5
			Hawthorne	38.5	28.4	26.4	26.4	36.5
	Annual standard <sup>d</sup>	12 µg/m <sup>3</sup>	Bountiful	8.71	7.94	5.68	7.09	7.63
			Rose Park	9.1	8.87	6.66	8.05	8.99
			Hawthorne	8.56	7.97	6.22	7.6	8.17
O <sub>3</sub>	8-hour standard <sup>e</sup>	0.070 ppm	Bountiful	0.078	0	0.073	0.08	0.082
			Rose Park	NA	NA	0.071	0.08	0.079
			Hawthorne	0.081	0.074	0.073	0.075	0.081
CO	8-hour standard <sup>f</sup>	9 ppm	Bountiful	NA	NA	NA	NA	NA
			Rose Park	NA	2.9	1.3	1.4	1.1
			Hawthorne	1.7	1.6	1.2	1.2	1.3
	1-hour standard <sup>g</sup>	35 ppm	Bountiful	NA	NA	NA	NA	NA
			Rose Park	NA	5.1	1.6	2.0	2.0
			Hawthorne	5	2.5	1.9	1.5	1.6
NO <sub>2</sub>	Annual standard <sup>h</sup>	53 ppb	Bountiful	11.52	11.95	11.52	10.75	10.97
			Rose Park	NA	14.78	13.28	14	13.15
			Hawthorne	12.69	15.1	14.34	15.03	12.5
	1-hour standard <sup>i</sup>	100 ppb	Bountiful	46	45	46	44.1	46.7
			Rose Park	NA	47	46.8	50.4	48.6
			Hawthorne	51	49	55.4	52.6	46.6

Source: UDEQ 2023

µg/m<sup>3</sup> = micrograms per cubic meter, ppb = parts per billion, ppm = parts per million, NA = data not available

<sup>a</sup> The values listed for each pollutant and standard are the first maximum for each year.

<sup>b</sup> The PM<sub>10</sub> 24-hour standard is exceeded when the peak 24-hour value exceeds 150 µg/m<sup>3</sup>. One exceedance of the NAAQS is allowed per year.

<sup>c</sup> The PM<sub>2.5</sub> 24-hour standard is exceeded when the 3-year average of the 98th-percentile value (rounded to the nearest whole number) exceeds 35 µg/m<sup>3</sup>.

<sup>d</sup> The PM<sub>2.5</sub> annual standard is exceeded when the 3-year average of the weighted arithmetic mean exceeds 12.0 µg/m<sup>3</sup>.

<sup>e</sup> The O<sub>3</sub> 8-hour standard is exceeded when the annual fourth-highest daily maximum 8-hour concentration averaged over 3 years exceeds 0.070 ppm.

<sup>f</sup> The CO 8-hour standard is exceeded when the 8-hour concentration exceeds 9 ppm more than once per year.

<sup>g</sup> The CO 1-hour standard is exceeded when the 1-hour concentration exceeds 35 ppm more than once per year.

<sup>h</sup> The NO<sub>2</sub> annual standard is exceeded when the annual average exceeds 53 ppb.

<sup>i</sup> The NO<sub>2</sub> 1-hour standard is exceeded when the 3-year average of the 98th-percentile of 1-hour daily maximum concentrations exceeds 100 ppb.

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