Appendix B

APPENDIX B
AIR QUALITY

The information provided in this appendix supplements the discussion of air quality impacts contained in the Salt Lake City International Airport (Airport) Environmental Assessment (EA) for the proposed construction and operation of the final segment of the West-East Light-Rail Transit System (TRAX, for Transit Express, or Proposed Action). This appendix includes details of the laws, regulations, and guidelines provided by the U.S. Environmental Protection Agency (USEPA) and the Federal Aviation Administration (FAA) for the assessment of airport air quality in support of Federal actions. Further, the appendix includes the procedures and methodology used to prepare the emission inventory and provides results of the air quality impact analysis in **Attachment 1**, ***Computer Modeling***.

B.1 Regulatory Overview

The USEPA regulates and monitors the concentration of the criteria pollutants with respect to the NAAQS and requires that states exceeding the standards take action to reduce emissions to meet and maintain the standards. For this reason, Federal actions, such as the improvements proposed for the Airport, are not permitted to interfere with Utah's plan for improving and maintaining healthful air quality, nor can the action violate regulations mandated by the National Environmental Policy Act (NEPA) or the Clean Air Act , including the Amendments of 1990 (CAA). Air quality assessment procedures required under NEPA and CAA are separate and in some aspects unique. Some portions of the analyses overlap, which is why USEPA permits both analyses to be combined and reported as one document.

Ultimately, any analyses conducted to satisfy requirements under either NEPA or the CAA must collectively demonstrate compliance with CAA Title 1, Section 176(c)(1) before the Federal action may be approved or funded, as quoted in **Table B-1**.

Under NEPA, the FAA as a Federal agency, is required to establish procedures to determine the potential for significant adverse air quality impacts at airports. The FAA did this by requiring, in specific cases, a comparison of project pollutant concentrations to the NAAQS, as prescribed in FAA Order 1050.1E *Environmental Impacts: Policies and Procedures*, and the FAA *Air Quality Procedures for Civilian Airports & Air Force Bases* (Air Quality Handbook). Analysis under these guidelines applies regardless of the attainment status of the area where the Federal action is located. However, the FAA order establishes screening criteria to limit the NAAQS comparison assessment to only those airport actions with the potential to exceed the NAAQS. Refer to Section B.3, *National Environmental Policy Act (NEPA)*, for further information.

Table B-1
CAA TITLE 1, SECTION 176(c)(1)

No department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an implementation plan after it has been approved or promulgated under Section 110. No metropolitan planning organization designated under Section 134 of Title 23, United States Code, shall give its approval to any project, program, or plan which does not conform to an implementation plan approved or promulgated under Section 110. The assurance of conformity to such an implementation plan shall be an affirmative responsibility of the head of such department agency, or instrumentality. Conformity to an implementation plan means:

(A) conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards; and

(B) that such activities will not

(i) cause or contribute to any new violation of any standard in any area;

(ii) increase the frequency or severity of any existing violation of any standard in any area; or

(iii) delay timely attainment of any standard or any required interim emission reductions or other milestones in any area.

Source: CAA, Title 1, *Air pollution Prevention and Control*, Part D, *Plan Requirements for Nonattainment Areas*, Subpart 1, *Nonattainment Areas in General,* Section 176, *Limitation on Certain Federal Assistance*.

Under the CAA, a General Conformity evaluation is required to consider the impact of the criteria and precursor pollutants when the area is nonattainment or operates under a maintenance plan to maintain attainment of the standards. For example, an area that is maintenance for ozone would be required to provide an evaluation of Nitrogen Oxide (NO_x) and volatile organic compound (VOC) emissions, which are the precursor pollutants to ozone development. Therefore, the applicability of the conformity rules under the CAA depends primarily on the attainment status of the area where the Federal action is located. Refer to Section B.4, *Clean Air Act General Conformity Rule*, for further information.

B.2 National Environmental Policy Act (NEPA)

Under NEPA, the assessment of air quality for an airport project requires, at minimum, an inventory comparison to determine the net emissions attributable to a Federal action and the project alternatives. The emission inventory is required regardless of whether the project area is attainment for the Federal standards.[1] A "build" and "no build" emission inventory must be prepared for each alternative, and compared, to determine the relative net emission impacts.

In addition, dispersion analysis to compare project emissions to the NAAQS may be required if the project is likely to exceed the NAAQS. A summary of the NAAQS is given in **Table B-2**. When a NAAQS comparison assessment is required, computer modeling (dispersion analysis) must be conducted pursuant to Title 40 CFR

[1] The emission inventory is required unless the project is excluded, exempt, or presumed to conform.

Part 159,[2] and the results of the modeling must demonstrate compliance with CFR Title 40 Part 93.158(b)(1 and 2), as shown in **Table B-3**. The total impacts attributed to each alternative[3] must then be compared to the NAAQS provided in Table D-2. This type of comparison would show how each alterative meets or exceeds the standards.

Table B-2
NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

POLLUTANT	AVERAGING PERIOD	PRIMARY STANDARDS	SECONDARY STANDARDS
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean 24-Hour Average 3-Hour Average	0.03 PPM 0.14 PPM None	None None 0.50 PPM
Particulate Matter (PM_{10})	24-Hour Average	150 $\mu g/m^3$	150 $\mu g/m^3$
Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean 24-Hour Average	15 $\mu g/m^3$ 35$\mu g/m^3$	15 $\mu g/m^3$ 35 $\mu g/m^3$
Carbon Monoxide (CO)	8-Hour Average 1-Hour Average	9 PPM 35 PPM	None None
Ozone (O_3)	8-Hour Average (1997 Std)[1] 8-Hour Average (2008 Std)[2] 1-Hour Average	0.084 PPM 0.075 PPM 0.12 PPM	0.084 PPM 0.075 PPM 0.12 PPM
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.053 PPM	0.053 PPM
Lead (Pb) [3]	3-Month Arithmetic Mean	0.15 $\mu g/m^3$	0.15 $\mu g/m^3$

Notes: PPM is parts per million; and Std is standard.
$\mu g/m^3$ is micrograms per cubic meter.
This table contains the standards in effect at the time this environmental review was prepared.

1 USEPA, current effective 1997 standard.

2 The USEPA revised the eight-hour ozone standard, which is effective May 27, 2008. States are expected to submit recommendations for attainment of the new standard by March 2009 with identification of nonattainment areas by USEPA expected in 2010. Reference USEPA, "National Ambient Air Quality Standards for Ozone," available at http://www.epa.gov/air/ozonepollution/pdfs/2008_03_ finalrule.pdf; and USEPA "Fact Sheet: Final Revisions to the National Ambient Air Quality Standards for Ozone," available at http://www.epa.gov/air/ozonepollution/pdfs/2008_03_ factsheet.pdf.

3 Airborne lead in urban areas is primarily emitted by vehicles using leaded fuels. The chief source of lead emissions at airports would be the combustion of leaded aviation gasoline in small piston-engine general aviation aircraft. However, the USEPA and FAA have determined that an exceedance of the lead standard would be unlikely at an airport because of the use of low-lead fuel for piston-engine aircraft. Therefore, emissions of lead were not considered in this analysis.

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2 In 40 CFR Part 93.159 (July 1, 2006), the USEPA outlines the procedures to be followed for the preparation of dispersion analyses, such as what planning assumptions the analyses should be based on, what version of motor vehicle emissions models to use, required compliance to the USEPA "Guideline on Air Quality Models", which is found in Appendix W of 40 CFR Part 51 (July 1, 2006), and the future years for which an analysis should be prepared.

3 The "total impacts attributed to each alternative" would be the combination of the criteria pollutant concentration at any given location as estimated through dispersion modeling, combined with the associated ambient background concentration derived from the USEPA air quality monitoring network. The sum of these two values is referred to as the "design concentration." Refer to 40 CFR Part 51, Appendix W to Part 51, *Guideline on Air Quality Models*, Paragraph 7.2.1.1, March 1, 2007.

Table B-2, *Continued*
NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

Sources: USEPA, *Code of Federal Regulations Title 40*, Part 50 *National Primary and Secondary Ambient Air Quality Standards*, Section 50.4 – Section 50.12.
FAA, *Air Quality Procedures for Civilian Airports & Air Force Bases*, April 1997.
71 FR 61144, October 17, 2006, *Final Rule National Ambient Air Quality Standards for Particulate Matter*, revisions to the standards for PM_{10} and $PM_{2.5}$.
USEPA, *Final Rule National Ambient Air Quality Standards for Ozone*, Federal Register Volume 73 (73 FR 16436), dated Thursday, March 27, 2008. Effective date is May 27, 2008.

TABLE B-3
CFR TITLE 40: PROTECTION OF ENVIRONMENT
PART 93.158(B)(1 AND 2)
CRITERIA FOR DETERMINING CONFORMITY OF GENERAL FEDERAL ACTIONS

93.158(b) The areawide and/or local air quality modeling analyses must:
(1) Meet the requirements in 40 CFR Part 93.159; and
(2) Show that the action does not:
(i) cause or contribute to any new violation of any standard in any area; or
(ii) increase the frequency or severity of any existing violation of any standard in any area.

Source: Title 40, Protection of Environment, PART 93—*Determining Conformity of Federal Actions to State or Federal Implementation Plans*, CHAPTER I--*Environmental Protection Agency*, SUBCHAPTER C--*Air Programs*, SUBPART B—*Determining Conformity of General Federal Actions to State or Federal Implementation Plans*

Normally, for projects where net emissions do not exceed the CAA General Conformity thresholds,[4] further analysis (dispersion analysis) is not required unless the size of the airport exceeds the FAA screening criteria.[5] Even when the screening criteria are exceeded, the FAA may determine that a dispersion analysis may not be appropriate. The screening criteria, referred to as the operations and passenger screening criteria, are applied to the operational and passenger characteristics of the particular airport. An airport may be considered to have the potential to exceed the NAAQS when: (1) the airport accommodates or projects to accommodate more than 2.6 million annual passengers (MAP) (or 1.3 million annual enplanements), or (2) when the airport's current or projected combined general aviation and air taxi aircraft operations exceed 180,000 annually.

There were 21.1 MAP estimated for the Airport in calendar year 2007 with the approximately the same 21.1 MAP expected by 2012,[6] the full build-out year for the Proposed Action. There were 255,062 combined air taxi and general aviation aircraft operations estimated during 2007 with 222,132 operations expected by 2012. The combined total of annual operations of general aviation aircraft and air taxi aircraft is greater than the 180,000 screening threshold. However, the net

[4] Refer to Table D-3, *Clean Air Act De Minimis Thresholds*. The net emissions for all the criteria and precursor pollutants must be less than the thresholds; otherwise, the action may be considered to have the potential to cause significant adverse air quality impacts.
[5] FAA *Air Quality Procedures for Civilian Airports & Air Force Bases*, April 1997.
[6] Information regarding the annual enplanements and operations at the Airport were obtained from the Terminal Area Forecast (TAF).

emissions increase due to the construction and implementation of the proposed TRAX would not be expected to equal or exceed the General Conformity thresholds. As such, a detailed dispersion analysis and comparative evaluation would be unnecessary because the project is unlikely to cause an exceedance of the NAAQS. Therefore, a NAAQS comparative analysis was not conducted for this environmental review.

B.3 Clean Air Act Conformity Rules

The Clean Air Act Amendments of 1990 included provisions to ensure emissions from Federal actions will comply with the goals of the SIP and will not interfere with the plans to improve air quality in a nonattainment or maintenance area. Compliance with the SIP requires the sponsoring Federal agency to prepare an analytical demonstration of the potential for significant adverse air quality impacts from Federal actions located in nonattainment or maintenance areas. The analytical demonstration would be prepared pursuant to the General Conformity Rule (the Rule), published at 40 CFR Part 93.153.[7] The Rule applies only to Federal actions that are:

- Federally-funded or Federally-approved,
- Not a highway or transit project,
- Not identified as "exempt"[8] under the CAA and not identified on the approving Federal agency's "Presumed to Conform" list,[9]
- Located within a nonattainment or maintenance area, and
- Identified as the Federal agency's preferred alternative.

The rule establishes minimum values, referred to as *de minimis* thresholds, for the criteria and precursor pollutants. If total project-related emissions equal or exceed the *de minimis* values, a General Conformity Determination must be prepared to demonstrate conformity to the SIP. The de minimis thresholds are provided in **Table B-4**, ***Clean Air Act General Conformity De Minimis Thresholds***.

The evaluation of a Federal action under General Conformity need only consider those criteria or precursor pollutant thresholds for which the area is nonattainment or maintenance. Table B-4 shows de minimis levels for all criteria and precursor pollutants effective at the time of the preparation of this environmental review.

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7 40 CFR Part 93, Subpart B *Determining Conformity of General Federal Actions to State or Federal Implementation Plans*, July 1, 2008.

8 The Proposed Action is not listed as an action exempt from a conformity determination pursuant to 40 CFR Part 93.153(c) (July 1, 2006). An exempt project is one that the USEPA has determined would clearly have no impact on air quality at the facility, and any net increase in emissions would be so small as to be considered negligible.

9 The provisions of the CAA allow a Federal agency to submit a list of actions demonstrated to have low emissions that would have no potential to cause an exceedance of the NAAQS and are presumed to conform to the CAA conformity regulations. This list would be referred to as the "Presumed to Conform" list. The FAA Presumed to Conform list was published in the Federal Register on February 12, 2007 (72 FR 6641-6656) and includes airport projects that would not require evaluation under the General Conformity regulations.

The *de minimis* thresholds also apply for the Transportation Conformity regulations, published under 40 CFR Part 51.394.[10] Federal actions that are transit projects would be subject to the Transportation Conformity Rule. A light-rail transit project would be considered a regionally significant transit project.

[10] 40 CFR Part 51, Subpart T, *Conformity to State or Federal Implementation Plans of Transportation Plans Developed, Funded, or Approved Under Title 23 U.S. Code or the Federal Transit Act*, July 1, 2008.

Table B-4
CLEAN AIR ACT GENERAL CONFORMITY DE MINIMIS THRESHOLDS

CRITERIA AND PRECURSOR POLLUTANTS	**NONATTAINMENT AREA THRESHOLD EMISSIONS** (tons per year)	**MAINTENANCE AREA THRESHOLD EMISSIONS** (tons per year)
Carbon Monoxide (CO)	100	100
Particulate Matter (PM_{10})		100
Moderate Nonattainment Area	100	
Serious Nonattainment Area	70	
Particulate Matter ($PM_{2.5}$) (direct emissions)	100	100
Precursor pollutants SO_2, NO_x, VOC, & NH_3[1]	100	100
Sulfur Dioxide (SO_2)	100	100
Nitrogen Dioxide (NO_2)	100	100
Lead (Pb)	25	25
Ozone[2] (O_3)	*VOC/NO_x*	*VOC/NO_x*
Serious Nonattainment Area	50/50	
Severe Nonattainment Area	25/25	
Extreme Nonattainment Area	10/10	
Inside an ozone transport region[3]:		50/100
Marginal Nonattainment Area	50/100	
Moderate Nonattainment Area	50/100	
Outside an ozone transport region[3]**:**		100/100
Marginal Nonattainment Area	100/100	
Moderate Nonattainment Area	100/100	

[1] For the purposes of general conformity applicability, VOC's and ammonia emissions are only considered $PM_{2.5}$ precursors in nonattainment areas where either a State or EPA has made a finding that they significantly contribute to the $PM_{2.5}$ problem in the area. In addition, NO_X emissions are always considered a $PM_{2.5}$ precursor unless the State and EPA make a finding that NO_X emissions from sources in the State do not significantly contribute to the $PM_{2.5}$ in the area. Reference: 74 FR 17003, April 5, 2006.

[2] The rate of increase of ozone emissions is not usually evaluated in an environmental review because the formation of ozone occurs on a regional level and is the result of the photochemical reaction of NO_x and VOC in the presence of abundant sunlight and heat. Therefore, USEPA considers the rates of increase of NO_x and VOC emissions to reflect the likelihood of ozone formation on a project level.

[3] An ozone transport region (OTR) is a single transport region for ozone, comprised of the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and the Consolidated Metropolitan Statistical Area that includes the District of Columbia.

Sources: USEPA, Code of Federal Regulations (CFR) Title 40 Part 93.153(b)(1)&(2), March 25, 2008.
USEPA, 40 CFR Part 51.853, March 25, 2008.
USEPA, 40 CFR Part 51.852, March 25, 2008, definition of "precursors of a criteria pollutant."
USEPA, Federal Register Volume 71 Page 17003 (71 FR 17003), April 5, 2006, *$PM_{2.5}$ De Minimis Emission Levels for General Conformity Applicability*.
71 FR 61144, October 17, 2006, *Final Rule National Ambient Air Quality Standards for Particulate Matter*.

B.4 State Implementation Plan (SIP)

According to the CAA, each state must provide the USEPA with a SIP that will include a strategy for air quality improvement in local areas for each criteria pollutant that exceeds the NAAQS. Further, compliance to the SIP also requires establishment of General Conformity thresholds. The Ambient Air Quality Standards and conformity thresholds provided in Utah's SIP are consistent with the standards and thresholds identified in the Clean Air Act.[11]

On March 27, 2008, USEPA revised the eight-hour ozone standard to a level of 0.075 parts per million (PPM) applicable to both the primary and secondary levels. The previous standard, set in 1997, was 0.08 PPM. Because the new ozone standard is measured out to three decimal places, the 1997 standard effectively became 0.084 PPM. States must make recommendations to USEPA no later than March 2009 for areas to be designated attainment, nonattainment or unclassifiable. The USEPA will publish nonattainment areas under the new standard no earlier than 2010. Consequently, the new standard is not applicable to the Proposed Action or effective at the time this environmental review was prepared.

B.5 Indirect Source Review

Some states require an air quality review when a Federal action has the potential to cause an increase in net emissions from indirect sources. Indirect sources cause emissions that occur later in time or are farther removed from the Federal action. Depending on the state, indirect sources may be identified as motor vehicles on highways, parking at sports and entertainment facilities, or an increase in aircraft operations. The state requirement is referred to as the Indirect Source Review (ISR) and each state requiring an ISR sets thresholds for increased operation of the indirect sources. When a Federal action has the potential to exceed these thresholds, an air quality review is required to assess the character and impact of the additional emissions, which is separate from the analyses required under NEPA or the CAA. According to FAA, *Air Quality Procedures for Airports and Air Force Bases*,[12] Utah is listed as one of the states requiring an ISR.

Utah has a regulatory program for Indirect Source Review (ISR). The program requires permitting, and in some cases air quality analyses, for certain types of indirect transportation facilities. Facilities that are subject to these programs are those new parking facilities that accommodate more than 600 new parking spaces or an increase of 350 spaces to an existing parking facility. However, the Proposed Project is does not include any parking areas. In addition, the assessment of the potential increase in air emissions caused by the Proposed Project demonstrates that net emissions would not equal or exceed the relevant thresholds for the criteria pollutants (see Section B.10).

[11] Utah Administrative Rules, Rule R307-115, *General Conformity,* As in effect on December 1, 2008.
[12] FAA, *Air Quality Procedures for Civilian Airports & Air Force Bases*, Appendix J, April 1997.

B.6 Governor's Certification

The requirement for a certificate from the Governor's office assuring conformity to air and water pollution regulations was eliminated under FAA Program Guidance Letter 04-01, *Elimination of Duplicative Environmental Requirements*, Section 47106(c)(1)(b).

B.7 Assessment Procedures

Emissions associated with the Proposed Action would occur during the construction phase followed by a reduction in emissions due to the implementation phase of the TRAX. The construction phase would result in temporary emissions from construction equipment used over a period of years ending when all the TRAX is complete. The reduction in emissions from implementation of the Proposed Action, including removing vehicles from the nearby roadways were considered long-term and were assumed to begin as soon as the TRAX becomes available for use, occurring simultaneously until construction would be complete.

Construction of the proposed new TAX would cause temporary emissions due to the use of construction equipment for the following tasks.

- *Construction of TRAX line*
  - 11,000 linear feet of light rail and associated earthwork
- *Installation of box culvert*
  - Installing a total of 6 box culverts in the south crossing of the of the Surplus Canal and 2 box culverts in the north crossing of the Surplus Canal
- *Housing for the 2 traction power substations*
  - Approximately 1,000 square feet of concrete.
  - Prefabricated building
- *Construction of the transit platform*
  - An Approximately 11,750 square foot concrete platform
- *Construction of roadway*
  - One 300 foot section of roadway that measures 12 feet across.
- *Additional earthwork*
  - Addition of approximately 3,750 cubic feet of soil.
  - Addition of approximately 334 cubic feet of large-stone gravel.

The assessment of emissions due to construction and implementation of the Proposed Action was limited to emissions from construction vehicles and equipment as well as the reduction of cars as a result of the new TRAX line. The following steps were required to prepare an inventory of emissions due to construction and implementation of the Proposed Action:

- Develop the list of construction equipment necessary for each construction task, by phase;
- Determine the appropriate emission factors for each type of construction equipment used for each construction task;
- Apply USEPPA-approved methodology to calculate total construction emissions for each task;
- Estimate the number of cars that would be removed from the roadways as a result of the Proposed Action; and,
- Apply the mobile source and stationary source data to a computer model for calculation of emissions.

B.8.1 CONSTRUCTION PHASE

Final engineering for the Proposed Project is not complete. Therefore, the analysis of construction emissions was based on estimates of the type and quantity of construction equipment likely to be involved in the project. The use of equipment anticipated to be necessary for the construction of the Proposed Project were based on phased airport construction projects of similar size and scope that were successfully reviewed in previous recent airport environmental documents. As such, the following steps were evaluated for the inventory of emissions caused by equipment required to complete the construction tasks for the Proposed Project:

- Develop the list of construction equipment and materials necessary for each construction task for input into the computer spreadsheet for calculations;
- Develop the assumptions required to complete the calculations necessary to compute the total construction emissions; and
- Develop the calculations to compute total construction emissions for each task.

The total operating hours for each unit of equipment required for each individual construction task were calculated using a Microsoft® EXCEL 2003 spreadsheet. The information was then transferred to the National Mobile Inventory Model (NMIM),[13] which incorporates data from the USEPA NONROAD 2005 and MOBILE 6.02 programs.

To provide a reasonable representation of emissions likely to occur from construction, the calculation of emissions using NMIM assumed the use of nonroad diesel equipment compliant to the Federal Tier 1 and Tier 2 emission standards applicable in 2007.[14] The emissions for all the individual construction tasks were added together to determine the total construction emissions attributable to the Proposed Project on an annual basis.

The estimated annual emissions due to construction are provided in **Table B-5**, ***Construction Emissions***.

[13] USEPA, *NMIM2005*, 2005.

[14] USEPA, Code of Federal Regulations, Title 40, Part 89 (40 CFR Part 89), July 1, 2007.

Table B-5
CONSTRUCTION EMISSIONS
Salt Lake City International Airport

Phase	EMISSIONS (tons per year)					
	CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Additional Earthwork	0.001	0.000	0.002	0.000	0.000	0.000
Transit Platform Construction	0.015	0.003	0.026	0.001	0.002	0.001
Traction Power Substation #1	0.002	0.001	0.004	0.000	0.000	0.000
Traction Power Substation #2	0.002	0.001	0.004	0.000	0.000	0.000
LRT Construction	0.390	0.071	0.601	0.011	0.018	0.016
Culvert Construction	0.072	0.007	0.029	0.001	0.001	0.001
Roadway Construction	0.006	0.001	0.006	0.000	0.000	0.000
Total	**0.487**	**0.083**	**0.673**	**0.013**	**0.021**	**0.019**

Source: National Mobile Inventory Model (NMIM), 2006.
Landrum & Brown analysis, 2008.

B.8.2 IMPLEMENTATION PHASE - MOBILE SOURCE EMISSIONS

Emissions from motor vehicles were estimated using the FAA Emissions and Dispersion Modeling System (EDMS Version 5.1) computer program. The EDMS computer program is the Federal Aviation Administration (FAA)-required and USEPA-approved model for estimating emissions and calculating pollutant concentrations from airport-specific sources. The model is also approved for predicting emissions from motor vehicles on roadways and in parking lots.

The estimated annual emissions reduction due to mobile sources is provided in **Table B-6**, ***Implementation Phase - Mobile Source Emissions***.

Table B-6
IMPLEMENTATION PHASE – MOBILE SOURCE EMISSIONS
Salt Lake City International Airport

SOURCES	EMISSIONS (tons per year)					
	CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Roadways	-34.27	-1.97	-2.80	-0.03	-0.12	-0.06
Parking	-10.61	-0.87	-0.83	-0.01	-0.03	-0.01
Stationary Sources	0.57	0.04	0.71	0.00	0.05	0.05
Total	**-44.30**	**-2.80**	**-2.93**	**-0.04**	**-0.09**	**-0.02**

Source: FAA, Emissions and Dispersion Modeling System (EDMS v. 5.1), 2008.
Landrum & Brown analysis, 2008.

B.9 Fugitive Emissions

Construction emissions from the Proposed Action would be expected to contribute to fugitive emissions of particulate matter during construction. The airport sponsor could minimize fugitive emissions by the use of BMP pursuant to guidelines included in FAA *Standards for Specifying Construction of Airports*.[15] The following methods of controlling dust and other airborne particles could be implemented to the maximum possible extent:

- Minimizing the exposed area of erodible earth
- Use of water sprinkler trucks for material piles and unpaved areas
- Use of particle-trap exhaust filters
- Reduction of idling of diesel engines
- Use of covered haul trucks to move construction material
- Use of dust palliatives or penetration asphalt on haul roads
- Use of plastic sheet coverings for material piles

B.10 Summary of Findings and Conclusion

A summary of the maximum annual emissions from construction and the annual reduction in emissions from the mobile sources are given in **Table B-7**, ***Net Emission Inventory Summary***.

Table B-7
NET EMISSION INVENTORY SUMMARY
Salt Lake City International Airport

Sources	EMISSIONS (tons per year)						
	CO	VOC	NO_X	SO_X	PM_{10}	$PM_{2.5}$	TOTAL
YEAR 1							
Construction Phase	0.243	0.041	0.336	0.006	0.010	0.010	0.648
Total	**0.243**	**0.041**	**0.336**	**0.006**	**0.010**	**0.010**	**0.648**
YEAR 2							
Construction Phase	0.243	0.041	0.336	0.006	0.010	0.010	0.648
Total	**0.243**	**0.041**	**0.336**	**0.006**	**0.010**	**0.010**	**0.648**
Year 2015							
Implementation Phase	-44.301	-2.797	-2.929	-0.035	-0.091	-0.023	-50.177
Total	**-44.301**	**-2.797**	**-2.929**	**-0.035**	**-0.091**	**-0.023**	**-50.177**

Note: The airport is located in an ozone maintenance area; the relevant criteria and precursor pollutants are VOCs and NOx

Source: Landrum & Brown analysis, 2009.

[15] FAA, *Standards for Specifying Construction of Airports*, Item P-156, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control, AC 150/5370-10A, February 17, 1989.

The assessment revealed the following findings:

- The airport is located in an area that is in nonattainment for PM_{10} and SO_2 and maintenance for CO and O_3.
- The Proposed Action is assumed to be applicable under the CAA General Conformity Rule.
- The Proposed Action would cause a temporary increase in criteria and precursor pollutant emissions due to the use of construction equipment through 2011, but will result in a long-term net decrease in mobile-source emissions associated with the use of the TRAX.
- The maximum annual emissions from construction and implementation occurring from 2010 through 2012 would not equal or exceed the applicable General Conformity thresholds of 100 tons per year, each, of CO, SO_X, PM_{10}, $PM_{2.5}$, NO_X and VOC emissions (*de minimis*).
- The years of greatest net emissions on an annual basis would be 2010 and 2011; which were projected to be *de minimis*.

Results of the emission analysis demonstrate that the net increase in emissions due to construction and implementation of the TRAX would be *de minimis* and would not equal or exceed the applicable General Conformity thresholds applicable for all of the pollutants of concern, even during the year of greatest emissions, 2010. As such, the Proposed Action would meet the General Conformity regulations of the CAA and a General Conformity Determination would not be required.

Applicability of the requirement for a NAAQS comparison under NEPA for airport projects is not dependent upon the project area's air quality attainment status, but rather on the results of the General Conformity evaluation and, in some cases, the size of the airport. Because the Proposed Action has been demonstrated to conform under the General Conformity Rule, and both the temporary and long-term increases in emissions are *de minimis* for the criteria and precursor pollutants CO, VOC, NO_x, SO_x, PM_{10}, and $PM_{2.5}$, further analysis to show compliance to the NAAQS is unnecessary and is assumed to comply with the Utah SIP. As such, the Proposed Action would not have the potential to cause significant adverse air quality impacts in Salt Lake County. Therefore, construction and implementation of the Proposed Action would meet the requirements of CAA Section 176(c)(1) and would not:

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

No further analysis or reporting under NEPA or the CAA is required with respect to air quality.

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ATTACHMENT 1
COMPUTER MODELING

This attachment provides a printout of the input and output files for the EDMS computer model used to calculate vehicle emissions caused by the Proposed Action.

1.1 MODELING ASSUMPTIONS IN EDMS

Modeling assumptions are necessary to characterize emission sources when site-specific data is not available. Site specific data should be used whenever possible, but assumptions may be introduced to reduce the complexity of the modeling to maintain a worst-case analysis. The following is a summary of the modeling assumptions used for the EDMS emissions inventory:

- MOBILE 6.02 emission factors. Assumed a national fleet, which is a standard mix of vehicles reflecting all vehicle types, all model years, and all fuel types. National fleets were used for the analysis of passenger vehicle emissions. Emissions from shuttles were assumed to reflect light-duty trucks (up to 6,000 gross weight) powered by gasoline, with an average manufacture year of 2012. Due to the normal reduction in emissions factors from year to year, applying the average manufacture year of 2012 will result in the most conservative reduction in emissions.
- Average speed. Assumed average speed of vehicles inside the parking lots of 10 miles per hour. Speed on the roadways assigned assuming the speed limits on each segment of roadway.

1.2 EDMS INPUT AND OUTPUT FILES

A printout of the EDMS input and output files are provided beginning on the following page.

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EDMS 5.1 Model Inputs for SLC - Airport TRAX Line 030209 Study

Study Created:	Tue Dec 09 14:43:42 2008
Report Date:	Fri Mar 20 11:03:04 2009
Study Pathname:	P:\SLC\SLC Light Rail EA 2008\Environmental Categories\Air Quality\Implementation\EDMS\SLC - Airport TRAX Line 030209\SLC - Airport TRAX Line 030209.edm

Study Setup

Unit System:	English
Dispersion Modeling:	Dispersion is not enabled for this study
Speciated Hydrocarbon Modeling:	Speciated Hydrocarbon Modeling is not enabled for this study
Analysis Years:	2015

Scenarios

Scenario Name:	Description:	Add a description.
Baseline	Aircraft Times in Mode Basis:	Performance-Based
	Taxi Time Modeling:	User-specified Taxi Times
	FOA3 Sulfur-to-Sulfate Conversion Rate:	2.400000 %

Airports

Airport Name:	Salt Lake City Intl
IATA Code:	SLC
ICAO Code:	KSLC
FAA Code:	
Country:	US
State:	Utah
City:	Salt Lake City
Airport Description:	Salt Lake City Intl
Latitude:	40.788°
Longitude:	-111.978°
Northing:	4515726.53
Easting:	417504.85
UTM Zone:	12
Elevation:	4227.00 feet
PM Modeling Methodology:	FOA3a (Sulfur-to-Sulfate Conversion Rate = 5.0%, Fuel Sulfur Content = 0.068%)

Scenario-Airport: Baseline, Salt Lake City Intl

Weather

Baseline, Salt Lake City Intl

Mixing Height:	4303.00 feet
Temperature:	52.00 °F
Daily High Temperature:	62.35 °F
Daily Low Temperature:	41.65 °F
Pressure:	25.73 inches of Hg
Sea Level Pressure:	29.98 inches of Hg
Relative Humidity:	53.32
Wind Speed:	7.46 knots
Wind Direction:	0.00 °
Ceiling:	99999.99 feet

Visibility: 50.00 miles

The user has used annual averages.

Base Elevation: 4227.00 feet

Date Range: Thursday, January 01, 2004 to Friday, December 31, 2004

Source Data File Location:

Upper Air Data File Location:

Quarter-Hourly Operational Profiles

Baseline, Salt Lake City Intl

Name: DEFAULT

Quarter-Hour	Weight	Quarter-Hour	Weight	Quarter-Hour	Weight	Quarter-Hour	Weight
12:00am to 12:14 am	1.000000	6:00am to 6:14am	1.000000	12:00pm to 12:14 pm	1.000000	6:00pm to 6:14pm	1.000000
12:15am to 12:29 am	1.000000	6:15am to 6:29am	1.000000	12:15pm to 12:29 pm	1.000000	6:15pm to 6:29pm	1.000000
12:30am to 12:44 am	1.000000	6:30am to 6:44am	1.000000	12:30pm to 12:44 pm	1.000000	6:30pm to 6:44pm	1.000000
12:45am to 12:59 am	1.000000	6:45am to 6:59am	1.000000	12:45pm to 12:59 pm	1.000000	6:45pm to 6:59pm	1.000000
1:00am to 1:14am	1.000000	7:00am to 7:14am	1.000000	1:00pm to 1:14pm	1.000000	7:00pm to 7:14pm	1.000000
1:15am to 1:29am	1.000000	7:15am to 7:29am	1.000000	1:15pm to 1:29pm	1.000000	7:15pm to 7:29pm	1.000000
1:30am to 1:44am	1.000000	7:30am to 7:44am	1.000000	1:30pm to 1:44pm	1.000000	7:30pm to 7:44pm	1.000000
1:45am to 1:59am	1.000000	7:45am to 7:59am	1.000000	1:45pm to 1:59pm	1.000000	7:45pm to 7:59pm	1.000000
2:00am to 2:14am	1.000000	8:00am to 8:14am	1.000000	2:00pm to 2:14pm	1.000000	8:00pm to 8:14pm	1.000000
2:15am to 2:29am	1.000000	8:15am to 8:29am	1.000000	2:15pm to 2:29pm	1.000000	8:15pm to 8:29pm	1.000000
2:30am to 2:44am	1.000000	8:30am to 8:44am	1.000000	2:30pm to 2:44pm	1.000000	8:30pm to 8:44pm	1.000000
2:45am to 2:59am	1.000000	8:45am to 8:59am	1.000000	2:45pm to 2:59pm	1.000000	8:45pm to 8:59pm	1.000000
3:00am to 3:14am	1.000000	9:00am to 9:14am	1.000000	3:00pm to 3:14pm	1.000000	9:00pm to 9:14pm	1.000000
3:15am to 3:29am	1.000000	9:15am to 9:29am	1.000000	3:15pm to 3:29pm	1.000000	9:15pm to 9:29pm	1.000000
3:30am to 3:44am	1.000000	9:30am to 9:44am	1.000000	3:30pm to 3:44pm	1.000000	9:30pm to 9:44pm	1.000000
3:45am to 3:59am	1.000000	9:45am to 9:59am	1.000000	3:45pm to 3:59pm	1.000000	9:45pm to 9:59pm	1.000000
4:00am to 4:14am	1.000000	10:00am to 10:14am	1.000000	4:00pm to 4:14pm	1.000000	10:00pm to 10:14pm	1.000000
4:15am to 4:29am	1.000000	10:15am to 10:29am	1.000000	4:15pm to 4:29pm	1.000000	10:15pm to 10:29pm	1.000000
4:30am to 4:44am	1.000000	10:30am to 10:44am	1.000000	4:30pm to 4:44pm	1.000000	10:30pm to 10:44pm	1.000000
4:45am to 4:59am	1.000000	10:45am to 10:59am	1.000000	4:45pm to 4:59pm	1.000000	10:45pm to 10:59pm	1.000000
5:00am to 5:14am	1.000000	11:00am to 11:14am	1.000000	5:00pm to 5:14pm	1.000000	11:00pm to 11:14pm	1.000000
5:15am to 5:29am	1.000000	11:15am to 11:29am	1.000000	5:15pm to 5:29pm	1.000000	11:15pm to 11:29pm	1.000000
5:30am to 5:44am	1.000000	11:30am to 11:44am	1.000000	5:30pm to 5:44pm	1.000000	11:30pm to 11:44pm	1.000000
5:45am to 5:59am	1.000000	11:45am to 11:59am	1.000000	5:45pm to 5:59pm	1.000000	11:45pm to 11:59pm	1.000000

Daily Operational Profiles

Baseline, Salt Lake City Intl

Name: DEFAULT

Day	Weight	Day	Weight
Monday	1.000000	Friday	1.000000
Tuesday	1.000000	Saturday	1.000000
Wednesday	1.000000	Sunday	1.000000

Thursday	1.000000

Monthly Operational Profiles

Baseline, Salt Lake City Intl

Name: DEFAULT

Month	Weight	Month	Weight
January	1.000000	July	1.000000
February	1.000000	August	1.000000
March	1.000000	September	1.000000
April	1.000000	October	1.000000
May	1.000000	November	1.000000
June	1.000000	December	1.000000

Aircraft

Baseline, Salt Lake City Intl

Default Taxi Out Time:	19.000000 min
Default Taxi In Time:	7.000000 min

Year:	Uses Schedule?	Schedule Filename:
2015	No	(None)

GSE Population

Baseline, Salt Lake City Intl

None.

Parking Facilities

Baseline, Salt Lake City Intl

Parking Facility Name: Parking

Vehicle Type:	Default Fleet Mix (all types, fuels & ages)
Fuel:	Gasoline
Manufactured Year:	2012
Average Speed	10 mph
Average Distance Traveled:	3340.00 feet
Average Idle Time:	1.50 mins

Number of Levels:	1	
Release Height:	4.92 feet	
Level Spacing	9.84 feet	
Elevation:	4227.00 feet	
Point:	X (feet)	Y (feet)
1	0.00	0.00
2	1082.68	0.00
3	1082.68	1640.42
4	0.00	1640.42

Year: 2015

Number of Vehicles per Year:	1.10604e+006
Quarter-Hourly Operational profile:	DEFAULT
Daily Operational profile:	DEFAULT
Monthly Operational	

Monthly Operational Profile:	DEFAULT

The user has NOT edited the following emission factors:

CO (g/veh):	8.7
THC (g/veh):	-1
NMHC (g/veh):	0.6998
VOC (g/veh):	0.7096
NOX (g/veh):	0.6838
SOX (g/veh):	0.0062
PM-10 (g/veh):	0.0225
PM-25 (g/veh):	0.012
TOG (g/veh):	
BENZENE (g/veh):	0.021652
MTBE (g/veh):	0
1,3-BUTA (g/veh):	0.002991
FORMALDEHYDE (g/veh):	0.008835
ACETALDEHYDE (g/veh):	0.005991
ACROLEIN (g/veh):	0.000387

Roadways

Baseline, Salt Lake City Intl

Roadway Name: N. Terminal 1

Vehicle Type:	Default Fleet Mix (all types, fuels & ages)
Fuel:	Gasoline
Manufactured Year:	2012
Average Speed:	55 mph
Roadway Length:	0.12 miles
Release Height:	

Width:	65.62 feet		
Point:	X (feet)	Y (feet)	Elevation (feet)
1	0.00	0.00	0
2	328.08	0.00	0

Year: 2015

Traffic Volume:	1301225
Quarter-Hourly Operational profile:	DEFAULT
Daily Operational profile:	DEFAULT
Monthly Operational Profile:	DEFAULT

The user has NOT edited the following emission factors:

CO (g/veh):	9.86
THC (g/veh):	-1
NMHC (g/veh):	0.44
VOC (g/veh):	0.446
NOX (g/veh):	0.823
SOX (g/veh):	0.0089
PM-10 (g/veh):	0.0323
PM-25 (g/veh):	0.0171
TOG (g/veh):	
BENZENE (g/veh):	0.016608

MTBE (g/veh):	0
1,3-BUTA (g/veh):	0.002227
FORMALDEHYDE (g/veh):	0.005524
ACETALDEHYDE (g/veh):	0.004143
ACROLEIN (g/veh):	0.000237

Roadway Name: N. Terminal 2

Vehicle Type:	Default Fleet Mix (all types, fuels & ages)
Fuel:	Gasoline
Manufactured Year:	2012
Average Speed:	45 mph
Roadway Length:	0.41 miles
Release Height:	

Width:	65.62 feet		
Point:	X (feet)	Y (feet)	Elevation (feet)
1	0.00	0.00	0
2	328.08	0.00	0

Year: 2015

Traffic Volume:	1301225
Quarter-Hourly Operational profile:	DEFAULT
Daily Operational profile:	DEFAULT
Monthly Operational Profile:	DEFAULT

The user has NOT edited the following emission factors:

CO (g/veh):	9.252
THC (g/veh):	-1
NMHC (g/veh):	0.456
VOC (g/veh):	0.463
NOX (g/veh):	0.741
SOX (g/veh):	0.0089
PM-10 (g/veh):	0.0323
PM-25 (g/veh):	0.0171
TOG (g/veh):	
BENZENE (g/veh):	0.016904
MTBE (g/veh):	0
1,3-BUTA (g/veh):	0.002276
FORMALDEHYDE (g/veh):	0.005756
ACETALDEHYDE (g/veh):	0.004265
ACROLEIN (g/veh):	0.000248

Roadway Name: N. Terminal 3

Vehicle Type:	Default Fleet Mix (all types, fuels & ages)
Fuel:	Gasoline
Manufactured Year:	2012
Average Speed:	35 mph
Roadway Length:	0.24 miles
Release Height:	

Width:	65.62 feet		
Point:	X (feet)	Y (feet)	Elevation (feet)
1	0.00	0.00	0
2	328.08	0.00	0

Year: 2015

Traffic Volume:	1301225
Quarter-Hourly Operational profile:	DEFAULT
Daily Operational profile:	DEFAULT
Monthly Operational Profile:	DEFAULT

The user has NOT edited the following emission factors:

CO (g/veh):	8.698
THC (g/veh):	-1
NMHC (g/veh):	0.478
VOC (g/veh):	0.485
NOX (g/veh):	0.704
SOX (g/veh):	0.0089
PM-10 (g/veh):	0.0323
PM-25 (g/veh):	0.0171
TOG (g/veh):	
BENZENE (g/veh):	0.017283
MTBE (g/veh):	0
1,3-BUTA (g/veh):	0.002349
FORMALDEHYDE (g/veh):	0.006202
ACETALDEHYDE (g/veh):	0.004474
ACROLEIN (g/veh):	0.000268

Roadway Name: N. Terminal 4

Vehicle Type:	Default Fleet Mix (all types, fuels & ages)
Fuel:	Gasoline
Manufactured Year:	2012
Average Speed:	25 mph
Roadway Length:	0.20 miles
Release Height:	

Width:	65.62 feet		
Point:	X (feet)	Y (feet)	Elevation (feet)
1	0.00	0.00	0
2	328.08	0.00	0

Year: 2015

Traffic Volume:	1301225
Quarter-Hourly Operational profile:	DEFAULT
Daily Operational profile:	DEFAULT
Monthly Operational Profile:	DEFAULT

The user has NOT edited the following emission factors:

CO (g/veh):	8.898
THC (g/veh):	-1
NMHC (g/veh):	0.528
VOC (g/veh):	0.536
NOX (g/veh):	0.733
SOX (g/veh):	0.0089
PM-10 (g/veh):	0.0323
PM-25 (g/veh):	0.0171
TOG (g/veh):	
BENZENE (g/veh):	0.018827
MTBE (g/veh):	0
1,3-BUTA (g/veh):	0.002585
FORMALDEHYDE (g/veh):	0.00724
ACETALDEHYDE (g/veh):	0.005046
ACROLEIN (g/veh):	0.000314

Roadway Name:
N. Terminal 5

Vehicle Type:	Default Fleet Mix (all types, fuels & ages)
Fuel:	Gasoline
Manufactured Year:	2012
Average Speed:	10 mph
Roadway Length:	0.45 miles
Release Height:	

Width:	65.62 feet		
Point:	X (feet)	Y (feet)	Elevation (feet)
1	0.00	0.00	0
2	328.08	0.00	0

Year:
2015

Traffic Volume:	1301225
Quarter-Hourly Operational profile:	DEFAULT
Daily Operational profile:	DEFAULT
Monthly Operational Profile:	DEFAULT

The user has NOT edited the following emission factors:

CO (g/veh):	11.432
THC (g/veh):	-1
NMHC (g/veh):	0.814
VOC (g/veh):	0.827
NOX (g/veh):	0.955
SOX (g/veh):	0.0089
PM-10 (g/veh):	0.0323
PM-25 (g/veh):	0.0172
TOG (g/veh):	
BENZENE (g/veh):	0.028343
MTBE (g/veh):	0
1,3-BUTA (g/veh):	0.003924
FORMALDEHYDE (g/veh):	0.011792
ACETALDEHYDE	

ACETALDEHYDE (g/veh):	0.007922
ACROLEIN (g/veh):	0.000515

Roadway Name: N. Terminal 6

Vehicle Type:	Default Fleet Mix (all types, fuels & ages)
Fuel:	Gasoline
Manufactured Year:	2012
Average Speed:	30 mph
Roadway Length:	0.55 miles
Release Height:	

Width:	65.62 feet		
Point:	X (feet)	Y (feet)	Elevation (feet)
1	0.00	0.00	0
2	328.08	0.00	0

Year: 2015

Traffic Volume:	1301225
Quarter-Hourly Operational profile:	DEFAULT
Daily Operational profile:	DEFAULT
Monthly Operational Profile:	DEFAULT

The user has NOT edited the following emission factors:

CO (g/veh):	8.707
THC (g/veh):	-1
NMHC (g/veh):	0.5
VOC (g/veh):	0.507
NOX (g/veh):	0.71
SOX (g/veh):	0.0089
PM-10 (g/veh):	0.0323
PM-25 (g/veh):	0.0171
TOG (g/veh):	
BENZENE (g/veh):	0.017972
MTBE (g/veh):	0
1,3-BUTA (g/veh):	0.002455
FORMALDEHYDE (g/veh):	0.00665
ACETALDEHYDE (g/veh):	0.004724
ACROLEIN (g/veh):	0.000288

Roadway Name: N. Terminal 7

Vehicle Type:	Default Fleet Mix (all types, fuels & ages)
Fuel:	Gasoline
Manufactured Year:	2012
Average Speed:	35 mph
Roadway Length:	0.13 miles
Release Height:	

Width:	65.62 feet		
Point:	X (feet)	Y (feet)	Elevation (feet)
1	0.00	0.00	0
2	328.08	0.00	0

Year: 2015

Traffic Volume:	1301225
Quarter-Hourly Operational profile:	DEFAULT
Daily Operational profile:	DEFAULT
Monthly Operational Profile:	DEFAULT

The user has NOT edited the following emission factors:

CO (g/veh):	8.698
THC (g/veh):	-1
NMHC (g/veh):	0.478
VOC (g/veh):	0.485
NOX (g/veh):	0.704
SOX (g/veh):	0.0089
PM-10 (g/veh):	0.0323
PM-25 (g/veh):	0.0171
TOG (g/veh):	
BENZENE (g/veh):	0.017283
MTBE (g/veh):	0
1,3-BUTA (g/veh):	0.002349
FORMALDEHYDE (g/veh):	0.006202
ACETALDEHYDE (g/veh):	0.004474
ACROLEIN (g/veh):	0.000268

Roadway Name: N. Terminal 8

Vehicle Type:	Default Fleet Mix (all types, fuels & ages)
Fuel:	Gasoline
Manufactured Year:	2012
Average Speed:	45 mph
Roadway Length:	0.29 miles
Release Height:	

Width:	65.62 feet		
Point:	X (feet)	Y (feet)	Elevation (feet)
1	0.00	0.00	0
2	328.08	0.00	0

Year: 2015

Traffic Volume:	1301225
Quarter-Hourly Operational profile:	DEFAULT
Daily Operational profile:	DEFAULT
Monthly Operational Profile:	DEFAULT

The user has NOT edited the following emission factors:

CO (g/veh):	9.252
THC (g/veh):	-1
NMHC (g/veh):	0.456
VOC (g/veh):	0.463

NOX (g/veh):	0.741
SOX (g/veh):	0.0089
PM-10 (g/veh):	0.0323
PM-25 (g/veh):	0.0171
TOG (g/veh):	
BENZENE (g/veh):	0.016904
MTBE (g/veh):	0
1,3-BUTA (g/veh):	0.002276
FORMALDEHYDE (g/veh):	0.005756
ACETALDEHYDE (g/veh):	0.004265
ACROLEIN (g/veh):	0.000248

Roadway Name:
N. Terminal 9

Vehicle Type:	Default Fleet Mix (all types, fuels & ages)
Fuel:	Gasoline
Manufactured Year:	2012
Average Speed:	55 mph
Roadway Length:	0.14 miles
Release Height:	

Width:	65.62 feet		
Point:	X (feet)	Y (feet)	Elevation (feet)
1	0.00	0.00	0
2	328.08	0.00	0

Year:
2015

Traffic Volume:	1301225
Quarter-Hourly Operational profile:	DEFAULT
Daily Operational profile:	DEFAULT
Monthly Operational Profile:	DEFAULT

The user has NOT edited the following emission factors:

CO (g/veh):	9.86
THC (g/veh):	-1
NMHC (g/veh):	0.44
VOC (g/veh):	0.446
NOX (g/veh):	0.823
SOX (g/veh):	0.0089
PM-10 (g/veh):	0.0323
PM-25 (g/veh):	0.0171
TOG (g/veh):	
BENZENE (g/veh):	0.016608
MTBE (g/veh):	0
1,3-BUTA (g/veh):	0.002227
FORMALDEHYDE (g/veh):	0.005524
ACETALDEHYDE (g/veh):	0.004143
ACROLEIN (g/veh):	0.000237

Stationary Source Name: Security

Stationary Category:	Boiler/Space Heater
Stationary Type:	Natural Gas: Wall Fired Boiler, <100 Million BTU/hr, Uncontrolled

This stationary source is modeled as a point

Elevation:	4227.00 feet
Release Height:	65.62 feet
Gas Velocity:	15.00 m/s
Temperature:	400.00 °F
CO EI :	1.3000Kg/1000 m^3
THC EI :	0.1800Kg/1000 m^3
NOx EI :	1.6000Kg/1000 m^3
SO2 EI :	0.0100Kg/1000 m^3
PM-10 EI :	0.1200Kg/1000 m^3
CO Pollution Control Factor :	0.00 %
TOC Pollution Control Factor :	0.00 %
NOx Pollution Control Factor :	0.00 %
SO2 Pollution Control Factor :	0.00 %
PM-10 Pollution Control Factor:	0.00 %

Point:	X (feet)	Y (feet)
1	0.00	0.00

Year: 2015

1,000s of m³ Used	400.8
Quarter-Hourly Operational profile:	DEFAULT
Daily Operational profile:	DEFAULT
Monthly Operational Profile:	DEFAULT

The user has NOT edited the emission factors.

Training Fires — Baseline, Salt Lake City Intl

None.

Gates — Baseline, Salt Lake City Intl

None.

Taxiways — Baseline, Salt Lake City Intl

None.

Runways — Baseline, Salt Lake City Intl

None.

Taxipaths — Baseline, Salt Lake City Intl

None.

Configurations — Baseline, Salt Lake City Intl

None.

Buildings — Baseline, Salt Lake City Intl

None.

Discrete Cartesian Receptors — Baseline, Salt Lake City Intl

None.

Discrete Polar Receptors — Baseline, Salt Lake City Intl

None.

Cartesian Receptor Networks — Baseline, Salt Lake City Intl

None.

Polar Receptor Networks — Baseline, Salt Lake City Intl

None.

User-Created Aircraft — Baseline, Salt Lake City Intl

None.

User-Created GSE — Baseline, Salt Lake City Intl

None.

User-Created APU — Baseline, Salt Lake City Intl

None.

Emissions Inventory Summary

(Short Tons per Year)

Baseline - Salt Lake City Intl 2015

Category	CO2									
Aircraft	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GSE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
APUs	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Parking Facilities	N/A	10.607	N/A	0.853	0.865	0.925	0.834	0.008	0.027	0.015
Roadways	N/A	34.268	N/A	1.941	1.970	2.095	2.802	0.032	0.117	0.062
Stationary Sources	N/A	0.574	N/A	0.031	0.038	0.086	0.707	0.004	0.053	0.053
Training Fires	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grand Total	N/A	45.449	N/A	2.825	2.873	3.107	4.343	0.044	0.197	0.130

Vehicular Source Emissions Inventory

(Short Tons per Year)

Baseline - Salt Lake City Intl 2015

Name	Type									
Parking	Parking	10.607	N/A	0.853	0.865	0.925	0.834	0.008	0.027	0.015
N. Terminal 1	Roadway	1.669	N/A	0.074	0.075	0.080	0.139	0.002	0.005	0.003
N. Terminal 2	Roadway	5.388	N/A	0.266	0.270	0.285	0.432	0.005	0.019	0.010
N. Terminal 3	Roadway	2.969	N/A	0.163	0.166	0.175	0.240	0.003	0.011	0.006
N. Terminal 4	Roadway	2.489	N/A	0.148	0.150	0.159	0.205	0.002	0.009	0.005
N. Terminal 5	Roadway	7.428	N/A	0.529	0.537	0.578	0.621	0.006	0.021	0.011
N. Terminal 6	Roadway	6.856	N/A	0.394	0.399	0.424	0.559	0.007	0.025	0.013
N. Terminal 7	Roadway	1.584	N/A	0.087	0.088	0.093	0.128	0.002	0.006	0.003
N. Terminal 8	Roadway	3.862	N/A	0.190	0.193	0.205	0.309	0.004	0.013	0.007
N. Terminal 9	Roadway	2.022	N/A	0.090	0.091	0.097	0.169	0.002	0.007	0.004

Stationary Source Emissions Inventory

(Short Tons per Year)

Baseline - Salt Lake City Intl 2015

Name	Type									
Security	Stationary Source	0.574	N/A	0.031	0.038	0.086	0.707	0.004	0.053	0.053

```
Class,model year, number of vehicles,annual mileage
HDDBS,2007,000,000000
HDDBT,2007,000,000000
HDDV2b,2007,000,000000
HDDV3,2007,000,000000
HDDV4,2007,000,000000
HDDV5,2007,000,000000
HDDV6,2007,000,000000
HDDV7,2007,000,000000
HDDV8a,2007,001,000263
HDDV8b,2007,000,000000
HDGB,2007,000,000000
HDGV2b,2007,000,000000
HDGV3,2007,000,000000
HDGV4,2007,000,000000
HDGV5,2007,000,000000
HDGV6,2007,000,000000
HDGV7,2007,000,000000
HDGV8a,2007,000,000000
HDGV8b,2007,000,000000
LDDT12,2007,000,000000
LDDT34,2007,000,000000
LDDV,2007,000,000000
LDGT1,2007,000,000000
LDGT2,2007,000,000000
LDGT3,2007,000,000000
LDGT4,2007,000,000000
LDGV,2007,000,000000
MC,2007,000,000000
```

SCC, Hpmax, ModelYear, TechType, Population, Hours/Year
Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
2270002009, 011, 2007, ALL, 1, 1
DEFAULT
2270002048, 175, 2007, ALL, 1, 1
DEFAULT
2270002069, 600, 2007, ALL, 1, 1
DEFAULT
2270002081, 175, 2007, ALL, 1, 1
DEFAULT

Class,model year, number of vehicles,annual mileage
HDDBS,2007,000,000000
HDDBT,2007,000,000000
HDDV2b,2007,000,000000
HDDV3,2007,000,000000
HDDV4,2007,000,000000
HDDV5,2007,000,000000
HDDV6,2007,000,000000
HDDV7,2007,000,000000
HDDV8a,2007,001,000038
HDDV8b,2007,000,000000
HDGB,2007,000,000000
HDGV2b,2007,000,000000
HDGV3,2007,000,000000
HDGV4,2007,000,000000
HDGV5,2007,000,000000
HDGV6,2007,000,000000
HDGV7,2007,000,000000
HDGV8a,2007,000,000000
HDGV8b,2007,000,000000
LDDT12,2007,000,000000
LDDT34,2007,000,000000
LDDV,2007,000,000000
LDGT1,2007,000,000000
LDGT2,2007,000,000000
LDGT3,2007,000,000000
LDGT4,2007,000,000000
LDGV,2007,000,000000
MC,2007,000,000000

SCC, Hpmax, ModelYear, TechType, Population, Hours/Year
Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
2270002009, 011, 2007, ALL, 1, 0
DEFAULT
2270002048, 175, 2007, ALL, 1, 0
DEFAULT
2270002069, 600, 2007, ALL, 1, 0
DEFAULT
2270002081, 175, 2007, ALL, 1, 0
DEFAULT

```
Class,model year, number of vehicles,annual mileage
HDDBS,2007,000,000000
HDDBT,2007,000,000000
HDDV2b,2007,000,000000
HDDV3,2007,000,000000
HDDV4,2007,000,000000
HDDV5,2007,000,000000
HDDV6,2007,000,000000
HDDV7,2007,000,000000
HDDV8a,2007,000,000000
HDDV8b,2007,001,000140
HDGB,2007,000,000000
HDGV2b,2007,000,000000
HDGV3,2007,000,000000
HDGV4,2007,000,000000
HDGV5,2007,000,000000
HDGV6,2007,000,000000
HDGV7,2007,000,000000
HDGV8a,2007,000,000000
HDGV8b,2007,000,000000
LDDT12,2007,000,000000
LDDT34,2007,000,000000
LDDV,2007,000,000000
LDGT1,2007,000,000000
LDGT2,2007,000,000000
LDGT3,2007,000,000000
LDGT4,2007,000,000000
LDGV,2007,000,000000
MC,2007,000,000000
```

SCC, Hpmax, ModelYear, TechType, Population, Hours/Year
Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
2270002060, 175, 2007, ALL, 1, 15
DEFAULT
2270003010, 175, 2007, ALL, 1, 41
DEFAULT

```
Class,model year, number of vehicles,annual mileage
HDDBS,2007,000,000000
HDDBT,2007,000,000000
HDDV2b,2007,000,000000
HDDV3,2007,000,000000
HDDV4,2007,000,000000
HDDV5,2007,000,000000
HDDV6,2007,000,000000
HDDV7,2007,000,000000
HDDV8a,2007,001,003713
HDDV8b,2007,001,000560
HDGB,2007,000,000000
HDGV2b,2007,000,000000
HDGV3,2007,000,000000
HDGV4,2007,000,000000
HDGV5,2007,000,000000
HDGV6,2007,000,000000
HDGV7,2007,000,000000
HDGV8a,2007,000,000000
HDGV8b,2007,000,000000
LDDT12,2007,000,000000
LDDT34,2007,000,000000
LDDV,2007,000,000000
LDGT1,2007,000,000000
LDGT2,2007,000,000000
LDGT3,2007,000,000000
LDGT4,2007,000,000000
LDGV,2007,000,000000
MC,2007,000,000000
```

SCC, Hpmax, ModelYear, TechType, Population, Hours/Year
Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
2265006010, 006, 2007, ALL, 1, 26
DEFAULT
2270002009, 011, 2007, ALL, 1, 10
DEFAULT
2270002036, 600, 2007, ALL, 1, 2
DEFAULT
2270002045, 300, 2007, ALL, 1, 4
DEFAULT
2270002048, 175, 2007, ALL, 1, 6
DEFAULT
2270002069, 600, 2007, ALL, 1, 7
DEFAULT
2270002081, 175, 2007, ALL, 1, 6
DEFAULT

```
Class,model year, number of vehicles,annual mileage
HDDBS,2007,000,000000
HDDBT,2007,000,000000
HDDV2b,2007,000,000000
HDDV3,2007,000,000000
HDDV4,2007,000,000000
HDDV5,2007,000,000000
HDDV6,2007,000,000000
HDDV7,2007,001,064167
HDDV8a,2007,001,034650
HDDV8b,2007,001,010150
HDGB,2007,000,000000
HDGV2b,2007,001,009625
HDGV3,2007,000,000000
HDGV4,2007,000,000000
HDGV5,2007,000,000000
HDGV6,2007,000,000000
HDGV7,2007,000,000000
HDGV8a,2007,000,000000
HDGV8b,2007,000,000000
LDDT12,2007,000,000000
LDDT34,2007,000,000000
LDDV,2007,000,000000
LDGT1,2007,000,000000
LDGT2,2007,000,000000
LDGT3,2007,000,000000
LDGT4,2007,000,000000
LDGV,2007,000,000000
MC,2007,000,000000
```

SCC, Hpmax, ModelYear, TechType, Population, Hours/Year
Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
2270002009, 011, 2007, ALL, 1, 155
DEFAULT
2270002036, 600, 2007, ALL, 1, 52
DEFAULT
2270002048, 175, 2007, ALL, 1, 122
DEFAULT
2270002066, 075, 2007, ALL, 1, 550
DEFAULT
2270002081, 175, 2007, ALL, 1, 122
DEFAULT
2270006005, 025, 2007, ALL, 1, 672
DEFAULT

```
Class,model year, number of vehicles,annual mileage
HDDBS,2007,000,000000
HDDBT,2007,000,000000
HDDV2b,2007,000,000000
HDDV3,2007,000,000000
HDDV4,2007,000,000000
HDDV5,2007,000,000000
HDDV6,2007,000,000000
HDDV7,2007,001,000158
HDDV8a,2007,001,000150
HDDV8b,2007,001,000350
HDGB,2007,000,000000
HDGV2b,2007,001,000024
HDGV3,2007,000,000000
HDGV4,2007,000,000000
HDGV5,2007,000,000000
HDGV6,2007,000,000000
HDGV7,2007,000,000000
HDGV8a,2007,000,000000
HDGV8b,2007,000,000000
LDDT12,2007,000,000000
LDDT34,2007,000,000000
LDDV,2007,000,000000
LDGT1,2007,000,000000
LDGT2,2007,000,000000
LDGT3,2007,000,000000
LDGT4,2007,000,000000
LDGV,2007,000,000000
MC,2007,000,000000
```

SCC, Hpmax, ModelYear, TechType, Population, Hours/Year
Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
2270002009, 011, 2007, ALL, 1, 1
DEFAULT
2270002036, 600, 2007, ALL, 1, 0
DEFAULT
2270002048, 175, 2007, ALL, 1, 0
DEFAULT
2270002066, 075, 2007, ALL, 1, 1
DEFAULT
2270002081, 175, 2007, ALL, 1, 0
DEFAULT

```
Class,model year, number of vehicles,annual mileage
HDDBS,2007,000,000000
HDDBT,2007,000,000000
HDDV2b,2007,000,000000
HDDV3,2007,000,000000
HDDV4,2007,000,000000
HDDV5,2007,000,000000
HDDV6,2007,000,000000
HDDV7,2007,001,000086
HDDV8a,2007,001,000358
HDDV8b,2007,000,000000
HDGB,2007,000,000000
HDGV2b,2007,001,000178
HDGV3,2007,000,000000
HDGV4,2007,000,000000
HDGV5,2007,000,000000
HDGV6,2007,000,000000
HDGV7,2007,000,000000
HDGV8a,2007,000,000000
HDGV8b,2007,000,000000
LDDT12,2007,000,000000
LDDT34,2007,000,000000
LDDV,2007,000,000000
LDGT1,2007,000,000000
LDGT2,2007,000,000000
LDGT3,2007,000,000000
LDGT4,2007,000,000000
LDGV,2007,000,000000
MC,2007,000,000000
```

SCC, Hpmax, ModelYear, TechType, Population, Hours/Year
Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
2270002009, 011, 2007, ALL, 1, 2
DEFAULT
2270002030, 300, 2007, ALL, 1, 3
DEFAULT
2270002036, 600, 2007, ALL, 1, 0
DEFAULT
2270002048, 175, 2007, ALL, 1, 5
DEFAULT
2270002066, 075, 2007, ALL, 1, 1
DEFAULT
2270002081, 175, 2007, ALL, 1, 5
DEFAULT
2270006005, 025, 2007, ALL, 1, 0
DEFAULT

```
Class,model year, number of vehicles,annual mileage
HDDBS,2007,000,000000
HDDBT,2007,000,000000
HDDV2b,2007,000,000000
HDDV3,2007,000,000000
HDDV4,2007,000,000000
HDDV5,2007,000,000000
HDDV6,2007,000,000000
HDDV7,2007,000,000000
HDDV8a,2007,000,000000
HDDV8b,2007,001,000350
HDGB,2007,000,000000
HDGV2b,2007,000,000000
HDGV3,2007,000,000000
HDGV4,2007,000,000000
HDGV5,2007,000,000000
HDGV6,2007,000,000000
HDGV7,2007,000,000000
HDGV8a,2007,000,000000
HDGV8b,2007,000,000000
LDDT12,2007,000,000000
LDDT34,2007,000,000000
LDDV,2007,000,000000
LDGT1,2007,000,000000
LDGT2,2007,000,000000
LDGT3,2007,000,000000
LDGT4,2007,000,000000
LDGV,2007,000,000000
MC,2007,000,000000
```

SCC, Hpmax, ModelYear, TechType, Population, Hours/Year
Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec

```
Class,model year, number of vehicles,annual mileage
HDDBS,2007,000,000000
HDDBT,2007,000,000000
HDDV2b,2007,000,000000
HDDV3,2007,000,000000
HDDV4,2007,000,000000
HDDV5,2007,000,000000
HDDV6,2007,000,000000
HDDV7,2007,001,001764
HDDV8a,2007,001,001225
HDDV8b,2007,000,000000
HDGB,2007,000,000000
HDGV2b,2007,001,000265
HDGV3,2007,000,000000
HDGV4,2007,000,000000
HDGV5,2007,000,000000
HDGV6,2007,000,000000
HDGV7,2007,000,000000
HDGV8a,2007,000,000000
HDGV8b,2007,000,000000
LDDT12,2007,000,000000
LDDT34,2007,000,000000
LDDV,2007,000,000000
LDGT1,2007,000,000000
LDGT2,2007,000,000000
LDGT3,2007,000,000000
LDGT4,2007,000,000000
LDGV,2007,000,000000
MC,2007,000,000000
```

SCC, Hpmax, ModelYear, TechType, Population, Hours/Year
Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, Sep, Oct, Nov, Dec
2270002009, 011, 2007, ALL, 1, 5
DEFAULT
2270002036, 600, 2007, ALL, 1, 2
DEFAULT
2270002048, 175, 2007, ALL, 1, 5
DEFAULT
2270002066, 075, 2007, ALL, 1, 15
DEFAULT
2270002081, 175, 2007, ALL, 1, 5
DEFAULT