INTERAGENCY CONSULTATION COMMITTEE (ICC)

October 11, 2018 – 8:30 AM
COMPASS, 700 NE 2nd Street, 2nd Floor Large Conference Room
Meridian, Idaho

****AGENDA****

I. CALL TO ORDER (8:30)

II. AGENDA ADDITIONS/CHANGES

III. OPEN DISCUSSION/ANNOUNCEMENTS

IV. CONSENT AGENDA

Page 2 ***A. Approve July 10, 2018, Meeting Minutes**

V. ACTION ITEM

8:35 Page 4 ***A. Accept the Air Quality Technical Report for the State Highway 44 and Eagle Road Intersection Improvements** — ITD

ITD is requesting ICC's review and comments on this report by September 19, 2018. The report is undergoing concurrent review by ITD headquarters and FHWA.

VI. INFORMATION/DISCUSSION ITEM

9:00 **A. Agency Updates**

ICC members are welcome to provide updates and share information on items pertaining to air quality.

VII. OTHER

A. Next Meeting: TBD

VIII. ADJOURNMENT (9:30)

***Enclosures. Times are approximate. Agenda is subject to change.**

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ITEM IV-A

INTERAGENCY CONSULTATION COMMITTEE
JULY 10, 2018
COMMUNITY PLANNING ASSOCIATION

****MEETING MINUTES****

ATTENDEES: Beth Baird, City of Boise, **Vice Chair**
Edinson Bautista, Ada County Highway District
Rhonda Jalbert, Valley Regional Transit, **Chair**
Karl Pepple, Environmental Protection Agency – Region X, via telephone
Kimi Smith, Idaho Department of Environmental Quality
Mike Toole, Idaho Department of Environmental Quality
Greg Vitley, Idaho Transportation Department – District 3
Mary Ann Waldinger, COMPASS

OTHERS PRESENT: Nancy Brecks, COMPASS

CALL TO ORDER:

Chair Rhonda Jalbert called the meeting to order at 8:30 a.m.

AGENDA ADDITIONS/CHANGES

None.

OPEN DISCUSSION/ANNOUCEMENTS

None.

CONSENT AGENDA

A. Approve June 7, 2018, Meeting Minutes

Beth Baird moved and Greg Vitley seconded approval of the Consent Agenda as presented. Motion passed unanimously.

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ACTION ITEM

A. Approve Model Years for Build/No-Build Emissions Analysis for Carbon Monoxide (CO) for the Draft FY2019-2023 Regional Transportation Improvement Program (TIP)

Mary Ann Waldinger discussed staff's recommendation to report the CO-build vehicle emission estimates for the same analysis years as the budget tests, which are 2019, 2023, 2030 and 2040 for the FY2019-2023 TIP air quality conformity demonstration. And to conduct one no-build emission analysis to fulfill the requirement in the CO Limited Maintenance Plan that coincides with the last year of the TIP, which is 2023 and is only one year beyond the end of the CO Limited Maintenance Plan.

After discussion, **Greg Vitley moved and Kimi Smith seconded approval of staff's recommendation as presented. Motion passed unanimously.**

INFORMATION/DISCUSSION ITEMS

A. Receive the Corrected Project List for the Draft FY2019-2023 Regional Transportation Improvement Program (TIP)

Mary Ann Waldinger noted the draft FY2019-2023 TIP project list has been updated changing "no" to "yes" to the federally funded column for widening projects on US 20/26 and SH 44, as both used or are using federal funds to complete the environmental analysis.

Mary Ann Waldinger also reminded ICC about the email and updated project list sent on June 28, 2018, regarding that the Cloverdale Road Overpass (ITD's jurisdiction) will be added to the 2019 Network and the roadway portion (ACHD's jurisdiction) will be moved from the 2040 Network list to the 2019 Network list.

B. Agency Updates

Committee members provided agency updates.

Next Meeting: TBD

ADJOURNMENT

Chair Jalbert adjourned the meeting at 9:00 a.m.

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INTERAGENCY CONSULTATION COMMITTEE AGENDA ITEM V-A

DATE: October 11, 2018

Topic: Air Quality Technical Report for the State Highway (SH 44) and Eagle Road (SH 55) Intersection Improvements.

Request/Recommendation:
On behalf of ITD, COMPASS staff requests ICC review and provide comments on the State Highway (SH 44) and Eagle Road (SH 55) intersection improvement project to ITD by September 19, 2018, and accept the project level analysis for carbon monoxide (CO) at the October 11, 2018, ICC meeting.

Background/Summary:
The SH44 and Eagle Road Half Continuous Flow Intersection required a Project Level Hot Spot analysis for CO to determine if the project action would cause an exceedance of the NAAQS. The report was prepared using modeling assumptions approved by ICC on April 26, 2018, for this project. Exert from page 10 of the attached report:

> *As shown in the table below, the maximum modeled 1-hour and 8-hour CO concentrations, with the addition of background concentrations, are well below the CO NAAQS. The maximum modeled 1-hour concentration, including background, is 1.4 ppm, compared to the NAAQs of 35 ppm. The maximum modeled 8-hour concentration, including background, is 1.0 ppm, compared to the NAAQs of 35 ppm. Therefore, project-level conformity has been demonstrated for CO and no violation of the CO NAAQS is expected to result from the proposed project.*

Table 3. Modeled CO Concentrations vs. NAAQS

Intersection—2040 PM Peak Hour	1-Hour CO Result (ppm)				8-Hour CO Result (ppm)[a]			
	Modeled	Background	Total	NAAQS	Modeled	Background	Total	NAAQS
SH-44 and SH-55	0.2	1.2	1.4	35	0.12	0.9	1.0	9

a 8-hour modeled concentrations are estimated based on an IDEQ-recommended persistence factor of 0.6.

This report is being reviewed concurrently by ITD headquarters and FHWA so that all the comments can be addressed by the consultant at one time. Please submit comments to Greg Vitley at Greg.Vitley@itd.idaho.gov by September 19, 2018.

Comments will be addressed and the revised study will be provided by September 26, 2018.

More Information
1) Attachment
2) For detailed information contact: Greg Vitley at Greg.Vitley@itd.idaho.gov.

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AIR QUALITY TECHNICAL REPORT

State Highway 44 (SH44) and Eagle Road (State Highway 55)
Intersection Improvements
Ada County, Idaho

Prepared for:
Idaho Transportation Department

TIP Key No.
13476

Prepared by:
HDR

August 30, 2018

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Acronyms and Abbreviations

AAC	acceptable ambient concentrations
BMP	best management practice
CAA	Clean Air Act
CFI	Continuous Flow Interchange
CFR	Code of Federal Regulations
CO	carbon monoxide
COMPASS	Community Planning Association of Southwest Idaho
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gases
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Department of Environmental Quality
ITD	Idaho Transportation Department
LOS	level of service
MOVES	Motor Vehicle Emissions Simulator
MPO	metropolitan planning organization
MSAT	mobile source air toxics
NAAQS	National Ambient Air Quality Standards
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NEPA	National Environmental Policy Act
O_3	ozone
Pb	lead
$PM_{2.5}$	particulate matter smaller than 2.5 microns in diameter
PM_{10}	particulate matter smaller than 10 microns in diameter
RFS2	Renewable Fuel Standard Program
SH-44	State Highway 44
SH-55	State Highway 55
SIP	State Implementation Plan
SO_2	sulfur dioxide
TIP	Transportation Improvement Program
U.S.	United States
USEPA	United States Environmental Protection Agency
VMT	vehicle miles traveled

1.0 Introduction/Background

This Air Quality Technical Report examines potential impacts to air quality due to a proposed project to improve the intersection of State Highway 44 (SH-44) and Eagle Road (SH-55) in Eagle, Idaho, a northwest suburb of Boise.

The Idaho Transportation Department (ITD) plans to widen the intersection of SH-44 and SH-55 to accommodate future traffic volumes in the area. As part of the project development process, an environmental evaluation is being conducted to assess the air quality impacts associated with the improved intersection and demonstrate conformance to the National Ambient Air Quality Standards (NAAQS). The intersection is located in Ada County, which has a history of violating the NAAQS for carbon monoxide (CO) and coarse particulate matter (PM_{10}). Thus, the project must demonstrate Project-Level Conformity to the NAAQS for CO and PM_{10} per the requirements of 40 Code of Federal Regulations (CFR) 93 Subpart A (§93.123) - Hot-Spot analysis.

The general project location is shown in Figure 1. The Proposed Action would improve this intersection by adding lanes to add capacity and would change the intersection configuration to a continuous flow intersection (CFI). The project would improve level-of-service (LOS) at this intersection in comparison to the no-build alternative.

1.1 Study Area

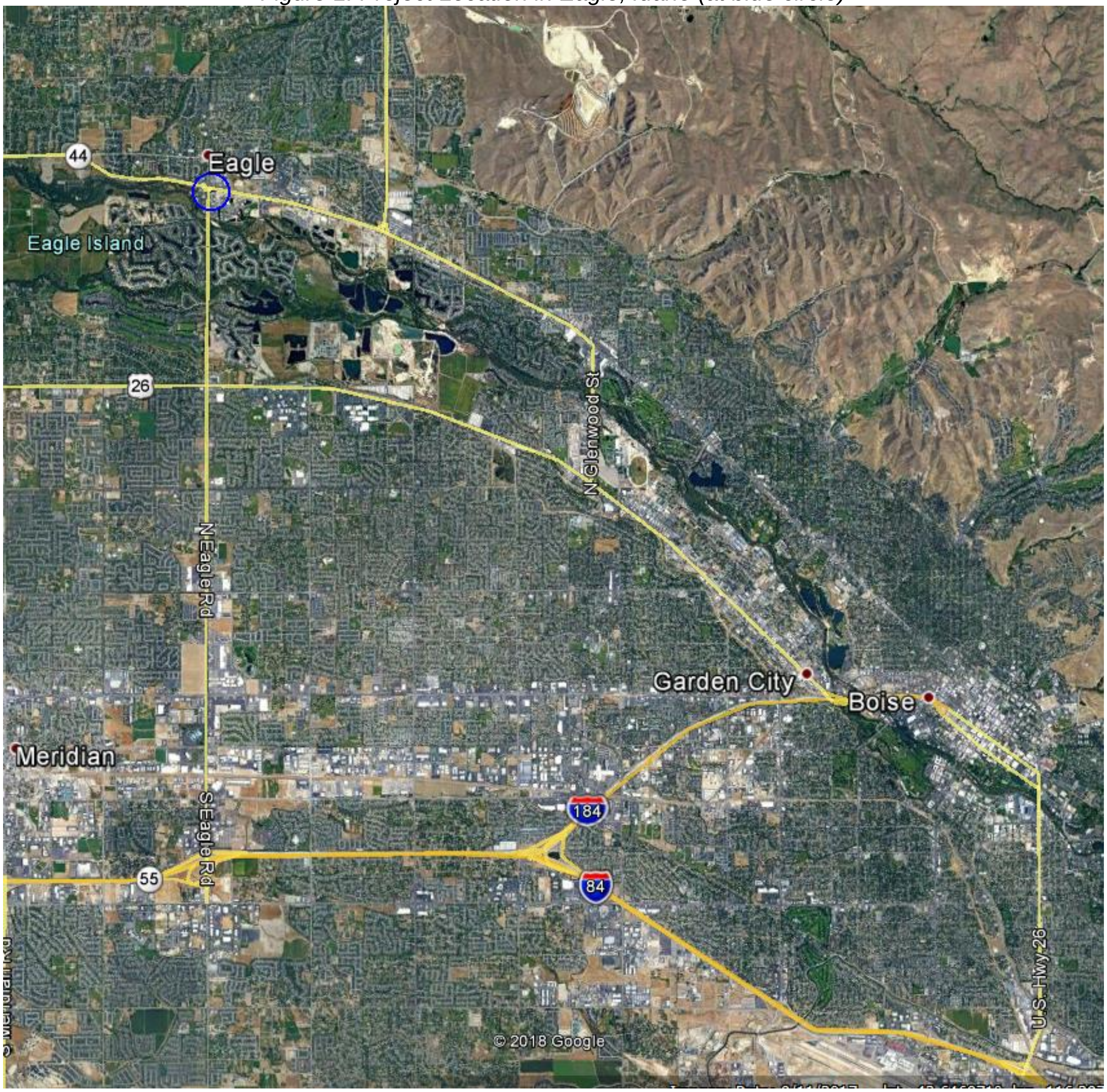
The air quality study area for this analysis is the area within a 500-foot radius of the intersection of SH-44 and SH-55. There are no other signalized intersections within this study area, so the links and receptors assessed for this analysis are focused on just this one intersection. A closer view of the existing intersection is provided in Figure 2.

For the 2040 design year, with implementation of the proposed CFI intersection configuration, the LOS for the peak hour traffic is assessed as D at this intersection for the afternoon (PM) peak period. Transportation Conformity hot-spot requirements are triggered when LOS is D or worse or will change to D or worse with project implementation. For the morning (AM) peak period, the LOS is assessed as C, so only the PM peak hour is analyzed for this study.

1.2 Purpose of Analysis

This analysis will support a determination that the proposed project would not cause or contribute to unacceptable air quality in the project vicinity, and will provide appropriate documentation of potential air quality impacts as required under the National Environmental Policy Act (NEPA) and Transportation Conformity rules (40 CFR 93, Subpart A). The analysis presented in this document supports the preparation of categorical exclusion documentation under NEPA. Additional detail regarding air quality regulatory requirements and the hot-spot analysis methodology and results is provided in the following sections of this report. The air quality analysis provided demonstrates that the project would have minimal impacts to air quality.

Figure 1. Project Location in Eagle, Idaho (at blue circle)



Source: Google Earth 2018

Figure 2. Existing Intersection at SH-44 and SH-55

Source: Google Earth 2018

2.0 Affected Environment and Regulatory Framework

2.1 Current Air Quality Standards and Guidelines

In accordance with the requirements of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (USEPA) has promulgated NAAQS for pollutants considered harmful to public health and the environment. The CAA established primary and secondary types of NAAQS. Primary standards set limits to protect public health, including the health of sensitive populations, such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

The USEPA's Office of Air Quality Planning and Standards has set NAAQS for seven principal pollutants, which are called criteria pollutants, as shown in Table 1. These pollutants are CO, nitrogen dioxide (NO_2), ozone (O_3), lead (Pb), PM_{10} (particulate matter smaller than 10 microns in diameter), $PM_{2.5}$, (particulate matter smaller than 2.5 microns in diameter), and sulfur dioxide (SO_2).

The Idaho Administrative Rules provide for the control of air pollution in Idaho, under rules of the Idaho Department of Environmental Quality (IDEQ), Idaho Administrative Procedures Act (IDAPA) 58.01.01, "Rules for the Control of Air Pollution in Idaho." Under Section 107.03.b of these rules, the State of Idaho has adopted the NAAQS by reference as applicable ambient air quality standards for the state. The State of Idaho has also adopted its own ambient air quality standards for fluorides, acceptable ambient concentrations (AAC) for numerous non-carcinogenic substances, and acceptable ambient concentrations for carcinogens (AACC) for numerous carcinogenic substances. In addition to the criteria pollutants, also of concern from transportation activities are impacts from non-criteria mobile source air toxics (MSAT) pollutants and greenhouse gases (GHGs).

Table 1. NAAQS

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
Carbon monoxide (CO)	Primary	8-hour average	9 ppm	Not to be exceeded more than once per year
		1-hour average	35 ppm	
Lead (Pb)	Primary and secondary	Rolling 3-month average	0.15 $\mu g/m^3$ [a]	Not to be exceeded
Nitrogen dioxide (NO_2)	Primary	1-hour average	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Primary and secondary	Annual average	53 ppb [b]	Annual mean
Ozone (O_3)	Primary and secondary	8-hour average	0.070 ppm [c]	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particulate matter ($PM_{2.5}$)	Primary	Annual average	12 $\mu g/m^3$	Annual mean, averaged over 3 years
	Secondary	Annual average	15 $\mu g/m^3$	Annual mean, averaged over 3 years
	Primary and secondary	24-hour average	35 $\mu g/m^3$	98th percentile, averaged over 3 years
Particulate matter (PM_{10})	Primary and secondary	24-hour average	150 $\mu g/m^3$	Not to be exceeded more than once per year averaged over 3 years
Sulfur dioxide (SO_2)	Primary	1-hour average	75 ppb [d]	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	3-hour average	0.5 ppm	Not to be exceeded more than once per year

ppm = parts per million ppb = parts per billion µg/m3 = micrograms per cubic meter

PM_{10} = particulate matter 10 microns in diameter or less $PM_{2.5}$ = particulate matter 2.5 microns in diameter or less

a Final rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated non-attainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

b The official level of the annual NO2 standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.

c Final rule published in Federal Register on October 26, 2015. The 2008 ozone standard (0.075 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. USEPA revoked the prior 1997 8-hour ozone NAAQS (0.080 ppm, annual 4th high daily max) and prior 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under those standards ("anti-backsliding").

d Final rule signed June 2, 2010. The 1971 annual and 24-hour SO2 standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

IDEQ implements and enforces the NAAQS by developing state implementation plans (SIPs) and maintenance plans to ensure they are not violated. Metropolitan planning organizations (MPOs) produce transportation improvement programs (TIPs) and regional long-range transportation plans. In this case, the relevant MPO is the Community Planning Association of Southwest Idaho (COMPASS). The MPO must also demonstrate compliance to NAAQS via regional emissions analyses. COMPASS has included the proposed project in its regional emissions analyses and has included it in its approved 2017-2021 TIP (COMPASS 2016).

Federally-funded or locally-funded and regionally significant transportation projects are also required to demonstrate compliance with the NAAQS. The process of determining compliance with the NAAQS is referred to as air quality "conformity."

The USEPA has also identified MSAT and GHG pollutants in addition to criteria pollutants. GHGs include carbon dioxide, methane, and nitrous oxide and are believed to contribute to climate change. MSATs refer to a group of 93 compounds emitted from mobile sources, with seven of them being the most significant for on-road mobile sources. Often, it is the following seven compounds that are referred to as MSATs:

- Acrolein,
- Benzene,
- 1,3-butidiene,
- Diesel particulate matter and exhaust gases (diesel PM),
- Formaldehyde,
- Naphthalene, and
- Polycyclic organic matter.

2.2 Regulatory Setting

The CAA defines nonattainment areas as geographic regions that have been designated as not meeting one or more of the NAAQS, and maintenance areas as former non-attainment areas that subsequently demonstrated compliance with the standards. Ada County, which encompasses the Project Area in the City of Eagle, is designated as a maintenance area for the 24-hour PM_{10} NAAQS and as a maintenance area for CO.

2.2.1 Federal Conformity Rules

The CAA Amendments of 1990 and the Final Transportation Conformity Rule (40 CFR Parts 51 and 93) direct the USEPA to implement environmental policies and regulations that will ensure acceptable levels of air quality. The Transportation Conformity rules (40 CFR 93, Subpart A) affect the funding and approval of proposed transportation projects. According to Title I, Section 176 (c) 2:

> *No federal agency may approve, accept or fund any transportation plan, program or project unless such plan, program or project has been found to conform to any applicable State Implementation Plan (SIP) in effect under this act.*

Projects and approvals other than those for certain transportation (highway and transit) projects funded or approved by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA) are subject to General Conformity rules (40 CFR 93, Subpart B).

Section 176(c)1(A) of the CAA defines conformity as follows:

Conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards; and that such activities will not:

- *Cause or contribute to any new violation of any NAAQS in any area;*
- *Increase the frequency or severity of any existing violation of any NAAQS in any area; or*
- *Delay timely attainment of any NAAQS or any required interim emission reductions or other milestones in any area.*

Under the Transportation Conformity rules, the FHWA, FTA, and state transportation agencies receiving their funding and/or approval for roadway and transit projects must ensure that any emissions caused by such funding or approval of proposed projects, are in compliance with Transportation Conformity requirements. The Transportation Conformity requirements for a given project are twofold:

1) Show that the proposed project will not cause emissions in excess of an applicable air quality attainment or maintenance plan (i.e., in excess of an established emissions budget) under the SIP for the area, or

2) Cause localized hot-spot concentrations of CO, PM_{10}, or $PM_{2.5}$ that would exceed the NAAQS or exacerbate concentrations in any area with air quality levels worse than the NAAQS.

2.2.2 State Rules for Transportation Activities

There are two portions of the Idaho Administrative Code that pertain to transportation projects; Sections 563 through 574 (Air Quality Conformity and Interagency Consultation) and Sections 650 through 652 (Control of Fugitive Dust).

Sections 563 through 574 implement and adopt the federal requirements (described above) related to conformity of federally-funded transportation plans, programs, and projects to SIPs required under the CAA. The general process for developing a conformity demonstration for transportation plans, programs, or projects is outlined by these sections of the code.

Sections 650 through 652 require that all reasonable precautions be taken to prevent particulate matter from becoming airborne. Control measures (i.e., best management practices or BMPs) for fugitive dust emissions include the following:

- Spraying disturbed on-site soil with water as necessary.
- Wetting materials hauled in trucks, providing adequate freeboard (space from the top of the material to the top of the truck), or covering loads to reduce emission during material transportation/handling.
- Providing wheel washers at site accesses to prevent track-out onto adjacent roadways.
- Removing tracked-out materials deposited onto adjacent roadways.
- Wetting or covering material stockpiles to prevent wind-blown emissions.
- Establishing vegetative cover on bare ground as soon as possible after it is disturbed.

Mitigation for construction-related pollutants other than fugitive dust is not generally required.

2.2.3 State Implementation Plan

The CAA requires that a SIP be prepared for each nonattainment area, and a maintenance plan be prepared for each former non-attainment area. The SIP outlines how the state will meet the NAAQS under the deadlines established by the CAA. In addition, USEPA's Transportation Conformity Rule requires MPOs (locally, COMPASS) and the FHWA to make conformity determinations on projects before they are approved. Conformity for purposes of a SIP means that transportation activities would not cause new air quality violations, worsen existing violations, or delay timely attainment of the NAAQS.

2.2.4 Pollutants Analyzed

Of the seven criteria pollutants, CO and PM_{10} are considered the pollutants of greatest interest for localized impacts from roadway projects in Ada County, such as the proposed improvements at the intersection of SH-44 and SH-55. Ambient concentrations of Pb, O_3, SO_2, $PM_{2.5}$ and NO_2 are not likely to be significantly affected by the proposed project and are not discussed further in this report.

CO is analyzed because the study area is designated as a CO maintenance area. Transportation Conformity rules under 40 CFR 93, Subpart A, require that CO be addressed for potential hot spot impacts for projects in CO nonattainment and maintenance areas.

CO is generated in the urban environment primarily by the incomplete combustion of fossil fuels in motor vehicles, and CO concentrations can vary greatly over relatively short distances. Relatively high concentrations of CO can be found near congested intersections and along heavily-used roadways carrying slow-moving traffic.

PM_{10} is qualitatively analyzed because the study area is designated as a PM_{10} maintenance area. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when gases emitted from motor vehicles and industrial sources undergo chemical reactions in the atmosphere. Major sources of PM_{10} include motor vehicles; wood-burning stoves and fireplaces; dust from construction, landfills and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

Other pollutants that can impact human health are generated by diesel and gasoline-fueled vehicles, are classified as MSATs, and have been assessed qualitatively below.

In addition, GHG emissions are assessed in line with NEPA requirements for the transportation projects. GHG are of global concern because of their heat trapping quality that can affect climate. Anthropogenic GHG emissions are mainly associated with the fossil fuel combustion by power plants, industrial facilities, commercial and institutional facilities, residential heating, and engines used in the transportation of goods and people. According to the USEPA, GHG inventories for the last decade consistently demonstrate that GHG emissions from transportation constitute about one-third of all GHG emissions in the United States (U.S.). The Proposed Action could contribute to GHG emissions. However, in the context of comparing no action to the Proposed Action, the project could actually help minimize GHG emissions.

2.2.5 Existing Air Quality

Monitored concentrations of the two maintenance status criteria pollutants, CO and PM_{10}, for the last three calendar years are summarized in Table 2, based on data downloaded from the USEPA's AirData web site (https://www.epa.gov/outdoor-air-quality-data).

There are currently two monitors for CO in the Boise area, one in downtown Boise, on a parking ramp structure, and another at a site in Meridian, a suburb west of Boise. Because the Meridian monitor location is much more representative of the project site, these data are listed in Table 2. The PM_{10} data in Table 2 are from the only currently-operating PM_{10} monitor in Ada County as listed in USEPA's database, which is located at Fire Station #5, at 16th and Front Streets, on the northwest side of downtown Boise.

For each pollutant and averaging period shown in Table 2, the listed concentrations are the second highest value in the year, given that the NAAQs for each of these standards allows one exceedance per year. Thus, the second highest values are compared with the NAAQS to determine compliance. In addition, for CO and PM_{10}, USEPA uses the average of the second high values over the most recent 3 years to determine whether an area is complying with the NAAQS.

The CO data in Table 2 show that concentrations are an order of magnitude or more lower than the NAAQS. The PM_{10} 3-year average is a bit over half of the NAAQS. Note that for 2017, the PM_{10} value listed is the second highest value remaining after exclusion of some "exceptional events." USEPA does not hold local/state air pollution control agencies responsible for control of emissions that are attributed to events beyond their control, such as wildfires, high wind events, volcanoes, etc.

Table 2. Monitored Concentrations for the Past 3 Calendar Years

Pollutant	Averaging Period	Conc. Units	Second High Concentration				NAAQS
			2015	2016	2017	Average	
CO	1-hour	ppm	1.3	1.4	0.9	1.2	35
CO	8-hour	ppm	1.0	0.9	0.7	0.9	9
PM10	24-hour	µg/m^3	91	72	77	80.0	150

3.0 Environmental Consequences

3.1 Microscale CO Impacts Analysis Methodology and Results

A CO microscale or "hot-spot" analysis is focused on signalized intersections, which represent the greatest potential for impact on CO concentrations, because of relatively higher emissions from idling cars as opposed to moving cars. Therefore, this evaluation does include a microscale CO analysis of the affected intersection.

Screening analysis is based on the 40 CFR 93.123 (a) requirements for the CO hot-spot analysis and follow USEPA *Guidelines for Modeling CO from Roadway Intersections* (USEPA 1992). According to 40 CFR 93.123 (a)(1)(ii), if the LOS at an intersection is D or worse, or changes to D or worse as a result of a project, there is a potential for CO impacts at the intersection. A CO hot-spot analysis for the intersection would be required to determine whether the intersection is causing an adverse CO impact at the nearby sensitive land uses. The other requirements of this regulation are connected with the hot-spot sites or the highest volume and worst LOS top three intersections identified in the SIP. If the LOS is C or better at an intersection and other CFR requirements are met, the intersection impact on CO levels is not considered significant.

As described in Section 1.1, this evaluation assessed the SH-44 and SH-55 signalized intersection in a single modeling analysis for the PM peak period, using USEPA's Motor Vehicle Emissions Simulator (MOVES, version 2014a) emissions model and CAL3QHC (version 2.0, dated 95221) screening dispersion model, to estimate maximum CO concentrations at public receptor locations near this intersection. This study modeled only the 2040 (design year) build alternative. Given that the build alternative shows compliance with the NAAQS, there is no need to assess the no-build alternative.

This project uses analysis methodology developed in consultation with the applicable resource agencies per IDAPA 58.01.01.563, including the MPO (COMPASS), ITD, and prior guidance from IDEQ. MOVES and CAL3QHC were selected as the models for generating emissions factors and conducting the dispersion modeling, respectively. MOVES was selected for the analysis because it provides results that are consistent with current regional conformity demonstrations. CAL3QHC was selected for dispersion modeling because the project only requires quantitative analysis of CO impacts.

Project-specific input data and assumptions for both MOVES and CAL3QHC runs were collected from several sources including aerial imagery, USEPA/FHWA guidance documents, regional emissions analyses, and traffic modeling conducted for the project (VISSIM and SYNCHRO output files were provided by the traffic team). The models used model defaults when project specific data were either not available or not practical. Appendix A contains a matrix of modeling assumptions.

The MOVES emission factors for input to CAL3QHC were obtained by running the MOVES 2014a model for the various predicted average speeds on each roadway approach and departure link (roadway section) for the intersection, as well as for idling conditions. COMPASS provided vehicle age, type, inspection and maintenance program, and other local data for running MOVES in spreadsheet format, based on their recently completed regional emissions modeling with MOVES (COMPASS 2018).

A “screening level” approach was used to estimate the project’s ambient impacts with the CAL3QHC dispersion model. This level of analysis uses artificial, worst-case meteorological data to determine the worst-case CO impacts. Worst case meteorological data includes a mixing height of 1,000 meters and 1 meter per second wind speeds from 36 directions (10 degree increments). A listing of the meteorological assumptions used in the modeling is provided in Appendix A. For the Treasure Valley, ambient CO concentrations are at their highest level during the winter months due to the stagnation conditions that accompany valley-wide atmospheric temperature inversions. Therefore, average meteorological conditions for Boise in January were used. Background CO concentrations for the analysis were set to the design (second high) values shown in Table 2.

A graphic depicting the layout of roadway free-flow links, queue links, and receptor locations input to CAL3QHC, as well as the model input and output file listings from the CAL3QHC run, is included in Appendix A of this document.

As shown in Table 3, the maximum modeled 1-hour and 8-hour CO concentrations, with the addition of background concentrations, are well below the CO NAAQS. The maximum modeled 1-hour concentration, including background, is 1.4 ppm, compared to the NAAQs of 35 ppm. The maximum modeled 8-hour concentration, including background, is 1.0 ppm, compared to the NAAQs of 35 ppm. Therefore, project-level conformity has been demonstrated for CO and no violation of the CO NAAQS is expected to result from the proposed project.

Table 3. Modeled CO Concentrations vs. NAAQS

Intersection—2040 PM Peak Hour	1-Hour CO Result (ppm)				8-Hour CO Result (ppm)[a]			
	Modeled	Background	Total	NAAQS	Modeled	Background	Total	NAAQS
SH-44 and SH-55	0.2	1.2	1.4	35	0.12	0.9	1.0	9

a 8-hour modeled concentrations are estimated based on an IDEQ-recommended persistence factor of 0.6.

3.2 Particulate Matter Impacts Screening

Particulate matter screening is based on 40 CFR 93.123 (b). The analysis was conducted following 40 CFR 93.104 and USEPA's *Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in* $PM_{2.5}$ *and* PM_{10} *Nonattainment and Maintenance Areas* (USEPA 2015). According to these documents, a quantitative particulate matter analysis should be conducted on projects that are (as applicable to the Proposed Action) affecting intersections with LOS D or worse with a significant number of diesel vehicles, or intersections that change to LOS D or worse because of an increase in traffic volumes from a significant number of diesel vehicles related to the project. The Project Area is not expected to have any major origins or destinations for diesel truck traffic related to the project. Therefore, significant PM_{10} impacts are not anticipated, and a quantitative hot-spot analysis for particulate matter, specifically PM_{10}, is not required.

3.3 Mobile Source Air Toxics Impacts

In addition to the criteria pollutants for which there are NAAQS, USEPA also regulates air toxics. Toxic air pollutants are those pollutants known or suspected to cause cancer or other serious health effects. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

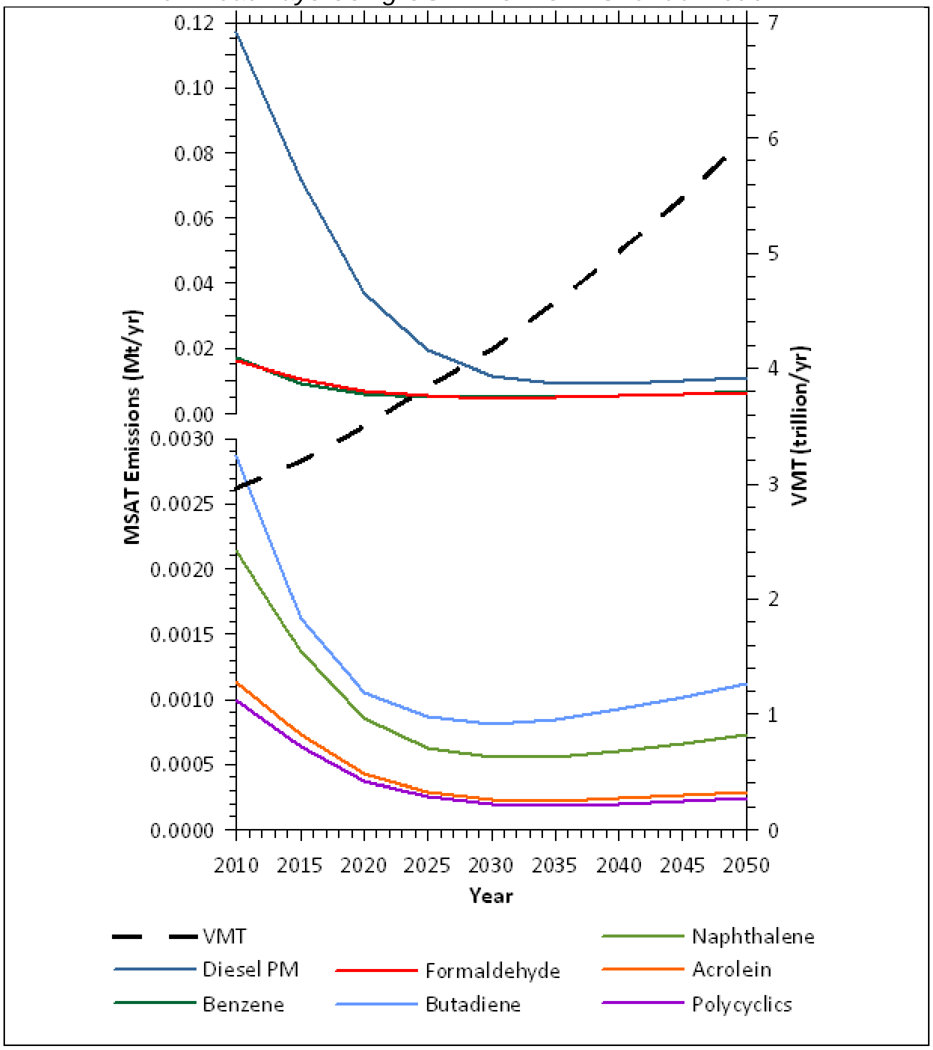
The CAA identifies 188 air toxics. The USEPA assessed this expansive list in their final rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007 (USEPA 2007) and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (http://www.epa.gov/ncea/iris/index.html). In addition, USEPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxic Assessment. These MSATs are acrolein, benzene, 1,3-butadiene, diesel particulate matter plus diesel exhaust organic gases, formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the MSATs of concern, the list is subject to change and may be adjusted in consideration of future USEPA rules. The 2007 USEPA rule mentioned requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines.

Based on an FHWA analysis using USEPA's MOVES2010b model, as shown in Figure 3, even if vehicle miles traveled (VMT) increases by 102 percent, as assumed from 2010 to 2050, a combined reduction of 83 percent in the total annual emissions for the priority MSAT is projected for the same time period.

The Proposed Action is considered to be of low potential MSAT effect because it does not create or significantly alter any intermodal freight facilities or aggregate a significant volume of diesel vehicles; and does not add significant capacity to or create an urban highway with average annual daily traffic 150,000 or higher in the vicinity of populated areas.

For any given calendar year, the increase in VMT in the project corridor with project implementation would result in slightly higher MSAT emissions than the No-Action Alternative in the study area. However, the magnitude of USEPA-projected reductions in MSATs is so great (Figure 3) even after accounting for the VMT growth that project area and urban area MSAT emissions will tend to be much lower in the future than they are today.

Figure 3. National MSAT Emission Trends 1999-2050 for Vehicles Operating on Roadways Using USEPA's MOVES2010b Model



Source: USEPA MOVES2010b model runs conducted during May through June 2012 by FHWA.

Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.

3.4 GHG Emissions/Impacts

Transportation is the fastest-growing source of GHG emissions nationally and releases the largest amount of CO_2 into the atmosphere. Currently, federal rules and regulations limit new vehicle emissions, fuel economy, and fuel formulation thereby controlling emissions of GHG to some extent. Additionally, USEPA promotes strategies that reduce transportation-related GHG emissions and save fuel. Efforts include USEPA's Clean Automotive Technology research program and a wide range of voluntary programs to encourage efficient transport of people and goods. Also, USEPA's *Green Vehicle Guide* helps consumers do their part to reduce GHG emissions by providing information on selecting clean, fuel-efficient vehicles.

Regulating vehicle fuel economy is the responsibility of the National Highway Traffic Safety Administration (NHTSA) and the USEPA. NHTSA sets the fuel economy standards for passenger vehicles sold in the U.S. while USEPA calculates the average fuel economy for a given vehicle model and year. USEPA is also responsible for promulgating regulations to ensure that gasoline sold contains a minimum volume of renewable fuel.

Congress first enacted fuel economy standards in 1975 to reduce energy consumption by increasing the fuel economy of cars and light trucks. In March 2006, NHTSA established revised fuel economy standards for light trucks and sport utility vehicles. A phased-in implementation of these new standards began in model year 2008 with full implementation by model year 2011. It is anticipated these fuel economy standards will reduce GHG emissions by saving 10.7 billion gallons of fuel nationally.

Likewise, in May 2007, USEPA published the Renewable Fuel Standard and established the Renewable Fuel Standard Program (RFS2). RFS2 increases the volume of renewable fuel required to be blended into traditional fuels. A renewable fuel is defined by the Federal Energy Policy Act as a motor vehicle fuel that is produced from plant or animal products or wastes (e.g., ethanol and biodiesel), as opposed to fossil fuel sources. According to the Renewable Fuels Association, ethanol use in the U.S. reduced GHG emissions by approximately 10.1 million tons in 2007. Studies conducted by the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) have shown biodiesel reduces CO_2 emissions by up to 75 percent when compared to petroleum diesel.

In April 2010, the USEPA and NHTSA jointly issued national light-duty GHG and fuel economy standards, producing the first-ever GHG emissions standards for passenger cars, light-duty trucks, and medium-duty passenger vehicles under the CAA and the Energy Policy and Conservation Act. Both proposals established a national program of new standards for passenger cars, light-duty trucks, and medium-duty passenger vehicles model years 2012 through 2016. They require vehicles to meet an average emissions level of 250 grams of CO_2 per mile in model year 2016, or 35.5 miles per gallon (mpg) through fuel economy improvements. These standards were extended for model years 2017 through 2025 in August of 2012.

Similarly, in September of 2011, the USEPA and NHTSA adopted a program to reduce GHGs from medium and heavy-duty vehicles. The adopted standards cover model years 2014 through 2018 for three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans; and vocational vehicles.

These categories cover on-road vehicles with gross vehicle weights (GVW) at or above 8,500 pounds. In total, the combined standards will reduce GHG emissions from this segment of the on-road vehicle fleet by approximately 76 million metric tons of CO_2-equivalent annually by 2030. In July of 2015, USEPA and NHTSA published a proposed rule to implement Phase 2 of these standards. Phase 2 would set new, more stringent standards for vehicles in this classification. Implementation of the new standards would be incremental, starting in model year 2021 with full implementation by model year 2027. It is estimated Phase 2 will cut GHG emissions by approximately 984 million tons over the lifetime of vehicles sold.

3.5 Construction Impacts

Construction of the CFI build option for the SH-44 and SH-55 intersection would be broken into separate phases over a period of several years. During each phase, ITD intends to maintain at least one-lane of traffic in each direction of travel on SH-44 and SH-55 during peak periods. Delays associated with travel through construction zones would increase emissions from on-road vehicles. However, these temporary delays or travel time increases would only result in a small amount of additional pollutant emissions when compared with the typical (i.e., non- construction) operating conditions. Construction delays could be mitigated by keeping a portion of the roadway/intersection open at all times and halting construction activities during peak travel times.

3.5.1 Relevant Construction Activities

Construction activities would temporarily emit several air pollutants. PM_{10} emissions are associated with dust created from demolition, land clearing, ground excavation, cut-and-fill operations, and road construction. Other pollutants ($PM_{2.5}$, CO, SO_X, NO_X, MSAT, and GHG) are generated from heavy-duty diesel engines used by construction equipment and vehicles.

Emissions from construction of the improved intersection would vary from day to day and year to year, depending on the project phase, work being done, equipment used, and weather conditions. Soil moisture, silt content of soil, wind speed, and amount of equipment operating in an area would impact the amount of dust generated from the site. With appropriate mitigation (see Section 3.5.2), no adverse air quality impacts are expected due to construction activities.

3.5.2 Mitigation of Construction Emissions

The amount of PM_{10} emitted from the site would be minimized using BMPs for construction. BMPs would be necessary to comply with IDEQ's regulations for controlling fugitive dust during construction.

Trucks and construction equipment emissions powered by heavy-duty diesel engines would be temporary and concentrated around the construction site. The amount of criteria, MSAT, and GHG pollutants emitted from these vehicles and equipment would depend on many factors, including the amount and type of fuel consumed, the age of the engines used by the vehicles/equipment, and the type of emissions control equipment installed (if any). Specific mitigation measures for construction equipment are not required by IDEQ. However, as part of the contract, construction companies could be required to use newer, more efficient diesel engines, use certain types of fuels (e.g., B20), install pollution control equipment (e.g., particulate traps and/or oxidation catalysts), and/or limit engine idling.

4.0 References

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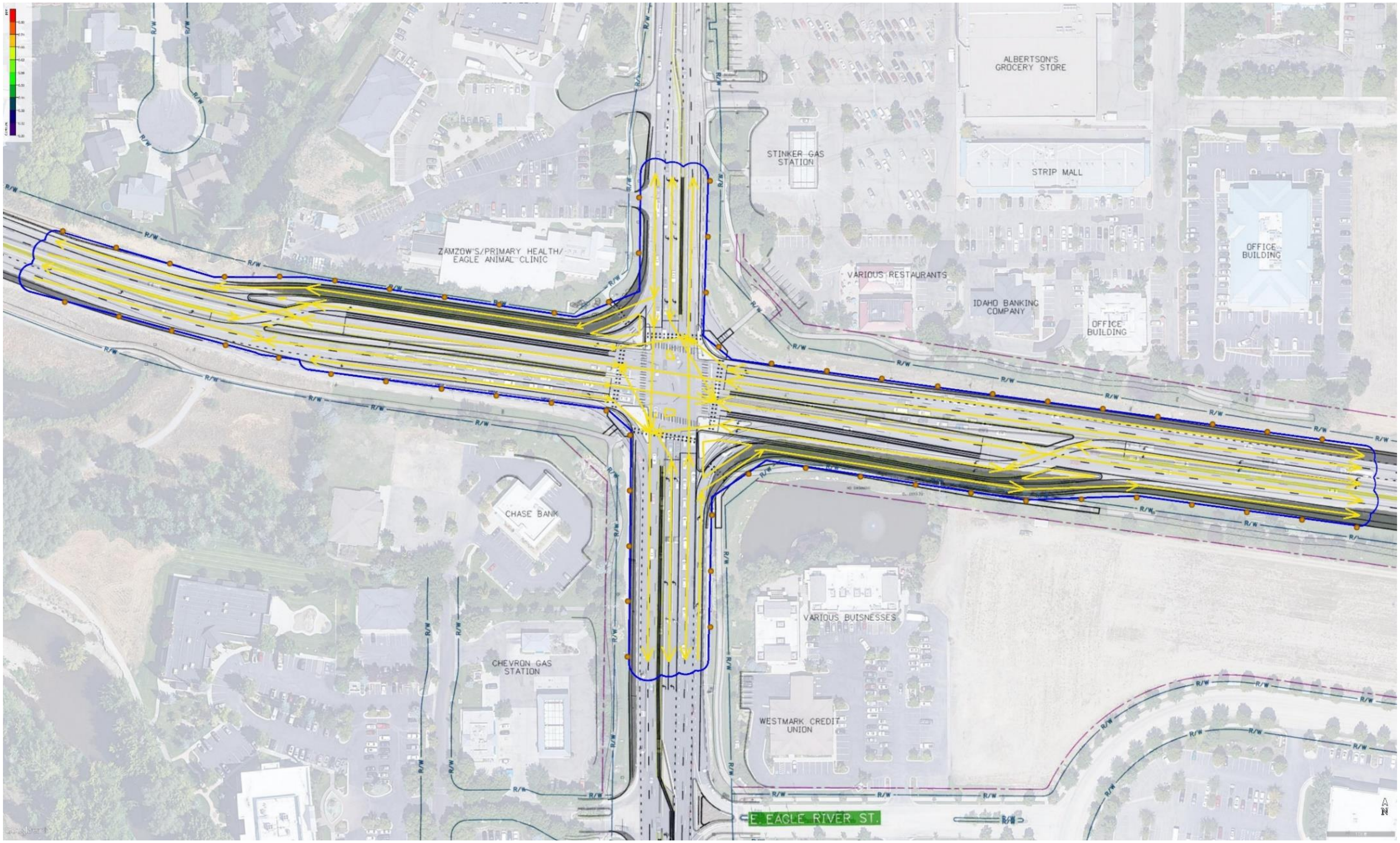
Appendix A.
CO Hot-Spot Analysis—Technical Backup

MOVES 2014A Fleet Average Emission Factors

year	Road TypeID*	link AvgSpeed	Moving EF (grams/veh-mile)
2018	5	19.5	1.13
2018	5	22.1	1.02
2018	5	23.1	0.98
2018	5	23.7	0.96
2018	5	25	0.92
2018	5	25.8	0.91
2018	5	31.5	0.89
2018	5	32.1	0.88
2018	5	33.4	0.86
2018	5	34.5	0.84
2018	5	35.2	0.83
2018	5	35.5	0.83
2018	5	36.6	0.82
2018	5	42	0.77
2018	5	43.7	0.75
2018	5	44.4	0.75
2018	5	49.6	0.75
2018	5	52.9	0.74
			Idling EF (grams/veh-hr)
2018	NA	idling	1.66

*5 = Urban Unrestricted

CAL3QHC - Input Geometry: Free Flow & Queue Links (arrows), Receptors (green dots), Mixing Zones (blue bubbles)



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U = 1.0 M/S CLAS = 5 (E) ATIM = 60. MINUTES MIXH = 1000. M AMB = 0.0 PPM

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8. Link_8	551887.81	4837792.00	551845.56	4837792.00	42.	270.	AG	210.	0.8	0.0	9.4		
9. Link_9	552009.69	4837775.50	551887.81	4837792.00	123.	278.	AG	210.	0.8	0.0	9.4		
10. Link_10	552044.44	4837789.50	552009.69	4837775.50	37.	248.	AG	210.	0.8	0.0	9.4		
11. Link_11	552044.56	4837844.50	552044.44	4837789.50	55.	180.	AG	210.	0.8	0.0	13.3		
12. Link_12	552044.56	4837844.50	552044.31	4837775.50	69.	180.	AG	800.	1.0	0.0	12.7		
13. Link_13	552052.12	4837843.00	552051.56	4837779.00	64.	181.	AG	130.	0.9	0.0	13.3		
14. Link_14	552363.62	4837720.50	552077.56	4837757.00	288.	277.	AG	220.	0.8	0.0	9.4		
15. Link_15	552362.50	4837715.00	552076.62	4837752.00	288.	277.	AG	1130.	0.8	0.0	13.3		
16. Link_16	552362.12	4837708.00	552234.12	4837724.50	129.	277.	AG	720.	0.9	0.0	12.7		
17. Link_17	552234.12	4837724.50	552201.94	4837713.00	34.	250.	AG	720.	0.9	0.0	12.7		
18. Link_18	552201.94	4837713.00	552074.19	4837732.00	129.	278.	AG	720.	1.0	0.0	13.3		
19. Link_19	552262.31	4837706.50	552361.88	4837694.00	100.	97.	AG	1000.	0.8	0.0	9.4		
20. Link_20	552211.62	4837704.50	552262.31	4837706.50	51.	88.	AG	1000.	0.8	0.0	9.4		
21. Link_21	552094.19	4837721.50	552211.62	4837704.50	119.	98.	AG	1000.	0.8	0.0	9.4		
22. Link_22	552066.38	4837702.50	552094.19	4837721.50	34.	56.	AG	1000.	0.8	0.0	9.4		
23. Link_23	552065.31	4837626.50	552066.38	4837702.50	76.	1.	AG	1000.	0.8	0.0	9.4		
24. Link_24	552059.75	4837627.00	552060.56	4837719.50	93.	1.	AG	910.	1.0	0.0	13.0		
25. Link_25	552052.31	4837626.00	552052.88	4837716.00	90.	0.	AG	590.	1.1	0.0	13.3		
26. Link_26	552025.62	4837743.50	552043.00	4837728.50	23.	131.	AG	370.	0.8	0.0	9.4		
27. Link_27	552025.19	4837749.50	552072.56	4837742.50	48.	98.	AG	810.	0.8	0.0	13.3		
28. Link_28	552027.62	4837766.50	552059.94	4837771.50	33.	81.	AG	150.	0.8	0.0	9.4		
29. Link_29	552044.31	4837775.50	552043.00	4837728.50	47.	182.	AG	800.	1.0	0.0	12.7		
30. Link_30	552051.56	4837779.00	552072.56	4837742.50	42.	150.	AG	130.	0.9	0.0	13.3		
31. Link_31	552077.56	4837757.00	552059.94	4837771.50	23.	309.	AG	220.	0.8	0.0	9.4		

32. Link_32	*	552076.62	4837752.00	552029.06	4837758.50	*	48.	278.	AG	1130.	0.8	0.0	12.7		
33. Link_33	*	552074.19	4837732.00	552043.00	4837728.50	*	31.	264.	AG	720.	1.0	0.0	13.3		
34. Link_34	*	552060.56	4837719.50	552059.94	4837771.50	*	52.	359.	AG	910.	1.0	0.0	12.7		
35. Link_35	*	552052.88	4837716.00	552029.06	4837758.50	*	49.	331.	AG	590.	1.1	0.0	12.7		
36. Link_36	*	552072.56	4837742.50	552216.69	4837721.00	*	146.	98.	AG	940.	0.9	0.0	13.3		
37. Link_37	*	552216.69	4837721.00	552363.19	4837700.50	*	148.	98.	AG	940.	0.7	0.0	13.3		
38. Link_38	*	552043.00	4837728.50	552042.88	4837626.00	*	103.	180.	AG	1890.	0.8	0.0	17.0		
39. Link_39	*	552029.06	4837758.50	551885.06	4837778.50	*	145.	278.	AG	1720.	0.8	0.0	12.7		
40. Link_40	*	551771.62	4837806.50	551885.06	4837778.50	*	117.	104.	AG	1720.	0.7	0.0	12.7		
41. Link_41	*	552059.94	4837771.50	552061.62	4837842.50	*	71.	1.	AG	1280.	0.9	0.0	13.3		
42. Link_42	*	552025.19	4837749.50	551974.25	4837755.50	*	51.	277.	AG	5.	100.0	0.0	7.3	0.67	8.6
43. Link_43	*	551858.00	4837778.00	551832.38	4837785.00	*	27.	285.	AG	4.	100.0	0.0	3.3	0.64	4.4
44. Link_44	*	551885.06	4837778.50	551927.62	4837772.50	*	43.	98.	AG	2.	100.0	0.0	6.7	0.74	7.2
45. Link_45	*	552027.62	4837766.50	552001.38	4837770.00	*	27.	278.	AG	4.	100.0	0.0	3.3	0.64	4.4
46. Link_46	*	552044.31	4837775.50	552044.56	4837844.00	*	69.	0.	AG	6.	100.0	0.0	6.7	0.93	11.4
47. Link_47	*	552051.56	4837779.00	552051.69	4837791.50	*	12.	1.	AG	8.	100.0	0.0	7.3	0.53	2.1
48. Link_48	*	552076.62	4837752.00	552157.38	4837741.50	*	81.	97.	AG	5.	100.0	0.0	7.3	0.94	13.6
49. Link_49	*	552234.12	4837724.50	552290.25	4837717.50	*	57.	97.	AG	6.	100.0	0.0	6.7	0.86	9.4
50. Link_50	*	552216.69	4837721.00	552181.81	4837726.00	*	35.	278.	AG	3.	100.0	0.0	7.3	0.48	5.9
51. Link_51	*	552074.19	4837732.00	552385.31	4837685.50	*	315.	98.	AG	7.	100.0	0.0	7.3	1.27	52.4
52. Link_52	*	552060.56	4837719.50	552060.00	4837658.00	*	61.	181.	AG	6.	100.0	0.0	7.0	0.84	10.2
53. Link_53	*	552052.88	4837716.00	552052.00	4837571.50	*	144.	180.	AG	7.	100.0	0.0	7.3	1.09	24.1
54. Link_54	*	552025.62	4837743.50	551979.12	4837749.00	*	47.	277.	AG	3.	100.0	0.0	3.3	0.61	7.8
55. Link_55	*	552077.56	4837757.00	552105.19	4837753.50	*	28.	98.	AG	3.	100.0	0.0	3.3	0.36	4.6

ADDITIONAL QUEUE LINK PARAMETERS

LINK DESCRIPTION	*	CYCLE LENGTH (SEC)	RED TIME (SEC)	CLEARANCE LOST TIME (SEC)	APPROACH VOL (VPH)	SATURATION FLOW RATE (VPH)	IDLE EM FAC (gm/hr)	SIGNAL TYPE	ARRIVAL RATE
42. Link_42	*	130	76	3.0	810	1600	1.66	2	3
43. Link_43	*	130	106	3.0	150	1600	1.66	2	3
44. Link_44	*	130	30	3.0	1720	1600	1.66	2	3
45. Link_45	*	130	106	3.0	150	1600	1.66	2	3
46. Link_46	*	130	90	3.0	800	1600	1.66	2	3
47. Link_47	*	130	115	3.0	130	1600	1.66	2	3
48. Link_48	*	130	76	3.0	1130	1600	1.66	2	3
49. Link_49	*	130	91	3.0	720	1600	1.66	2	3
50. Link_50	*	130	45	3.0	940	1600	1.66	2	3
51. Link_51	*	130	102	3.0	720	1600	1.66	2	3
52. Link_52	*	130	81	3.0	910	1600	1.66	2	3
53. Link_53	*	130	103	3.0	590	1600	1.66	2	3
54. Link_54	*	130	76	3.0	370	1600	1.66	2	3
55. Link_55	*	130	76	3.0	220	1600	1.66	2	3

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JOB: C:\Projects\IDT Eagle\IDT Eagle.clv RUN: CAL3QHC RUN

DATE : 8/30/18
TIME : 10:19:37

RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. R_001	552023.38	4837738.00	1.8
2. R_002	551998.69	4837741.50	1.8
3. R_003	551973.88	4837744.50	1.8
4. R_004	551949.19	4837747.50	1.8
5. R_005	551924.31	4837750.50	1.8
6. R_006	551899.69	4837753.50	1.8
7. R_007	551876.25	4837760.50	1.8
8. R_008	551852.38	4837766.00	1.8
9. R_009	551828.00	4837772.50	1.8
10. R_010	551804.06	4837778.50	1.8
11. R_011	551779.69	4837785.00	1.8
12. R_012	551778.88	4837816.50	1.8
13. R_013	551802.75	4837809.50	1.8
14. R_014	551826.81	4837802.50	1.8
15. R_015	551851.12	4837797.00	1.8
16. R_016	551876.06	4837797.00	1.8
17. R_017	551900.88	4837795.50	1.8
18. R_018	551925.50	4837792.00	1.8
19. R_019	551950.25	4837788.50	1.8
20. R_020	551974.88	4837785.50	1.8
21. R_021	551999.62	4837782.00	1.8
22. R_022	552024.06	4837787.00	1.8
23. R_023	552037.38	4837809.00	1.8
24. R_024	552037.38	4837833.50	1.8
25. R_025	552069.12	4837841.50	1.8
26. R_026	552068.38	4837816.50	1.8
27. R_027	552067.75	4837791.50	1.8
28. R_028	552073.62	4837767.00	1.8
29. R_029	552097.44	4837760.00	1.8
30. R_030	552122.25	4837757.00	1.8
31. R_031	552147.00	4837753.50	1.8

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JOB: C:\Projects\IDT Eagle\IDT Eagle.clv RUN: CAL3QHC RUN

DATE : 8/30/18
TIME : 10:19:37

RECEPTOR LOCATIONS

RECEPTOR	X (M)	Y (M)	Z (M)
32. R_032	552171.94	4837750.50	1.8
33. R_033	552196.62	4837747.00	1.8
34. R_034	552221.38	4837744.00	1.8
35. R_035	552246.19	4837741.00	1.8
36. R_036	552270.81	4837737.50	1.8
37. R_037	552295.44	4837734.50	1.8
38. R_038	552320.00	4837731.00	1.8
39. R_039	552344.62	4837728.00	1.8
40. R_040	552360.50	4837688.50	1.8
41. R_041	552335.81	4837692.00	1.8
42. R_042	552311.12	4837695.00	1.8
43. R_043	552286.44	4837698.00	1.8
44. R_044	552261.62	4837701.00	1.8
45. R_045	552236.88	4837700.00	1.8
46. R_046	552212.06	4837699.50	1.8
47. R_047	552187.31	4837702.50	1.8
48. R_048	552162.50	4837706.00	1.8
49. R_049	552137.81	4837709.50	1.8
50. R_050	552113.19	4837713.00	1.8
51. R_051	552087.56	4837710.50	1.8
52. R_052	552071.25	4837692.00	1.8
53. R_053	552070.88	4837666.50	1.8
54. R_054	552070.88	4837641.50	1.8
55. R_055	552033.81	4837628.50	1.8
56. R_056	552033.75	4837653.00	1.8
57. R_057	552034.12	4837677.50	1.8
58. R_058	552034.19	4837702.50	1.8
59. R_059	552034.12	4837727.50	1.8

JOB: C:\Projects\IDT Eagle\IDT Eagle.clv RUN: CAL3QHC RUN

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	*	CONCENTRATION (PPM) REC1	REC2	REC3	REC4	REC5	REC6	REC7	REC8	REC9	REC10	REC11	REC12	REC13	REC14	REC15	REC16	REC17	REC18	REC19	REC20
0.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
130.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
140.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
190.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
200.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
210.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
220.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
230.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
240.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
250.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
260.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
270.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
280.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
290.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
300.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
310.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
320.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
330.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
340.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
350.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
360.	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
DEGR.	*	0	0	0	0	0	0	0	290	300	90	90	120	120	120	260	0	0	0	0	0

JOB: C:\Projects\IDT Eagle\IDT Eagle.clv RUN: CAL3QHC RUN

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND ANGLE (DEGR)	CONCENTRATION (PPM) REC21	REC22	REC23	REC24	REC25	REC26	REC27	REC28	REC29	REC30	REC31	REC32	REC33	REC34	REC35	REC36	REC37	REC38	REC39	REC40
0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
110.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
190.	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
200.	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
210.	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
220.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
230.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
240.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
250.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
260.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
270.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
280.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
290.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
300.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
310.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
320.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
330.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
340.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
350.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
360.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
DEGR.	0	0	0	0	190	190	330	0	0	0	0	0	0	0	0	0	0	0	0	290

JOB: C:\Projects\IDT Eagle\IDT Eagle.clv RUN: CAL3QHC RUN

MODEL RESULTS

REMARKS : In search of the angle corresponding to the maximum concentration, only the first angle, of the angles with same maximum concentrations, is indicated as maximum.

WIND ANGLE RANGE: 0.-360.

WIND * CONCENTRATION
ANGLE * (PPM)

(DEGR) *	REC41	REC42	REC43	REC44	REC45	REC46	REC47	REC48	REC49	REC50	REC51	REC52	REC53	REC54	REC55	REC56	REC57	REC58	REC59
0. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
10. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0
20. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
30. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
40. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
50. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0
60. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70. *	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80. *	0.0	0.2	0.2	0.2	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90. *	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0
100. *	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
140. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
150. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
160. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
170. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1
180. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
190. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
200. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
210. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
220. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
230. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
240. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
250. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
260. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
270. *	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
280. *	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
290. *	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
300. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
310. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
320. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
330. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
340. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
350. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
360. *	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
MAX *	0.2	0.2	0.2	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
DEGR. *	290	80	80	80	0	70	290	290	80	80	0	190	200	350	0	0	10	20	130

THE HIGHEST CONCENTRATION OF 0.20 PPM OCCURRED AT RECEPTOR REC40.