INTERAGENCY CONSULTATION COMMITTEE (ICC)
February 21, 2017 – 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 November 22, 2016, Meeting Minutes**

V. ACTION ITEM

8:35 **A. Confirm 2017 Chair and Vice Chair** — **Mary Ann Waldinger**

Per the ICC bylaws the positions of Chair and Vice Chair rotate annually serving a one year term. ICC will be asked to confirm the following:
1) ACHD Commuteride representative as Chair
2) VRT representative as Vice Chair

VI. INFORMATION/DISCUSSION ITEMS

8:40 Page 4 ***A. Review SH 44 EA JCT. 1-84 to Eagle Road, Air Quality Analysis** — **ITD**

ICC members are asked to review and provide comments to ITD on the SH 44 project-level conformity analysis.

9:15 **B. 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
NOVEMBER 22, 2016
COMMUNITY PLANNING ASSOCIATION

****MEETING MINUTES****

ATTENDEES: Beth Baird, City of Boise
Scott Frey, Federal Highway Administration, Ex-officio
Brian Shea, Idaho Transportation Department
Michael Toole, Department of Environmental Quality
Greg Vitley, Idaho Transportation Department–District 3
MaryAnn Waldinger, COMPASS

OTHERS PRESENT: Nancy Brecks, COMPASS

CALL TO ORDER:

Acting Chair MaryAnn Waldinger called the meeting to order at 8:40 a.m.

AGENDA ADDITIONS/CHANGES

None.

OPEN DISCUSSION/ANNOUCEMENTS/INTRODUCTIONS

MaryAnn noted that Jen Cole, the current ICC chair, is no longer working at DEQ and is no longer on ICC. Michael Toole and Dave Luft will be DEQ's representatives. A new chair will elected at the next ICC meeting.

CONSENT AGENDA

A. Approve July 12, 2016, Meeting Minutes

After discussion, **Greg Vitley moved and MaryAnn Waldinger seconded approval of the Consent Agenda as presented. Motion passed unanimously.**

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INFORMATION/DISCUSSION ITEMS

A. Review the US 20/26 EA, Air Quality Update for New Eagle Road Terminus

The committee discussed their concerns with the consultant's addendum to the US 20/26 EA, air quality update for the new Eagle Road terminus and the role of ICC in the process.

- Have the consultant put their explanation of higher volumes in the existing and no-build conditions in a table and put in the report for clarity
- Have the consultant explain how Linder Road was chosen as the most critical intersection, and what consideration was given to Eagle Road intersection
- Have consultant reference real numbers not percentages in the addendum and project level report
- ICC should have a more engaged role:
  - Have drafts sent to ICC for review and comment during the open review process
  - Have ICC receive the final report to ensure their comments and concerns were addressed
- What is the role of ICC relative to the hot spot analysis?
- MaryAnn and Greg will develop a table identifying location, volume of CO concentration, and what the year of representation was for ICC review
- What is the step for concurrence by ICC?
- The addendum should be understandable on its own, without having to refer back to the project level report for clarity

After discussion, **it was agreed that Greg will work with the consultant on reworking the addendum to provide clarity based on ICC's discussion.**

B. Review the New Format to the Project List

Mary Ann Waldinger reviewed revisions to the format for the project list for northern Ada County regional conformity. A federal dollars column will be added.

After review, **it was agreed the new format meets the needs.**

C. Agency Updates

Beth Baird provided an update on the I-84 interstate corridor being designated by FHWA as an alternative fuels (electric vehicles, compressed natural gas, and liquefied gas) corridor. When these fuels are available on the corridor, signage will be put in place identifying where they are.

Beth also provided an update on the Volkswagen settlement decree. Idaho is receiving $16.2 million. DEQ will be administrating the money based on projects nominated for approval by the state and the feds.

Next Meeting: TBD

ADJOURNMENT
Meeting adjourned at 9:40 a.m.

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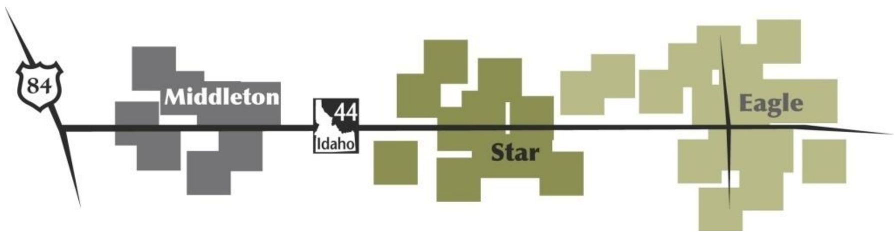
SH-44 CORRIDOR STUDY, JCT. I-84 TO EAGLE

Project No. STP-3320(101)

Key No. 07827



AIR QUALITY ANALYSIS

December 2016

Prepared for:

District 3

U.S. Department of Transportation
Federal Highway Administration

Prepared by:

AECOM

Contents

1. Executive Summary

The U.S. Environmental Protection Agency (EPA) establishes regulatory requirements and various ambient air quality standards. The Idaho Department of Environmental Quality (IDEQ) implements EPA's regulations, enforces them, develops air quality plans (often referred to as state implementation plans (SIPs) and maintenance plans), and monitors air quality statewide. Under the Clean Air Act (CAA), the EPA has established National Ambient Air Quality Standards (NAAQS), which specify maximum concentrations for each of seven criteria pollutants. Jurisdictions not meeting the NAAQS are known as nonattainment areas.

Proposed projects must meet conformity rules on a regional level and on a localized (project) level. To meet conformity at a regional level, a project must be in an approved Transportation Improvement Program (TIP), which is developed as a condition to secure federal funds for transportation projects in accordance with federal law. A project area burden analysis is normally conducted to show that project emissions are within the budget accounted for within the SIP, and to compare potential air quality impacts between the No Build and Build Alternatives. To meet conformity at a localized, or project-level, a project must not cause or contribute to a new violation of the NAAQS, increase the severity of an existing violation, or delay timely attainment or maintenance of the standards.

ITD is proposing a series of improvements to State Highway 44 (SH-44) in the *SH 44 Corridor Study, I-84 to Eagle Concept Report*. In conjunction with FHWA, ITD is also developing an Environmental Assessment (EA) of the proposed action to satisfy NEPA requirements. The EA evaluates approximately 16 miles of the roadway, from its connection to I-84 in Canyon County (Mile Post [MP] 0.12) to west of Eagle Road at Ballantyne Lane (MP 16.2) in Ada County. This analysis supports the EA, details potential air quality impacts associated with the proposed action for SH-44, and demonstrates conformity with the CAA.

Canyon County has never been recognized as violating any NAAQS. However Ada County does have a history of violating the NAAQS for carbon monoxide (CO) and particulate matter (PM_{10}). Ada County was first designated a nonattainment area for violating the CO NAAQS in 1979. Later, it was designated a nonattainment area for PM_{10}. EPA subsequently re-designated Ada County a "Maintenance Area" (i.e. in compliance with the NAAQS) on December 27th, 2002 for CO and in September of 2003 for PM_{10}. Therefore, the proposed action for SH-44 (project) is not located within any current nonattainment areas.

Despite the lack of nonattainment area designations, the region's long-range transportation plan, *Communities in Motion*, must still conform to motor vehicle emissions budgets established in Ada County for oxides of nitrogen (NO_x), volatile organic compounds (VOCs), and PM_{10}. *Communities in Motion* envisions SH-44 to be a four-lane, access controlled roadway in its regional emissions analysis. The proposed action shares this vision. Therefore, the proposed action is consistent with regional transportation conformity analyses and will not cause Ada County to exceed established motor vehicle emissions budgets.

To determine whether a proposed project meets project-level conformity, traffic levels at local intersections must be examined. A hot-spot analysis is required if the project is forecast to significantly increase intersection-level traffic and degrade the intersection performance. The EPA CAL3QHC model was used to predict CO concentrations for the hot-spot analysis. The modeled intersections include areas affected by the project that are accessible to the general public, and where elevated CO concentrations would be likely to occur. The highest 1-hour CO concentration (modeled impact plus assumed 1-hour background level of 2.1 parts per million (ppm)) from vehicle emissions with either the No-Build or Build Alternatives is 3.7 ppm, occurring at the intersection of SH-44 and Star Road). This maximum concentration is predicted at a receptor in the southwest corner of the intersection for the Existing intersection scenario (year 2014 traffic). Using a default persistence factor and an 8-hour background level of 1.2 ppm, the maximum predicted 8-hour CO concentration is 2.3 ppm. The maximum predicted 1-hour and 8-hour CO concentrations are well below the respective NAAQS of 35 ppm and 9 ppm.

Table ES-1 shows the maximum 8-hour concentrations for the three modeled intersections for each modeled year and alternative. These modeled intersections are expected to be the worst-case intersections for the SH-44 project; all other intersections in the project area are expected to have concentrations below these levels. As shown in Table ES-1, only slight variations in impacts are predicted between the No-Build and Build Alternatives for design year 2040. These variations are likely due to the slight traffic volume changes between the two scenarios. Although traffic volumes are predicted to increase for both scenarios in future years, CO impacts are expected to decrease due to improved emission rates. Because the SH-44 Corridor Study project would not cause or contribute to any violation of the NAAQS for CO, it would not cause any adverse localized CO impacts.

Table ES-1: CAL3QHC Modeled 8-Hour Maximum CO Concentration (ppm)[1]

SH-44 & OLD HIGHWAY 30		
Model Scenario	2014	2040
No Build	1.9	1.3
Build	-	1.3
SH-44 & STAR ROAD		
Model Scenario	2014	2040
No Build	2.3	1.4
Build	-	1.4
SH-44 & LINDER ROAD		
Model Scenario	2014	2040
No Build	2.0	1.3
Build	-	1.4

Notes: NAAQS for 8-hour CO is 9 ppm.
[1] 8-Hour concentration = 1-Hour concentration times persistence factor of 0.70; 1-Hour concentration equals 1-Hour modeled impact plus background concentration of 1.2 ppm.

In addition to the requirements established for criteria pollutants, the EPA has identified a list of mobile source air toxic (MSAT) and greenhouse gas (GHG) pollutants, but has yet to establish ambient air quality standards for them. MSAT pollutants are known or suspected to cause cancer or other serious health effects. GHGs are believed to contribute to climate change.

The proposed action is determined to have low potential for MSAT effects. The regional nature of GHG emissions make it difficult to quantitatively estimate potential climate change impacts associated with the proposed action. However, given several national and local alternative fuel use trends, vehicle miles of travel (VMT) reduction strategies, and increasing vehicle fleet fuel efficiency standards, it is likely GHG emissions from the proposed action will be lower in 2040 than they are today.

To help reduce the region's VMT and emissions, the region's current travel demand management programs (e.g. Commuterride) should be maintained and enhanced. The current programs in the SH-44 corridor are described in Section 3.2.

Long-term mitigation for the proposed action will not be required.. However, IDEQ will require control of fugitive dust from construction sites. Section 58.01.01 of the Idaho Administrative Code contains the rules for control of Air Pollution in Idaho. Part 650 requires that all reasonable precautions be taken to prevent particulate matter from becoming airborne. This rule applies to construction operations and provides a list of those control measures that could be considered for control of fugitive emissions.

2. Introduction

This document presents an analysis of air quality impacts associated with the recommended improvements to SH-44 from its connection to I-84 in Canyon County (MP 0.12) to west of Eagle Road at Ballantyne Lane (MP 16.2) as identified in the *SH-44 Corridor Study, I-84 to Eagle Concept Report* (Project No. STP-3320(101); Key No. 7827). The results of this air quality analysis will be used to support a NEPA document for the proposed action.

2.1 Corridor Study Area

Initially, the limits for the corridor study extended approximately 16 miles along SH-44 from I-84 to Ballantyne Lane (near Eagle Road) and from the Boise River north to Foothills Road. As the proposed alternative was developed through the screening process documented in *SH-44 Corridor Study, I-84 to Eagle; Alternatives Screening Report* (February 2012), the study area was refined to include only the proposed addition of lanes to the Existing SH-44 and the realignment of SH-44 south of Middleton from its connection with I-84 to Ballantyne Lane.

2.2 Applicable Air Quality Laws and Regulations

The EPA establishes regulatory requirements and various NAAQS to implement the CAA. NAAQS specify maximum concentrations for each of seven criteria pollutants:

- Carbon Monoxide (CO)
- Coarse Particulate Matter –less than or equal to 10 micrometers in diameter (PM_{10})
- Fine Particulate Matter – less than or equal to 2.5 micrometers in diameter ($PM_{2.5}$)
- Ozone (O_3)
- Sulfur Dioxide (SO_2)
- Lead (Pb)
- Nitrogen Dioxide (NO_2)

IDEQ implements and enforces the NAAQS through development of SIPs and maintenance plans to ensure they are not violated. Transportation improvement programs (TIPs) and regional long-range transportation plans produced by metropolitan planning organizations (i.e. COMPASS) must also demonstrate their compliance to NAAQS via emissions analyses required by SIPs and/or maintenance plans. Federally funded or locally funded, regionally significant transportation projects are also required to demonstrate compliance with the NAAQS. The process of determining that a transportation projects, programs, or regional long-range transportation plans meet the NAAQS is referred to as air quality "conformity." A transportation project must be included in a conforming TIP and long-range transportation plan before conformity is demonstrated and a NEPA document approved.

In addition to the requirements established for criteria pollutants, the EPA has identified several mobile source air toxic (MSAT) and greenhouse gas (GHG) pollutants. Twenty-one pollutants have been identified by the EPA as MSATs. The list includes six prioritized pollutants that are known or suspected carcinogens: benzene, acrolein, formaldehyde, 1,3 butadiene, acetaldehyde, and diesel soot (i.e. particulate matter). GHGs include carbon dioxide, methane, and ammonia and are believed to contribute to climate change. The EPA has yet to establish ambient air quality standards for MSATs or GHGs and, as a result, there are no EPA-required SIPs or maintenance plans for them.

The current status of Ada and Canyon County regarding the NAAQS, MSAT, and GHG are discussed in Section 5.0 Affected Environment.

2.2.1 Idaho Administrative Code, Section 58.01.01

Section 58.01.01 of the Idaho Administrative Code contains the rules for control of Air Pollution in Idaho. Part 650 requires 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:

- 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.

3. Project Description

SH-44 is located in Canyon and Ada counties in southwestern Idaho and extends through the cities of Middleton, Star, and portions of Eagle. It is the only east-west highway that links Canyon County to Ada County north of the Boise River, providing a connection to the cities of Caldwell, Middleton, Star, Eagle, and Garden City. Figure 1 shows the highway's location within the region, relative to the cities and counties it serves. The once rural properties along SH-44 are transitioning from agricultural use to subdivisions and businesses. Growth and development have resulted in higher traffic volumes and congested roadway conditions.

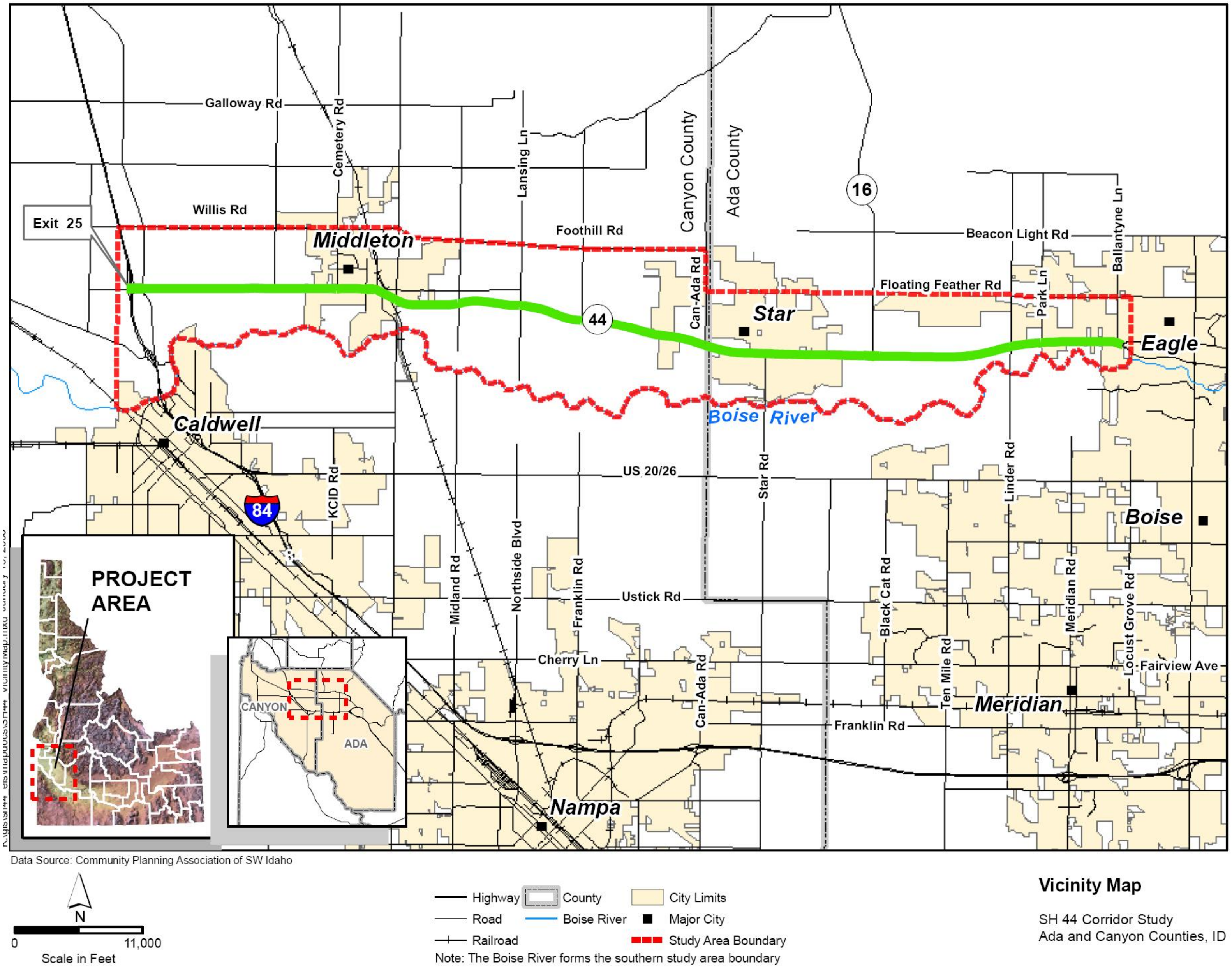
ITD is proposing several improvements along SH-44 as documented in the *SH-44 Corridor Study, I-84 to Eagle Concept Report*. FHWA and ITD are the joint lead agencies responsible for preparing an EA of these proposed improvements. The EA is being developed in accordance with NEPA of 1969, CEQ Regulations 40 CFR 1500 – 1508 and the FHWA regulations 23 CFR 771.

The proposed action for SH-44 is classified as a "complex project" per Section 315.0 "Project Definitions", in ITD's Design Manual. It is expected to include the addition of travel lanes, a new alignment in the vicinity of Middleton, and right-of-way (ROW) acquisition. The NEPA document will provide the clearance necessary to acquire ROW, preserving the corridor for the proposed action.

3.1 Existing SH-44 Configuration

SH-44 is currently an undivided two-lane highway with turn lanes at several at-grade intersections and a two-way left turn lane in some locations from MP 0.12 to MP 14.5 and a four-lane divided highway with turn lanes at several at-grade intersections and a two-way left turn lane in some locations from MP 14.5 to 16.2. Existing intersections include a mix of controlled (signal, stop sign) and uncontrolled access to the highway from the driveways of residences and subdivisions, businesses, and farm fields. Land uses adjacent to SH-44 are varied. Residential and commercial developments are concentrated adjacent to the highway in the cities of Middleton and Star. Agricultural and lower-density residential developments are most prominent in the remaining non-urbanized areas adjacent to the highway. The width of ITD's existing ROW varies from 80 feet to 120 feet throughout the corridor.

Figure 1. Vicinity Map



3.2 Existing Travel Demand Management

Several existing travel demand management strategies are currently employed throughout the region. For example, carpooling/vanpooling is encouraged along SH-44. Three “park-n-ride” lots are located along SH-44. One is near the eastern terminus of the study area at Ballantyne Lane and the other two are located west of Middleton and west of Star Road in Star, respectively. Additionally, Ada County Highway District’s Commuteride program offers rideshare and vanpool services throughout the Treasure Valley and beyond. However, the majority of the vanpools operated by Commuteride utilize the I-84 corridor (ACHD, June 2016).

Valleyride, a service of the regional public transportation authority (Valley Regional Transit), uses SH-44 to offer an intercounty route developed primarily for residents traveling between Caldwell and Boise (Valleyride, June 2016). This route (Route 44):

- Provides one trip during the AM (6:20-8:00am) and PM (5:05-6:40pm) peak periods.
- Provides no mid-day service.
- Provides no weekend service.

3.3 Proposed Action

The *SH-44 Corridor Study, I-84 to Eagle Alternatives Screening Report* (February 2012) considered several concepts and options to meet forecasted transportation demand along SH-44. Regional plans were consulted including *Communities in Motion*, *Treasure Valley in Transit*, and the comprehensive land use plans of each city and county along SH-44. To facilitate the development of route options, SH-44 was divided into five segments. These segments are based on political and functional boundaries:

Segment 1: I-84 Ramps (western terminus) to Canyon Lane (approximately 1.5 miles)

Segment 2: The City of Middleton; Canyon Lane to Duff Lane (approximately 3.5 miles)

Segment 3: Duff Lane to Blessinger Road (approximately 3.5 miles)

Segment 4: The City of Star; Blessinger Road to SH-16 (approximately 3.5 miles)

Segment 5: West Eagle; SH-16 to Eagle Road (eastern terminus is actually Ballantyne Lane) (approximately 4 miles).

Three to five route options were considered for each project segment during the screening analysis. It was determined that the existing alignment would best meet the purpose and need for the project for all segments with the exception of Segment 2. A new alignment was preferred for this segment of SH-44 as it has the potential for fewer environmental impacts. Therefore, the preferred action includes:

- Segment 1: Widening SH-44 to 4-lanes with a paved median and two paved multi-use shoulders.
- Segment 2: Constructing a new alignment of SH-44 south of Middleton with 4 travel-lanes, a paved median, and two paved multi-use shoulders.
- Segment 3: Widening SH-44 to 4-lanes with a paved median and two paved multi-use shoulders.
- Segment 4: Widening SH-44 through Star to have 4-lanes, a paved median, paved shoulders, curb, gutter, and sidewalk.
- Segment 5: Widening SH-44 to have 4-lanes, paved median, paved shoulders, and a detached multi-use pathway.

At grade, full-movement intersections with local arterials/roadways are proposed along the corridor with lane configurations based on the capacity needs identified in the *SH-44 Corridor Study, I-84 to Eagle, Updated Analysis of Traffic Forecasts and Capacity* (June 2014).

3.4 Other Projects in or Near the Corridor

The Idaho Transportation Improvement Program (ITIP, formally the State Transportation Improvement Program or STIP) lists the following projects/studies in or near the SH-44 area:

- *SH-44, Canyon Canal Bridge* (Key No. 18950) Bridge Replacement
- *SH-44, I-84 to Jct SH-55 North* (Key No. 19709) Resurfacing/Rehabilitation
- *STC-7807, S Cemetery Rd; SH-44 to Willow Cr, Middleton* (Key No. 12048) New Construction
- *OFFSYS, Mill Cr Elem School SR2S, Greater Middleton P&R* (Key No. 18838) Pathway

4. Methodology

4.1 Analysis Overview

EPA and FHWA have offered guidance as to how to assess the air quality impacts associated with several types of pollutants including criteria pollutants, MSATs, and GHGs. The methodologies discussed below follow these federal guidelines; the State of Idaho no longer allows for their previous air ‘screening’ policy for project-level CO conformity determinations. Potential impacts and discussion are provided below in Section 6.

4.1.1 Criteria Pollutants

Two levels of air quality analysis are required for projects in CO, PM_{10}, and $PM_{2.5}$ nonattainment or maintenance areas. Both must be conducted to determine the potential impacts of non-exempt transportation projects. They are "regional emissions analyses" and "project-level analyses."

Regional emissions analyses are used to determine conformity between transportation programs/plans with SIPs and/or maintenance plans. These type of analyses determine the regional impacts that future transportation networks may have on the area's ability to attain (or maintain) ambient concentrations of criteria pollutants at or below the NAAQS. Almost all SIPs and maintenance plans contain regional motor vehicle emissions budgets, which future transportation systems must not exceed. Prior to the establishment of these budgets, emissions from the "built" transportation system cannot exceed those estimated from the existing system (e.g. the "no build" system). In the case of "limited" maintenance plans, regional emissions analyses are not required. This is because ambient concentrations of the pollutant have been reduced so significantly that it is unlikely that emissions from transportation sources could cause or contribute to future violations of the NAAQS.

To conduct a regional emissions analysis, emissions factors from the EPA MOVES model applied to VMT forecasts are usually produced by regional travel demand models. These emissions estimates are then compared to motor vehicle emissions budget(s) or to emissions estimates of the "no build" condition. Often, metropolitan planning organizations (MPOs) are charged with conducting regional emissions analyses, as they are typically involved with developing travel demand models and transportation system planning. More information on regional emissions analyses is found in the Code of Federal Regulations (CFR) 40 CFR 93.118 and 119. The regional impacts of the SH-44 project are discussed below in Section 6.3.

Local or project-level conformity is determined by project-level "hot spot" analyses, showing that the project will not cause or contribute to new violations of CO, PM_{10}, or $PM_{2.5}$ standards, increase the severity of an existing violation, or delay timely attainment or maintenance of the standards. Per 40 CFR 93.116(a), PM_{10} and $PM_{2.5}$ conformity may also be determined by demonstrating that the project is *not* identified in 40 CFR 93.123(b)(1). Detailed descriptions of the methodologies used to demonstrate local conformity for the SH-44 project are given below in Section 4.2.

4.1.2 MSATs

Although MOVES does estimate emissions factors for some toxic air pollutants, EPA has yet to list a preferred/recommended dispersion model for MSAT pollutants. In February 2006, FHWA issued interim guidance on the analysis of MSAT pollutants. Currently, there is no regulatory authority requiring that MSATs be addressed in NEPA documents. However, it is an issue that is often raised and is appropriate to address.

FHWA guidance places projects into one of three MSAT categories:

1. Exempt projects with no meaningful effects. These are projects listed in 23 CFR 771.117(c), 40 CFR 93.126, or ones with no meaningful impact on future traffic volumes/vehicle mix.

2. Projects with low potential for effects. These are projects that improve operations without substantial new capacity or meaningfully increasing MSAT emissions. A project's design year annual average daily traffic volume (AADT) should be at or below 150,000 to be considered as having a low potential.
3. Projects with high potential for effects. These are projects which create or alter major intermodal freight facilities or create/add substantially more capacity to an urban transportation system located in proximity to populated areas. A project's design year AADT should be in excess of 150,000 to be considered in this category.

The SH-44 project falls into the second category. Section 6.1.3 provides the results of the MSAT review for the project.

4.1.3 GHGs

Observations on a project's GHG emissions impacts are made by looking at trends in vehicle fleets, vehicle fuel efficiency requirements, and regional VMT. Section 6.1.4 provides a general assessment of GHGs from the proposed action.

4.2 Project-Level Analyses

The project is not located in a federally designated air quality nonattainment/maintenance area for $PM_{2.5}$, O_3, NO_2, SO_2, or Pb. Therefore, the project has minimal likelihood of exceeding the NAAQS for these pollutants.. However Ada County does have a history of violating the NAAQS for CO and PM_{10}; Northern Ada County is Limited Maintenance for CO, and Maintenance for PM_{10}. Therefore, project-level analyses need to be addressed for these two criteria pollutants.

4.2.1 Particulate Matter

Quantitative hot-spot analyses for particulate matter is required for projects that exceed specific criteria as outlined in federal conformity under 40 CFR 93.123(b)(1). For highway projects, project-related diesel traffic is the criteria used to determine analysis requirement. County data for diesel vehicles is applied to project-related traffic increases to determine whether there is a 'significant' increase in diesel traffic due to the project. Traffic data for the No-Build and Build Alternatives for existing year 2014 (No-Build only), and design year 2040 is provided in the SH-44 Corridor Preservation, Jct. I-84 to Eagle, Updated Analysis of Traffic Forecasts and Capacity and associated appendices (URS, June 2014). County data for vehicle and fuel types are provided by IDEQ for these same years (more information regarding the county data is described below in Section 4.2.2).

4.2.2 Carbon Monoxide "Hot-Spot"

A local CO hot-spot analysis is used to identify when traffic patterns, idle times, queue lengths, and vehicle CO emission rates might lead to elevated CO levels near congested intersections, possibly exceeding the NAAQS. The methodology for CO hot-spot analysis follows federal procedures under 40 CFR 93.123(a). Signalized intersections along the project alignment are evaluated by level-of-service (LOS), delay (seconds/vehicle), and volume (vehicles per hour) to assess the need for hot-spot analyses. (Detailed Synchro traffic model output is provided in Appendix A.) A hot-spot analysis needs to be performed for projects affecting intersections that are LOS of D, E, or F, or that will change the LOS to D, E, or F. Five of the intersections along the project route showed LOS worse than C for at least one analysis year/scenario. Table 1 lists intersection operations (LOS and delay (seconds)) and volumes for these five intersections, by scenario. These intersections are listed from west to east along the alignment.

Table 1: Intersection Traffic Operations Summary (PM Peak Hour)

Intersection at SH-44	Existing Year 2014[1]			2040 No Build			2040 Build		
	LOS	Delay (s)	VPH	LOS	Delay (s)	VPH	LOS	Delay (s)	VPH
Old Highway 30	*C*	*21.5*	*1257*	**F**	*123.0*	*2745*	**D**	*49.6*	*4218*
S. Middleton Rd[2]	C	22.1	1337	**F**	88.6	2985	C	29.5	3315
Lansing Ln[3]	A	4.8	878	**F**	1,559	2459	**D**	46.1	3595
Star Rd	*C*	*27.3*	*1901*	*C*	*29.1*	*4678*	**D**	*51.5*	*6035*
Linder Rd	*C*	*22.0*	*2427*	*C*	*30.0*	*5407*	**D**	*54.1*	*6740*

Notes: LOS and Delay data from *Updated Analysis of Traffic Forecasts and Capacity* (June 2014). VPH data from Synchro runs.
[1] Existing year for LOS and delay is 2013. Existing year for VPH is 2014.
[2] Existing and No Build 3-way intersection. VPH for Build scenario is from Synchro run SH-44 Alt & Middleton Rd. to be conservative.
[3] Intersection is unsignalized for Existing and No Build scenarios.

Typically, analysis results showing compliance for the worst three intersections (by LOS, then volume) should be sufficient to demonstrate compliance for the remainder of intersections, assuming similar geometries. Of the five intersections shown above in Table 1, the three with the highest Build scenario LOS and volume are at Old Highway 30, Star Road, and Linder Road. Besides have much lower peak volumes and smaller delays for the Build scenario, the intersections at S. Middleton Road and Lansing Lane are 3-way and unsignalized, respectively, in their Existing and No Build scenarios. (Note: unsignalized intersections are not addressed for hot-spot analyses.)

Carbon monoxide levels near the intersections are predicted using the EPA approved CAL3QHC air dispersion model (EPA, CAL3QHC Version 2.0, 1995). Project CO impact modeling evaluates PM peak hour estimated traffic counts for Existing conditions (2014), and for the No Build and Build Alternatives for the design year (2040). CAL3QHC predicts pollutant concentrations near roadways model, incorporating the CALINE3 line-source air dispersion model with a traffic algorithm that estimates queue lengths at signalized intersections. Intersection signalization parameters are obtained from transportation modeling output; relevant Synchro data is provided in Appendix A. CAL3QHC input variables include free-flow and idle emission factors, roadway geometries, traffic volumes, site characteristics, signal timing, and meteorological conditions.

Free-flow and idle emission factors were determined using the EPA's MOVES emissions model (MOVES2014a, EPA, December 2015). For project-level conformity, MOVES requires specific county-level data for input. The Idaho Department of Environmental Quality provided Ada County data for input to MOVES. Emission factors and idle emission rates are based on average vehicle speeds, regional vehicle registration mixes and annual mileage accumulation rates, the effects of vehicle inspection and maintenance programs, and regional ambient conditions. The evaluation of localized CO impacts is based on winter weather conditions. CO emissions are inversely proportional to temperature, due to less efficient combustion at lower temperatures. In addition, maximum CO concentrations usually occur during winter months when temperature inversions trap vehicle emissions near the ground. Emission factors are calculated for the existing year (2014), and design year (2040). Table 2 shows the MOVES emission factors used in the modeling. The MOVES input data, model run specification files, and output calculations and summary are included in Appendix B.

Table 2: MOVES Emission Factors

Link Type	Year 2014	Year 2040
Queue Link: Idle (g/hr)[1]	60.8	7.49
Free-flow Link: (g/mile)[2]	6.15	0.92

[1] Idle emission factors in grams per hour (g/hr) are based on maximum of either emission rate (g/hr) calculated for speed = 0 mph, or emission factor in grams per mile (g/mile) for speed=2.5 mph multiplied by 2.5. In this case the alternate 2.5 mph idle factor is conservative.

[2] Free-flow emission factors in g/mi are based on low speed of 25 mph. This is conservative as posted speed limits are 40 mph to 55 mph for the modeled links, which would have lower emission factors.

Additional EPA default inputs are applied per standard CAL3QHC guidance (EPA, 1992). Receptors are located where the maximum total project concentration is likely to occur, and where the general public is likely to have access (such as sidewalks). Receptors are located on both sides of the roadways, at least 3 meters from the edge of the active roadway surface; receptors are not modeled within 3 meters of traveled roadways which comprise the intersection, where vehicle turbulence does not allow current models to make valid concentration estimates. A breathing height of 1.8 meters (5.9 feet) is specified as the receptor elevation. Default meteorological conditions were used, including a wind speed of 1 meter per second (approximately 2.2 mph), D stability, and a mixing height of 1,000 meters. A surface roughness (z_o) for 'Grass' is assumed to be 0.5 cm (between 'Grass' (5-6 cm) and Grass' (4 cm)); this is a low (more conservative) z_o, and should be conservatively applicable to the project area. Wind directions every 10 degrees, from 0 to 360 degrees, are evaluated.

For the SH-44 project, 1-hour CO impacts are predicted using the CAL3QHC model. The accepted use of this model, default input values, and background levels were confirmed by the local metropolitan planning organization (phone conversation and follow-up email between

MaryAnn Waldinger (COMPASS) and Christina Schmitt (AECOM), August 10, 2016). Average 8-hour CO concentrations are then calculated by multiplying the 1-hour concentrations by the EPA default persistence factor of 0.70. Background concentrations are added to modeled impacts to get total predicted concentrations for the intersections. Background CO levels are obtained from the NW Airquest lookup tables (Washington State University, http://lar.wsu.edu/nw-airquest/lookup.html). To be conservative, worst-case 1- and 8-hour background concentrations from along the SH-44 corridor are used for all intersections modeled. A background concentration of 2.1 ppm is used for the 1-hour average (Washington State University (NWAirquest), 2016). Of the three intersections analyzed, the highest background CO levels are at SH-44 and Linder, the intersection closest to Boise. The 1-hour CO level is 2.1 ppm, and the 8-hour CO level is 1.2 ppm. These values are used as the CO background level for all three intersections analyzed.

5. Affected Environment

5.1 Existing Conditions

5.1.1 Criteria Pollutants (NAAQS)

SH-44 is not located in any federally designated air quality nonattainment/maintenance area for $PM_{2.5}$, O_3, NO_2, SO_2, or Pb. Therefore, both counties are treated as attainment areas for these pollutants and not required to demonstrate conformity.

Canyon County is considered an attainment area for all criteria pollutants. Past violations of the CO and PM_{10} NAAQS in Ada County have been recorded. Thus Northern Ada County is currently classified as a "limited maintenance area" for CO and a "maintenance area" for PM_{10}. However, Ada County is considered an attainment area for all other criteria pollutants.

The EPA approved Northern Ada County's Limited Maintenance Plan for CO in December 2002. Areas under a limited maintenance plan are not required to demonstrate that their transportation programs or long-range transportation plans conform to motor vehicle emissions budgets. Therefore, there are no applicable CO motor vehicle emissions budgets established for Northern Ada County.

Coarse particulate matter (PM_{10}) includes particles less than or equal to 10 micrometers in diameter suspended in the atmosphere. PM_{10} affects visibility, plant growth, and human health. Commonly, past exceedances of the 24-hour PM_{10} NAAQS in Northern Ada County occur during severe wintertime air stagnation events. These events, known as atmospheric inversions, are caused when cold, stagnant air is held close to the valley floor by warmer air aloft. During these events, particulates form in the atmosphere from oxides of nitrogen (NO_X) and volatile organic compounds (VOC), both considered precursors of PM_{10}.

In September of 2003, the EPA approved the *Northern Ada County PM_{10} SIP Maintenance Plan and Redesignation Request*. Thus, Northern Ada County is designated as a PM_{10} maintenance area in attainment of the 24-hour NAAQS. The PM_{10} maintenance plan contains approved motor vehicle emissions budgets for PM_{10}, NO_X, and VOC.

On October 1, 2015, the EPA lowered the 8-hour ozone (O_3) standard to 70 parts per billion (0.070 ppm). This action did not result in either Ada or Canyon Counties being designated as a nonattainment area for O_3. Therefore, O_3 conformity does not currently apply.

5.1.2 Mobile Source Air Toxic (MSAT) Emissions

MSAT emissions are a subset of the 188 air toxic pollutants defined by the CAA. These pollutants are emitted as a result of the vehicle fueling and fuel combustion processes. EPA's

Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. Toxicity information is obtained from the IRIS database's Weight of Evidence Characterization summaries which represent the most current evaluations of the potential hazards and toxicology for six prioritized MSATs. The six prioritized MSAT pollutants include:

- Benzene. It is characterized as a known human carcinogen.
- Acrolein. The potential carcinogenicity of acrolein cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- Formaldehyde. It is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- 1,3-butadiene. It is characterized as carcinogenic to humans by inhalation.
- Acetaldehyde. It is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- Diesel exhaust. Diesel exhaust is the combination of particulate matter and organic gases from diesel combustion. It is likely to be carcinogenic to humans by inhalation from environmental exposures. Exhaust from diesel engines also causes chronic respiratory effects. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis.

There have been studies that address MSAT health impacts in proximity to roadways. A more detailed discussion on the current studies of MSAT health impacts is found on EPA's website (http://www.epa.gov/otaq/toxics.htm).

The EPA issued a final rule on controlling emissions of hazardous air pollutants from mobile sources in March 29, 2001. In this rule, EPA examined the impacts of existing and newly promulgated mobile source control programs. Based on the impacts of these programs, FHWA estimates these programs will reduce on-highway emissions of several MSAT pollutants including benzene, formaldehyde, 1,3-butadiene, and acetaldehyde (EPA Toxics, September 2009).

On February 26, 2007 EPA issued another rule (FR Vol. 72, No. 37) regarding the control of MSAT pollutants. This rule will significantly lower MSAT emissions in three ways:

1. By lowering benzene content in gasoline
2. By reducing exhaust emissions from passenger vehicles operated at cold temperatures (under 75 degrees)
3. By reducing emissions that evaporate from, and permeate through, portable fuel containers

Because these rules are implemented at the national level, IDEQ has little involvement in enforcing them. No SIPs exist in the State of Idaho that identify MSAT hot-spots or motor vehicle emissions budgets. Therefore, conformity does not apply to MSAT pollutants. However, as part of the NEPA documentation, the basic MSAT impacts associated with transportation projects are often qualitatively assessed by comparing traffic volume forecasts and VMT of the existing highway to the preferred alternative.

5.1.3 Greenhouse Gas (GHG) Emissions

Transportation is the fastest-growing source of GHG emissions nationally and releases the largest amount of CO_2 into the atmosphere. EPA promotes strategies that reduce transportation-related GHG emissions and save fuel. This effort includes EPA's Clean Automotive Technology research program and a wide range of voluntary programs to encourage efficient transport of people and goods. Also, EPA's Green Vehicle Guide helps consumers do their part to reduce GHG emissions by providing information on selecting clean, fuel-efficient vehicles (EPA Greenhouse Gasses, April 2012).

In September of 2009, the EPA proposed its first-ever national greenhouse gas (GHG) emissions standards under the CAA. The Department of Transportation's National Highway Traffic Safety Administration (NHTSA) proposed changes to the Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. Both proposals establish 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.

Despite this proposal, no Federal rules exist specifically to control GHG emissions from mobile sources. Additionally, neither EPA nor IDEQ enforces GHG emissions reduction plans. Therefore transportation conformity does not apply to GHG pollutants. However, as part of the NEPA documentation, the basic GHG impacts associated with transportation projects are often qualitatively assessed by comparing VMT, travel time, and fuel consumption of the existing condition to the preferred alternative.

6. Environmental Consequences

6.1 Air Quality Impact Determinations

6.1.1 Particulate Matter Analysis

Only specific types of transportation projects require hot-spot analysis for demonstration of particulate matter conformity, per 40 CFR 93.123(b)(1). The proposed action for SH-44 does not meet any of the criteria needed to be considered a project of air quality concern:

1. The proposed widening/realignment of SH-44 will not have a significant effect on the number of diesel vehicles using the state highway. Per Ada County data (IDEQ 2016), the vehicle source fraction for heavy diesel trucks is 6.37 percent in year 2040. The largest difference between the Build and No Build traffic volumes is approximately 34,800 vehicles per day (vpd) for a new routing with the Build alternative (East Transition to Duff Lane), as compared to original routing in the same area (between Cemetery Road and Duff Lane). Therefore, the project is only expected to increase diesel traffic by up to 2,217 vpd. This is well below 10,000 AADT needed to trigger a qualitative analysis. Traffic throughputs and diesel truck percentage calculations are provide in Appendix C as “2040 Diesel Truck – PM Conformity.xlsx” along with supporting data.
2. The same assumptions above apply to intersections. Therefore the proposed action will not significantly increase diesel vehicle traffic at the intersection along the corridor.
3. A new or expanded bus, rail, or freight terminal is not proposed as part of this action.
4. No PM_{10} “hot-spots” are identified in Ada County’s maintenance plan. Therefore the project-level conformity determination requirements of 40 CFR 93.116 have been satisfied for PM_{10} and no qualitative analysis is necessary.

Therefore, with regards to PM_{10} (and $PM_{2.5}$):

> *“The proposed undertaking is not ‘a project of air quality concern’ as defined in 40CFR93.123(b)(1). Therefore the project-level conformity determination requirements of 40CFR93.166 have been satisfied and no qualitative Particulate Matter hot-spot analysis is necessary.”*

6.1.2 Carbon Monoxide “Hot Spot” Analysis

As described in Section 4.2.2 above, the EPA CAL3QHC model was used to predict CO concentrations for the hot-spot analysis. The three modeled intersections identified in Table 1 represent areas affected by the project that are accessible to the general public, and where elevated CO concentrations are expected to be worst-case.

Tables 3 and 4 show the maximum 1-hour and 8-hour concentrations, respectively, for the three worst-case intersections for each design year and alternative. These modeled intersections are expected to be the worst-case intersections for the SH-44 project; all other intersections in the project area are expected to have concentrations below these levels. As shown in the tables, only slight variations in impacts are predicted between the No-Build and Build Alternatives for design year 2040. These variations are likely due to the slight traffic volume changes between the two scenarios. Although traffic volumes are predicted to increase for both scenarios in future years, CO impacts are expected to decrease due to improved emission rates. CAL3QHC model input and output files are included in Appendix D.

Table 3: CAL3QHC Modeled 1-Hour Maximum CO Concentration (ppm)[1]

SH-44 & OLD HIGHWAY 30		
Model Scenario	2014	2040
No Build	3.1	2.3
Build	-	2.3
SH-44 & STAR ROAD		
Model Scenario	2014	2040
No Build	3.7	2.4
Build	-	2.4
SH-44 & LINDER ROAD		
Model Scenario	2014	2040
No Build	3.3	2.3
Build	-	2.4

Notes: NAAQS for 1-hour CO is 35 ppm.
[1] 1-Hour concentration equals 1-Hour modeled impact plus background concentration of 2.1 ppm.

Table 4: CAL3QHC Modeled 8-Hour Maximum CO Concentration (ppm)[1]

SH-44 & OLD HIGHWAY 30		
Model Scenario	2014	2040
No Build	1.9	1.3
Build	-	1.3
SH-44 & STAR ROAD		
Model Scenario	2014	2040
No Build	2.3	1.4
Build	-	1.4
SH-44 & LINDER ROAD		
Model Scenario	2014	2040
No Build	2.0	1.3
Build	-	1.4

Notes: NAAQS for 8-hour CO is 9 ppm.
[1] 8-Hour concentration = 1-Hour concentration times persistence factor of 0.70; 1-Hour concentration equals 1-Hour modeled impact plus background concentration of 1.2 ppm.

The highest 1-hour CO concentration (modeled impact plus assumed 1-hour background level of 2.1 parts per million (ppm)) from vehicle emissions with either the No-Build or Build Alternatives is 3.7 ppm, occurring at the intersection of SH-44 and Star Road). This maximum concentration is predicted at a receptor in the southwest corner of the intersection for the Existing intersection scenario (year 2014 traffic). Using a default persistence factor and an 8-hour background level of 1.2 ppm, the maximum predicted 8-hour CO concentration is 2.3 ppm. The maximum predicted 1-hour and 8-hour CO concentrations are well below the respective NAAQS of 35 ppm and 9 ppm. Because the SH-44 Corridor Preservation project would not cause or contribute to any violation of the NAAQS for CO, it would not cause any adverse localized CO impacts.

Therefore, with regards to CO:

> *"A project level air quality analysis for carbon monoxide has been conducted for the project and no receptor sites are forecast to experience concentrations in excess of the current 1-hour and 8-hour standard. It is therefore concluded that the project will have no significant adverse impact on air quality due to carbon monoxide."*

6.1.3 MSAT Pollutants

Accurate project-level air quality analyses cannot be conducted for MSAT pollutants because of the uncertainties involved with the current state of emissions inventories, modeling, and health impact assessments. While the tools available do allow us to reasonably predict relative emissions changes between alternatives for larger projects (e.g. AADTs above 150,000), the amount of MSAT emissions, concentrations, and/or exposures from the SH-44 proposed action cannot be predicted with enough confidence to be useful in estimating health impacts. Therefore, it is not possible to make a determination of whether the proposed action would have "significant adverse impacts on the human environment." More detailed discussions on the incomplete or unavailable information needed to assess the project-specific MSAT emission impacts is provided with ITD's *Air Screening Policy* (Exhibit 680-6A).

The proposed action meets the definition of a "project with low potential MSAT effects" based on the definition provided by ITD's *Air Screening Policy* because it will not result in any meaningful changes in traffic volumes, vehicle mix, or cause a significant increase in MSAT emissions/concentrations. Assuming AADT volumes are approximately 90% of weekday volumes, the maximum 2040 volume forecast for the proposed action is well below 150,000 AADT. As such, FHWA has determined that projects of this type will have a minimal impact with respect to MSAT emissions. Moreover, EPA regulations for vehicle engines and fuels are producing declines in MSAT emissions. Thus, through these regulations, 2040 MSAT emissions from the proposed action are minimized while background concentrations continue to decline.

Regardless, there could be localized areas, given specific ambient conditions, where concentrations of MSATs may be higher than they are now in 2040. These potential localized increases in MSAT concentrations would likely occur near the realigned portion of SH-44 and improved intersections. However, the magnitude and the duration of these potential increases compared to existing conditions cannot be accurately quantified due to the inherent deficiencies of current emissions and dispersion models. Potential sensitive receptor locations currently near SH-44 include Middleton Transition School and ArtsWest, a private performing arts school.

Overall, the proposed action has been assessed to have a low potential for significant increases in ambient MSAT concentrations. Any increases in MSAT emissions due to VMT increases will be offset by improvements in the vehicles and fuels. VMT in 2040 resulting from the proposed action are nearly the same as the 2040 "no build" estimates. Therefore there is no appreciable difference in overall MSAT emissions attributable to the proposed action. EPA's national control programs are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020. Local conditions may differ from these national projections in terms of fleet mix, vehicle turnover, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for regional VMT growth) that ambient concentrations of MSAT pollutants in the area are likely to be lower in 2040.

6.1.4 GHG Pollutants

It is difficult at best to determine the direct impacts the proposed action may have on GHG emissions. However, general conclusions are made by looking at the potential changes to vehicle fleet (i.e. new or revised emissions standards and/or use of renewable fuels), regional (i.e. Ada and Canyon County) VMT reduction strategies, and congestion management strategies (i.e. reducing system delay).

The proposed action for SH-44 will result in overall reduced travel times. Travel time reductions equate to less congestion. Less congestion, in turn, equates to lower rates of fuel consumption. Because less fuel will be consumed as a result of the proposed action, a reduction in daily GHG emissions is assumed.

Fuel economy standards were first enacted by Congress in 1975 with the purpose of reducing energy consumption by increasing the fuel economy of cars and light trucks. Regulating vehicle fuel economy is the responsibility of the National Highway Traffic Safety Administration (NHTSA) and the EPA. NHTSA sets the fuel economy standards for passenger vehicles sold in the U.S. while EPA calculates the average fuel economy for a given vehicle model and year. In April 2010, the EPA and NHTSA jointly issued national light-duty greenhouse gas and fuel economy standards, producing the first-ever national greenhouse gas (GHG) emissions standards for passenger cars, light-duty trucks, and medium-duty passenger vehicles. As a result of these changes, vehicle fleet turnover (i.e. newer, less polluting vehicles replacing older, higher emitting vehicles) will provide reductions in GHG emissions for the proposed action. In March 2006, revised fuel economy standards were established for light trucks and sport utility vehicles. As fuel efficiency standards for vehicles sold in the U.S. become more conservative, less fuel will be consumed. Thus, less GHG emissions will be emitted per VMT.

Renewable fuels, such as ethanol and biodiesel, will replace some of the fossil fuel used in vehicles today. 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, as opposed to fossil fuel sources. EPA is responsible for promulgating regulations to ensure that gasoline sold contains a minimum volume of renewable fuel. These types of fuel reduce overall GHG emissions because they do not release sequestered carbon when combusted. 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% when compared to petroleum diesel. Therefore, as renewable fuels/fuel blends become more available in the region, the amount of GHG emissions per VMT will decrease.

Slowing the growth of VMT in the region is also important for reducing GHG emissions. Regional VMT forecasts are provided in *Communities in Motion*, the region's long-range transportation plan. *Communities in Motion* is based on the "Community Choices" growth scenario which combines modest land use intensification/densification along transportation corridors with additional employment and population growth in outlying communities. Less suburban residential development is anticipated in this growth scenario. With more infill development (and thus increased densities) along existing transportation corridors, this scenario consumes less land and is expected to help reduce the growth rate of VMT in the region. COMPASS provides local jurisdictions in the region with a performance monitoring report to evaluate the development and implementation of the goals in *Communities in Motion*.

Although not included in the funded list of projects, *Communities in Motion* also includes several unfunded or 'illustrative' public transportation projects aimed at reducing regional VMT (see http://www.compassidaho.org/documents/prodserv/mobility/PublicTransportationNeeds_InANutshell.pdf for info). Should additional funding be made available to public transportation projects, the annual growth in regional VMT could be reduced even further. This would result in additional reductions in fuel consumption and subsequent reductions in GHG emissions.

6.2 Construction Impacts

Construction activities will 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. All 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 proposed action will vary from day to day, depending on the work being done, equipment used, and weather conditions. Soil moisture, silt content of soil, wind speed, and amount of equipment operating in an area will impact the amount of dust generated from the site. The amount of PM_{10} emitted from the site will be minimized using best management practices (BMP) for construction. BMPs will 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 will be temporary and concentrated around the construction site. The amount of criteria, MSAT, and GHG pollutants emitted from these vehicles and equipment will be dependent 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 (eg. B20), install pollution control equipment (eg. particulate traps and/or oxidation catalysts), and/or limit engine idling.

Delays associated with travel through construction zones will increase emissions from on-road vehicles. However, these temporary delays or travel time increases would likely 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 halting construction activities during peak travel times.

6.3 Regional Impacts

The most recent regional emissions analysis for Ada County developed by COMPASS assumes SH-44 will provide 4 travel lanes (2 in each direction of travel) from the county line to Ballantyne Lane. This is consistent with the proposed action considered in the NEPA document.

Emissions impacts associated with intersection delay are not accounted for in the regional emissions analysis. However, except for the Star, Linder, and Park Lane intersections (latter intersection not analyzed here, as LOS is C or better), intersection delays associated with the proposed action will be less than those experienced with 2040 no build conditions. Thus, additional regional emissions reductions are anticipated as a result of improved intersections along the corridor.

The connection of SH-16 to I-84 as cleared under the *Idaho 16, I-84 to Idaho 44 Environmental Study* is assumed as part of the 2040 no build network. Therefore VMT projections for both the proposed action and the 2040 no build condition account for the impacts associated with this new connection.

Current regional emissions analyses do not account for any potential emissions reductions associated with existing travel demand management programs (e.g. Commuterride). However, continued development of these resources is anticipated through the horizon of *Communities in Motion*. Therefore, additional reductions in regional VMT and emissions (i.e. criteria pollutants, MSATs, and GHGs) are expected.

6.4 Indirect Impacts

Indirect impacts may be caused by an action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. There are no specific indirect effects identified for the proposed Project for air quality resources in the study area.

6.5 Cumulative Impacts

Cumulative effects on the environment may result from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions (both transportation and non-transportation related) regardless of what agency (Federal or non-Federal) or person undertakes such other actions. There are several other traffic improvement projects proposed in the project vicinity which, combined with this project, would have the cumulative effect of improving traffic flow, reducing delay, and reducing emissions from motor vehicles. There are no other cumulative effects identified for the proposed Project in the study area.

7. Mitigation Recommendations

The existing travel demand management programs should be maintained and enhanced as future funding allows reducing the region's VMT growth rate. Current programs in the region include "park-n-ride" lots located along SH-44, Commuteride's rideshare and vanpool programs, and public transportation programs like those offered by Valley Regional Transit.

Long-term mitigation of the air quality impacts associated with the proposed action will not be required. However, IDEQ will require the control of fugitive dust during construction. Fugitive dust emissions associated with construction will be mitigated by implementing applicable BMPs. These include:

- Spraying disturbed ground 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 of materials onto paved roadways.
- Removing tracked-out materials deposited onto adjacent roadways.
- Wetting or covering material stockpiles to prevent wind-blown emissions.
- Stabilizing disturbed areas as soon as possible to reduce wind-blown dust.

Mitigation for pollutants other than fugitive dust is not generally required by IDEQ or ITD. However, the temporary criteria pollutant, MSAT, and GHG emissions increases associated with construction are mitigated by:

- Routing and scheduling construction site traffic to non-peak traffic times to reduce traffic congestion and delay.
- Minimizing the number and duration of lane closures during construction.
- Requiring appropriate emission-control devices on all construction equipment.
- Requiring the use of cleaner burning fuels.
- Using only properly operating, well-maintained construction equipment.

8. Preparer Qualifications

Christina Schmitt has a Bachelor's of Science degree in Chemical Engineering, and Master of Science degrees in both Chemical Engineering and Atmospheric Sciences. She has 25 years of experience as an environmental engineer, focusing on air quality related services throughout the Pacific Northwest, Alaska, Arizona, California, and Canada. Much of her work has been in air quality impact modeling; this work encompasses meteorological data collection and processing, creating new approaches for model setup as required for each unique job, and analyzing modeling impact results. She has provided additional services for air permitting including feasibility studies, regulatory applicability determinations, emission inventory preparation, compliance audits/demonstrations, and BACT analyses. In addition, Christy has prepared EA/EIS air and noise sections (including monitoring and modeling) for a variety of NEPA/SEPA/CEQA documents, and for several state and local transportation projects (Alaska, California, Idaho, Oregon, Utah, and Washington). She participates in a significant amount of agency interaction for all modeling and permitting issues. Christy is a registered Professional Engineer in the State of Oregon.

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APPENDIX A

TRAFFIC – SYNCHRO

(Included Electronically)

APPENDIX B

MOVES Files

(Included Electronically)

APPENDIX C

Traffic – PM Conformity

(Included Electronically)

APPENDIX D

CAL3QHC Files

(Included Electronically)