QUARRY ROW SUBDIVISION PROJECT
AIR QUALITY STUDY

Prepared for:

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Project 4530-A-01

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EXECUTIVE SUMMARY

This *Executive Summary* is a brief overview of the analysis presented in this air quality study. It is not intended to be a comprehensive description of the analysis. For more details, the reader is referred to the full description presented in this study.

The proposed Quarry Row Subdivision Project includes 64 single family dwelling unit lots located in the northeastern portion of the City of Rocklin in Placer County. The project site is located on the southeastern corner of the intersection of Pacific Street and Grove Street.

This air quality study presents an evaluation of the construction-related and operational impacts of the proposed project on the air quality environment.

The project site is located within the Sacramento Valley Air Basin (SVAB). The SVAB portion of Placer County is designated a state and federal nonattainment area for ozone. The area is a state nonattainment area for inhalable particulate matter smaller than 10 microns in diameter (designated PM_{10}), and is a federal nonattainment area for fine particulate matter smaller than 2.5 microns in diameter ($PM_{2.5}$). The area is designated attainment for carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead.

Implementation of the Quarry Row Subdivision Project would result in the generation of short-term construction-related air pollutant emissions. However, the amount of project-related emissions would be less than the significance thresholds. Therefore, construction of the project is considered to have a less-than-significant impact on criteria pollutant air quality.

Air quality impacts due to long-term operation of the project were assessed by evaluating criteria pollutant emissions. Project-related emission levels would be less than the significance thresholds. Therefore, operation of the project is considered to have a less-than-significant impact on criteria pollutant air quality.

Screening-level analyses were performed to assess the project-related effect on CO concentrations. These analyses concluded that the project would not result in violations of the federal and state CO standards. Therefore, the impact of the project on CO concentrations is considered to be less than significant.

An assessment of the effects of the Quarry Row Subdivision Project on global climate change was conducted. The project-related change in greenhouse gas (GHG) emissions was quantified. Implementation of the project is determined to have a less-than-significant impact on global climate change.

SECTION 1
INTRODUCTION

This air quality study has been prepared to assess the air quality impacts of the Quarry Row Subdivision Project. This study contains information that will be used in the preparation of a California Environmental Quality Act (CEQA) environmental checklist for this project. The City of Rocklin is the CEQA lead agency for the project environmental review, and will prepare a CEQA environmental document for the project.

To facilitate incorporation of this document into the CEQA environmental checklist, this document is organized and formatted to be consistent with a CEQA *Environmental Checklist Form*, which is Appendix G of *State CEQA Guidelines* (Title 14 California Code of Regulations section 15000 et seq.).

This air quality study presents assessments of the localized air quality impacts of the proposed project, the impacts of the project on regional air quality, and construction-related impacts of the project.

Following this *Introduction* section, this air quality study presents a description of:

- the proposed project,
- the impacts of the project on air quality, and
- the impacts of the project on global climate change and greenhouse gases.

All modeling results are included in the *Technical Appendix* of this air quality study.

SECTION 2
PROJECT DESCRIPTION

The following is a brief description of the Quarry Row Subdivision Project, focusing on those aspects relevant to potential air quality impacts. The following description is based on information provided by Lowell Development, Inc. (Lowell pers. comm.).

2.1 PROJECT LOCATION

The proposed Quarry Row Subdivision Project in located on the northeastern portion of the City of Rocklin, on the southeast corner of the intersection of Pacific Street and Grove Street. The regional location of the project site is shown in **Figure 1**.

The following describes current land uses in the immediate vicinity of the Quarry Row units:

- The Quarry Row units would be located on a site which currently includes a musical conservatory, which will be demolished for the project.
- Single-family residences are located adjacent to the Quarry Row site on east, south, and southwest sides.
- An office park is northwest of the project site, and retail center on the northeast side.

2.2 PROJECT COMPONENTS

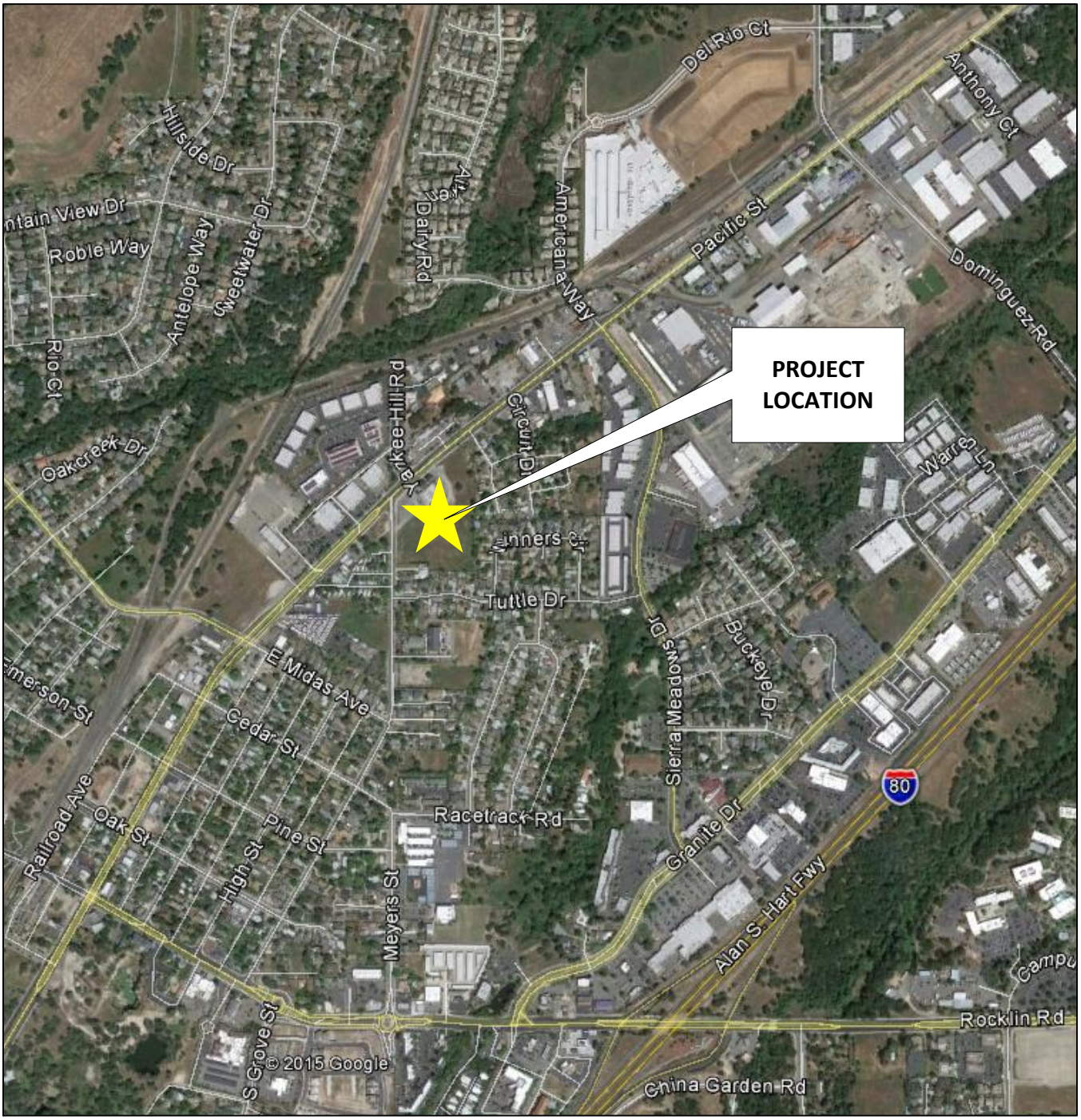
The proposed Quarry Row Subdivision Project would include 64 single family dwelling unit lots, covering 5.71 acres. The Quarry Row site is shown in **Figure 2**.

The project site would include approximately 1.46 acres of asphalt-paved surface, for a total project site size of 7.17 acres.

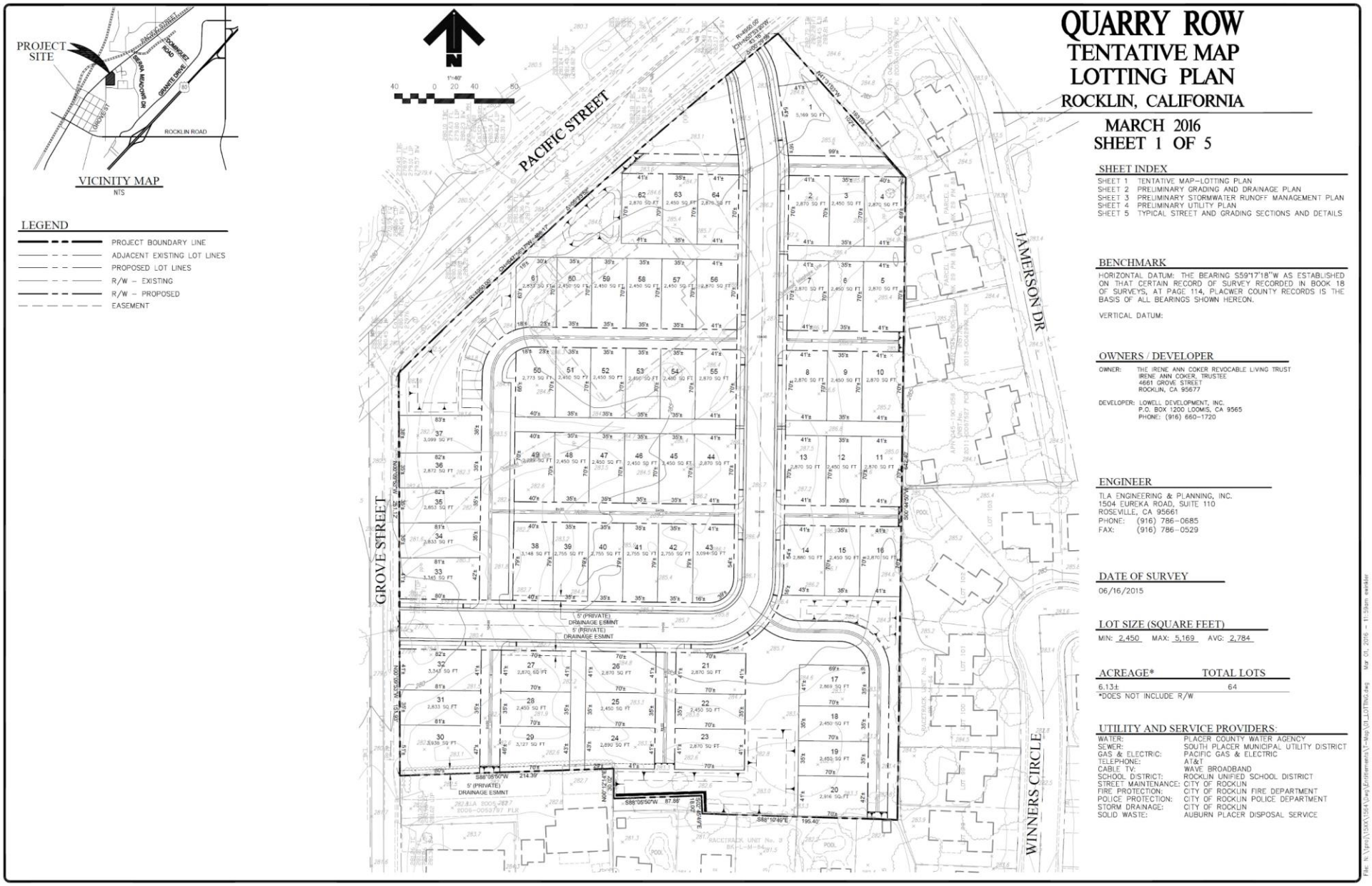
As shown in **Figure 3**, implementation of the Quarry Row Subdivision Project would include demolition of the Conservatory of Dance and Performing Arts center currently on the site.

Based on information provided by Lowell Development, Inc., the dwelling units in the Quarry Row Subdivision Project are assumed to include natural gas-burning fireplaces.

For this air quality study, construction of the Quarry Row Subdivision Project is assumed to begin in July of 2017 and be completed in October of 2018.



VICINITY MAP


PROJECT SITE
PACIFIC STREET
DOMINGUEZ ROAD
SIERRA MEADOWS DR
GRANITE DRIVE
GROVE ST
ROCKLIN ROAD
VICINITY MAP
NTS
LEGEND
PROJECT BOUNDARY LINE
ADJACENT EXISTING LOT LINES
PROPOSED LOT LINES
R/W – EXISTING
R/W – PROPOSED
EASEMENT
PACIFIC STREET
GROVE STREET
JAMERSON DR
WINNERS CIRCLE
5' (PRIVATE) DRAINAGE ESMNT
QUARRY ROW
TENTATIVE MAP
LOTTING PLAN
ROCKLIN, CALIFORNIA
MARCH 2016
SHEET 1 OF 5
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BENCHMARK
HORIZONTAL DATUM: THE BEARING S59°17'18"W AS ESTABLISHED ON THAT CERTAIN RECORD OF SURVEY RECORDED IN BOOK 18 OF SURVEYS, AT PAGE 114, PLACWER COUNTY RECORDS IS THE BASIS OF ALL BEARINGS SHOWN HEREON.
VERTICAL DATUM:
OWNERS / DEVELOPER
OWNER: THE IRENE ANN COKER REVOCABLE LIVING TRUST
IRENE ANN COKER, TRUSTEE
4661 GROVE STREET
ROCKLIN, CA 95677
DEVELOPER: LOWELL DEVELOPMENT, INC.
P.O. BOX 1200 LOOMIS, CA 9565
PHONE: (916) 660–1720
ENGINEER
TLA ENGINEERING & PLANNING, INC.
1504 EUREKA ROAD, SUITE 110
ROSEVILLE, CA 95661
PHONE: (916) 786–0685
FAX: (916) 786–0529
DATE OF SURVEY
06/16/2015
LOT SIZE (SQUARE FEET)
MIN: 2,450 MAX: 5,169 AVG: 2,784
ACREAGE* TOTAL LOTS
6.13± 64
*DOES NOT INCLUDE R/W
UTILITY AND SERVICE PROVIDERS:
WATER: PLACER COUNTY WATER AGENCY
SEWER: SOUTH PLACER MUNICIPAL UTILITY DISTRICT
GAS & ELECTRIC: PACIFIC GAS & ELECTRIC
TELEPHONE: AT&T
CABLE TV: WAVE BROADBAND
SCHOOL DISTRICT: ROCKLIN UNIFIED SCHOOL DISTRICT
STREET MAINTENANCE: CITY OF ROCKLIN
FIRE PROTECTION: CITY OF ROCKLIN FIRE DEPARTMENT
POLICE PROTECTION: CITY OF ROCKLIN POLICE DEPARTMENT
STORM DRAINAGE: CITY OF ROCKLIN
SOLID WASTE: AUBURN PLACER DISPOSAL SERVICE

SITE PLAN

SECTION 3
AIR QUALITY

The following is the *Air Quality* portion of the CEQA *Environmental Checklist Form*. The checklist form is presented as Appendix G of the *State CEQA Guidelines* (Title 14 California Code of Regulations section 15000 et seq.).

III.	**AIR QUALITY** Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	**X**	☐
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	**X**	☐
c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	**X**	☐
d.	Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	**X**	☐
e.	Create objectionable odors affecting a substantial number of people?	☐	☐	**X**	☐

As shown above, the *Air Quality* portion of the CEQA *Environmental Checklist Form* is presented as items III.a through III.e. A discussion of each of these items is presented below.

3.1 DISCUSSION OF ITEMS III.a AND III.b

The Quarry Row Subdivision Project site is located in the jurisdiction of the Placer County Air Pollution Control District (PCAPCD). Portions of the PCAPCD area are within three air basins. The Quarry Row Subdivision Project site is within the SVAB portion of the PCAPCD. The SVAB portion of the PCAPCD is designated attainment for the federal PM_{10} standard, but is located within the Sacramento region's severe non-attainment area for federal ozone standards. The PCAPCD, along with other local air districts in the Sacramento region, are required to comply with and implement the State Implementation Plan (SIP) to demonstrate when and how the region can attain the federal ozone standards. Accordingly, the Sacramento Metropolitan Air Quality Management District (SMAQMD) prepared the *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* in December 2008, with input from the other air districts in the region. The SMAQMD adopted the Plan on January 22, 2009; followed by the Feather River Air Quality Management District (FRAQMD) on February 2, 2009; the El Dorado County Air Quality Management District (EDCAQMD) on February 10, 2009; the Yolo-Solano Air Quality Management District (YSAQMD) on February 11, 2009; and the PCAPCD on February 19, 2009. The California Air Resources Board (CARB) determined that the Plan meets Clean Air Act requirements and approved the Plan on March 26, 2009 as a revision to the SIP.

The *Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* demonstrates how existing and new control strategies would provide the future emission reductions needed to meet the federal Clean Air Act requirements. Adoption of all reasonably available control measures is required for attainment. Measures could include, but are not limited to the following: regional mobile incentive programs; urban forest development programs; and local regulatory measures for emission reductions related to indirect source rules, architectural coating, automotive refinishing, natural gas production and processing, asphalt concrete, and various others.

The SMAQMD held a public hearing on the *2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan*. This hearing was conducted on behalf of the air districts in the Sacramento Federal Ozone Nonattainment Area, including the YSAQMD, the FRAQMD, the PCAPCD, and the EDCAQMD. The *2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan* was adopted on September 26, 2013 and submitted to the CARB. CARB approved the plan on November 21, 2013, and submitted it to the United States Environmental Protection Agency to be included in or revise the SIP.

To evaluate ozone and other air pollutant emissions, the PCAPCD has established significance thresholds for emissions of ozone precursors reactive organic gas (ROG) and nitrogen oxides (NO_x), PM_{10}, and CO. Significance thresholds used in this air quality study are from the PCAPCD document *CEQA Air Quality Handbook – Assessing and Mitigating Air Quality Impacts Under CEQA* (Placer County Air Pollution Control District 2012) and PCAPCD staff (Green pers. comm.).

As the CEQA lead agency, the City of Rocklin uses the PCAPCD significance thresholds listed in **Table 1** as air quality standards in the evaluation of air quality impacts associated with proposed development projects. Thus, if the proposed project's emissions exceed the pollutant thresholds presented in **Table 1**, the project would be considered to have a potentially significant effect on regional air quality and the attainment of federal and State Ambient Air Quality Standards.

Table 1 presents two sets of thresholds for ROG and NO_x: project-level thresholds and cumulative impact thresholds. In describing project-level thresholds, the PCAPCD document *CEQA Air Quality Handbook – Assessing and Mitigating Air Quality Impacts Under CEQA* states,

> "An EIR process may be recommended by the District to the lead agency if the project related emissions cannot be mitigated to a less than significant level and the project cannot achieve the thresholds described below."

Conversely, in describing cumulative impact thresholds, the handbook states,

> "The District does not recommend the use of this cumulative threshold to determine the need for an EIR. Rather, this threshold is used by the District to recommend mitigation measures to offset the project's cumulative air quality impacts."

Project-level thresholds include 82 pounds per day (ppd) for ROG and 82 ppd for NO_x. Cumulative impact thresholds are 10 ppd for ROG and 10 ppd for NO_x. As stated in the handbook,

> "It is very important to emphasize that the primary reason the District applies a '10 lbs per day' standard as the threshold for a project's cumulative impacts resulting from its ROG and NOx emissions is because Placer County lies within the federal ozone nonattainment area."

Table 1. Placer County Air Pollution Control District Significance Thresholds

Pollutant	Project-Level Thresholds	Cumulative Impact Thresholds
Reactive Organic Gases (ROG)	82	10
Nitrogen Oxides (NO_x)	82	10
Inhalable Particulate Matter (PM_{10})	82	N/A
Carbon Monoxide (CO)	550	N/A

Sources: Placer County Air Pollution Control District 2012,
Placer County Air Pollution Control District 2014, and Green pers. comm.

Notes: Per Placer County Air Pollution Control District 2012, project-level thresholds are applied to both construction-related and operational emissions, cumulative-level thresholds are applied to operational emissions.

All thresholds are expressed in pounds per day.

"N/A" = Not applicable.

Implementation of the Quarry Row Subdivision Project would contribute to increases of ROG, NO_x, PM_{10}, and CO emissions in the study area. Short-term construction-related and long-term operational emissions associated with the project were estimated using the CalEEMod emissions modeling program (South Coast Air Quality Management District 2013). CalEEMod is a land use emissions computer model designed to provide a platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operation of a variety of land use projects. The model quantifies direct emissions from construction and operation (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

More detailed information on the CalEEMod model is available at the internet website http://caleemod.com/. Output files from the CalEEMod model, as applied to the Quarry Row Subdivision Project, are presented in the *Technical Appendix* of this air quality study.

The CalEEMod emissions model contains default data characterizing the construction and operation of land use development projects, such as the Quarry Row Subdivision Project. The CalEEMod default values were used except where:

- project-specific data are available,
- data specific to the PCAPCD are available, and
- updated technical data are available.

Project-specific data included the size of the project site and the construction schedule (Lowell pers. comm.).

Data specific to the PCAPCD included use of architectural coatings with 50 grams per liter (g/l) volatile organic compound (VOC) content, consistent with PCAPCD Rule 218 (Green pers. comm.).

Updated technical data included use of the Institute of Transportation Engineers document *Trip Generation Manual, 9th Edition* (Institute of Transportation Engineers 2012).

Vehicle trip generation estimates for the Quarry Row Subdivision Project are from the *Traffic Impact Analysis for Pacific Street Subdivision* (KD Anderson & Associates 2015).

3.1.1 Construction Emissions

Construction of the Quarry Row Subdivision Project would generate air pollutants intermittently within the project site, and the vicinity of the site, until all construction has been completed. The air pollutant emission sources would include the following:

- dust from grading and any infrastructure improvements,
- ROG emissions from internal project site roadway surfacing,
- emissions from construction equipment and vehicles, and
- emissions from architectural coating.

Dust from construction activities can cause impacts both locally and regionally. The dry climate of the area during the summer months, combined with the fine, silty soils of the region, create a high potential for dust generation. Increased dustfall and locally elevated levels of PM_{10} near construction activities are expected. Depending on the weather, soil conditions and amount of construction activity taking place at any one time, fugitive dust emissions could affect existing land uses near the project site. In addition, ROG and NO_x emissions would be generated as construction moves forward. As shown in **Table 1**, the PCAPCD thresholds of significance for construction are 82 ppd for ROG, NO_x and PM_{10}, and 550 ppd for CO. **Table 2** shows the estimated maximum construction emissions of ROG, NO_x, PM_{10}, and CO for the Quarry Row Subdivision Project.

The CalEEMod output files are presented in the *Technical Appendix* of this air quality study.

As shown in **Table 2**, the estimated levels of ROG, NO_x, PM_{10}, and CO emissions would be below the PCAPCD thresholds. Therefore, the construction-related impacts of the Quarry Row Subdivision Project are considered to be less than significant and no mitigation measures are required.

3.1.2 Operational Emissions

Development of the Quarry Row Subdivision Project would result in the generation of ROG and NO_x emissions, which are ozone-precursor pollutants, as well as CO and PM_{10} emissions. The PCAPCD threshold of significance for operational impacts is 82 ppd for ROG, NO_x and PM_{10}, and 550 ppd for CO. The predicted operational emissions for the Quarry Row Subdivision Project are shown in **Table 3**.

As shown in **Table 3**, the project's operational emissions would be below the PCAPCD thresholds of significance. Thus, the Quarry Row Subdivision Project would not substantially contribute to the District's nonattainment status of ozone, and would not result in projected violations of the PM_{10} or CO standards. Because operation of the Quarry Row Subdivision Project would result in criteria air pollutant emissions below the PCAPCD significance thresholds, operation of the proposed project would have a less-than-significant impact on air quality.

3.1.3 Conclusion

Both construction-related and operational emissions due to the Quarry Row Subdivision Project would be below the applicable PCAPCD thresholds of significance for ROG, NO_x, PM_{10}, and CO. Therefore, the project is considered to have a less-than-significant impact on air quality.

Table 2. Construction-Related Emissions

Pollutant	Project-Related Emissions	Project-Level Significance Thresholds	Significant Impact?
Reactive Organic Gases (ROG)		82	No
2017	8.66		
2018	39.39		
Nitrogen Oxides (NO_x)		82	No
2017	81.48		
2018	26.18		
Inhalable Particulate Matter (PM_{10})		82	No
2017	24.73		
2018	3.47		
Carbon Monoxide (CO)		550	No
2017	66.39		
2018	25.14		

Sources: Lowell pers. comm., CalEEMod emissions model.
Thresholds from Placer County Air Pollution Control District 2012 and Green pers. comm.

Notes: All values are expressed in pounds per day.
Values shown are maximums of all construction phases.
Values shown are the maximum of summer and winter values.

Table 3. Operational Emissions

Pollutant	Project-Related Emissions	Project-Level Significance Thresholds	Significant Impact?
Reactive Organic Gases (ROG)	7.62	82	No
Nitrogen Oxides (NO_x)	5.33	82	No
Inhalable Particulate Matter (PM_{10})	4.13	82	No
Carbon Monoxide (CO)	25.69	550	No

Sources: Lowell pers. comm., KD Anderson & Associates 2015, CalEEMod emissions model.
Thresholds from Placer County Air Pollution Control District 2012
and Green pers. comm.

Notes: All values are expressed in pounds per day.
Values shown are the maximum of summer and winter values.

3.2 DISCUSSION OF ITEM III.c

Placer County is classified as a severe non-attainment area for the federal ozone standards. To improve air quality and attain the health-based standards, reductions in emissions are necessary within non-attainment areas. The project is part of a pattern of urbanization occurring in the greater Sacramento ozone non-attainment area. The growth and combined population, vehicle usage, and business activity within the non-attainment area from the project, in combination with other past, present and reasonably foreseeable projects within Rocklin and surrounding areas, would either delay attainment of the standards or require the adoption of additional controls on existing and future air pollution sources to offset project-related emission increases. In addition, the project would cumulatively contribute to regional air quality health effects through emissions of criteria and mobile source air pollutants.

The PCAPCD uses cumulative thresholds of significance of 10 ppd for ROG and 10 ppd of NO_x, applied to project operational emissions. Although a cumulative threshold, the threshold is applied to project-level emissions. As a CEQA lead agency, the City has adopted the PCAPCD cumulative threshold of significance. Cumulative thresholds of significance for PM_{10} or CO emissions have not been established by the PCAPCD or the City. The daily increase in regional emissions from automobile travel and area sources associated with the proposed project is shown for ROG and NO_x in **Table 4**.

As shown in **Table 4**, operational emissions of ROG and NO_x would be less than 10 ppd, the PCAPCD cumulative threshold of significance. Therefore, the cumulative impact associated with the project is considered to be less than significant and no mitigation measures are required.

Table 4. Operational Emissions for Cumulative Thresholds

Pollutant	Project-Related Emissions	Cumulative Thresholds	Exceeds Cumulative Thresholds?
Reactive Organic Gases (ROG)	7.62	10	No
Nitrogen Oxides (NO_x)	4.77	10	No

Sources: KD Anderson & Associates 2016, CalEEMod emissions model.
Thresholds from Placer County Air Pollution Control District 2012.

Notes: All values are expressed in pounds per day.
Per Placer County Air Pollution Control District 2013, all values shown are summer (ozone season) values.

3.3 DISCUSSION OF ITEM III.d

During short-term construction and long-term operation of the Quarry Row Subdivision Project, project-related activities would generate ROG, NO_x, and PM_{10} emissions. On-site sensitive receptors and nearby off-site sensitive receptors would be exposed to these emissions. However, as described above in Sections 3.1 and 3.2, project-related emissions would be below significance thresholds established by the PCAPCD. Therefore, exposure of sensitive receptors to ROG, NO_x, and PM_{10} emissions is considered less than significant and no mitigation measures are required.

3.3.1 Roadway and Intersection Emissions (Operational Indirect Sources)

Concentrations of CO along roadways and particularly at intersections are associated with the number of vehicles and the level of traffic congestion. Slow-moving vehicles result in elevated concentrations of CO at sensitive receptors adjacent to the roadways. In suburban or urban areas, traffic congestion at intersections can result in elevated CO concentrations.

The PCAPCD document *CEQA Air Quality Handbook – Assessing and Mitigating Air Quality Impacts Under CEQA* (Placer County Air Pollution Control District 2012) presents a screening method for assessing the potential for violations of the CO air quality standards. The handbook states,

> "Screening for carbon monoxide (CO) impacts can be used to estimate whether or not a project traffic impact would cause a potential CO hotspot on any given intersection. If either of the following criteria is true of any intersection affected by the project traffic, the project can potentially exceed the CO standard:
>
> - "A traffic study for the project indicates that the peak-hour Level of Service (LOS) on one or more streets or at one or more intersections (both signalized and non-signalized) in the project vicinity will be degraded from an acceptable LOS (e.g., A, B, C, or D) to an unacceptable LOS (e.g., LOS E or F); or
>
> - "A traffic study indicates that the project will substantially worsen an already existing unacceptable peak-hour LOS on one or more streets or at one or more intersections in the project vicinity. 'Substantially worsen' includes situations where delay would increase by 10 seconds or more when project-generated traffic is included.
>
> "If either of these criteria is true of any intersection affected by the project with traffic mitigation incorporated, the District would recommend the applicant/consultant conduct a CO dispersion modeling analysis using a program such as CALINE-4."

If neither of these criteria is true, the project is considered to have a less-than-significant impact on roadway and intersection CO concentrations.

A traffic impact study was conducted for the Quarry Row Subdivision Project (KD Anderson & Associates 2015). The traffic impact study analyzed traffic operations the proposed project added to three background traffic conditions:

- Existing Conditions,
- near-term future Existing Plus Approved Projects Conditions, and
- long-term future Cumulative Conditions.

The traffic impact study analyzed LOS at eight intersections in the vicinity of the project site during both a.m. peak hour and p.m. peak hour conditions. For a more detailed description of the traffic analysis, the reader is referred to the traffic impact study (KD Anderson & Associates 2015).

The following is a summary of the Quarry Row Subdivision traffic analysis:

- Under Existing Plus Project conditions, all eight study intersections would experience overall intersection LOS A during both a.m. peak hour and p.m. peak hour conditions.

- Under Existing Plus Approved Projects Plus Project conditions, all eight study intersections would experience overall intersection LOS A or B during both a.m. peak hour and p.m. peak hour conditions.

- Under Cumulative Plus Project conditions, all eight study intersections would experience overall intersection LOS D or better during both a.m. peak hour and p.m. peak hour conditions.

Therefore, based on the screening criteria presented in the PCAPCD *CEQA Air Quality Handbook*, the Quarry Row Subdivision Project is considered to not have the potential to result in violations of CO air quality standards along roadways and intersections. The project's impact on CO concentrations is considered to be less than significant and no mitigation measures are required.

3.3.2 Freeways and High Traffic Volume Roads

As described in the PCAPCD document *CEQA Air Quality Handbook – Assessing and Mitigating Air Quality Impacts Under CEQA* (Placer County Air Pollution Control District 2012), high traffic volume freeways and roads are considered a source of toxic air contaminant (TAC) emissions. The handbook defines high traffic volume freeways and roads as those with more than 100,000 vehicles per day.

According to PCAPCD staff, the TAC emissions effects from a freeway or road with more than 100,000 vehicles per day should be considered for land uses with sensitive receptors proposed to be located within 1,000 feet of the freeway or road (Green pers. comm.). Sensitive receptors include residential dwelling units, schools, and medical facilities. For land use with sensitive

receptors proposed within 1,000 of high traffic volume freeways and roads, Table 4-1, CARB Recommended Minimum Separations for Sensitive Land Uses, of *CEQA Air Quality Handbook – Assessing and Mitigating Air Quality Impacts Under CEQA* should be applied.

According to Caltrans (California Department of Transportation 2014), State Route (SR) 65 northwest of I-80 has an average daily traffic volume of 109,000 vehicles per day. The distance between the edge of SR 65 and the Quarry Row Subdivision Project is approximately 11,000 feet. Because the project site is more than 1,000 feet from SR 65, the TAC emissions impact associated with the Quarry Row Subdivision Project is considered less than significant and no mitigation measures are required.

According to Caltrans, Interstate 80 (I-80) southwest of Rocklin Road has an average daily traffic volume of 115,000 vehicles per day. The distance between the edge of I-80 and the Quarry Row Subdivision is approximately 2,900 feet. Because the project site is more than 1,000 feet from I-80, the TAC emissions impact associated with the Quarry Row Subdivision Project is considered less than significant and no mitigation measures are required.

3.4 DISCUSSION OF ITEM III.e

Typical odor sources include industrial or intensive agricultural uses. Residential land uses as proposed for the Quarry Row Subdivision Project are not typically associated with the creation of objectionable odors during long-term operation. Construction of the project, particularly diesel fumes from construction equipment, could cause objectionable odors. However, construction emissions are minimal and temporary, and would likely only affect a specific receptor for a period of days or perhaps weeks.

Therefore, the proposed project would not create objectionable odors. As a result, this impact is considered less than significant and no mitigation measures are required.

SECTION 4
GREENHOUSE GAS EMISSIONS

The following is the *Greenhouse Gas Emissions* portion of the CEQA *Environmental Checklist Form*. The checklist form is presented as Appendix G of the *State CEQA Guidelines* (Title 14 California Code of Regulations section 15000 et seq.).

VII.	**GREENHOUSE GAS EMISSIONS** Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	X	☐
b.	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	X	☐

As shown above, the *Greenhouse Gas Emissions* portion of the CEQA *Environmental Checklist Form* is presented as items VII.a and VII.b. The assessment of these items is described below.

4.1 DISCUSSION OF ITEMS VII.a AND VII.b

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the California Climate Solutions Act of 2006 (Stats. 2006, ch. 488) (Health & Saf. Code, § 38500 et seq.). AB 32 requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. AB 32 delegated the authority for its implementation to the California Air Resources Board (CARB) and directs CARB to enforce the statewide cap. In accordance with AB 32, CARB prepared the *Climate Change Scoping Plan – a Framework for Change* (California Air Resources Board 2008), which was approved in 2008. The Scoping Plan provides the outline for actions to reduce California's GHG emissions. Based on the reduction goals called for in the Scoping Plan, a 29 percent reduction in GHG levels relative to a "business as usual" (BAU) scenario would be required to meet 1990 levels by 2020. The reduction goals are based on 2005 emissions projections. CARB, per the Scoping Plan, recommends that local governments utilize a 15 percent GHG reduction below "today's" levels by 2020 to ensure that community emissions match the State's reduction target, where today's levels would be considered 2010 levels.

The PCAPCD recommends that the threshold of significance for GHG emissions selected by CEQA lead agencies be related to compliance with AB 32. In accordance with CARB and PCAPCD recommendations, the City of Rocklin, as CEQA lead agency, has chosen to require a quantitative GHG analysis for development projects to demonstrate that a project would promote sustainability and implement operational GHG emission reduction strategies that would reduce the project's GHG emissions from BAU levels by 15 percent, in compliance with AB 32 and the Scoping Plan. Therefore, if the proposed project does not show a 15 percent reduction from projected 2020 BAU levels (i.e., 2010 levels) compared to the project's estimated 2020 levels, the project would be considered to result in a cumulatively considerable contribution to global climate change. GHG emission reduction measures could include, but are not limited to, compliance with local, State, or federal plans or strategies for GHG reductions, on-site and off-site mitigation recommendations from the Office of the Attorney General, and project design features. It should be noted that the proposed project would be required to comply with the minimum mandated measures of California Green Building Standards Code (CalGreen Code), such as a 20 percent mandatory reduction in indoor water use and diversion of 50 percent of construction waste from landfills. A variety of voluntary CalGreen Code measures also exists that would further reduce GHG emissions, but are not mandatory.

GHG emissions contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHG emissions contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

Implementation of the proposed project would contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide (CO_2) and other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O), from mobile sources and utility usage.

The PCAPCD, as part of the Sacramento Regional GHG Thresholds Committee, has recently developed regional GHG emissions thresholds. The thresholds were based on project data provided by the PCAPCD and other regional air districts, including the Sacramento Metropolitan Air Quality Management District (SMAQMD). The SMAQMD recently adopted the thresholds. The PCAPCD recommends using the GHG thresholds currently adopted by the SMAQMD, which is 1,100 metric tons of carbon dioxide equivalent units per year (MTCO2e/yr) for construction and for operation. Projects exceeding the 1,100 MTCO2e/yr GHG threshold of significance would be required to perform a further detailed analysis showing whether the project would comply with AB 32 reduction goals. In accordance with the 2008 Scoping Plan, the City of Rocklin, as lead agency, considers a 15 percent reduction from BAU levels, where BAU levels are based on 2010 levels, compared to a project's estimated 2020 levels to be consistent with AB 32 reduction goals. Therefore, if the proposed project does not show a 15 percent reduction of project-related GHG emissions, measures could include, but are not limited

to, compliance with local, State, or federal plans or strategies for GHG reductions, on-site and off-site mitigation recommendations from the Office of the Attorney General, and project design features. In addition, a variety of voluntary measures are included in the 2013 CalGreen Code that could be applied for the reduction of GHG emissions, but are not mandatory.

The proposed project's short-term construction-related and long-term operational GHG emissions were estimated using the CalEEMod software (South Coast Air Quality Management District 2013). CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Emissions are expressed in annual metric tons of CO_2 equivalent units of measure (i.e., $MTCO_2e$), based on the global warming potential of the individual pollutants. More detailed information on the CalEEMod model is available at the internet website http://caleemod.com/. Output files from the CalEEMod model, as applied to the Quarry Row Subdivision Project, are presented in the *Technical Appendix* of this Greenhouse Gas Study.

The CalEEMod emissions model contains default data characterizing the construction and operation of industrial development projects, such as the Quarry Row Subdivision Project. The CalEEMod default values were used except where:

- project-specific data are available, or
- updated technical data are available.

Project-specific data included the size of the project site, structures, and paved area. Updated technical data included use of vehicle trip generation rates from the Institute of Transportation Engineers document *Trip Generation Manual, 9th Edition* (Institute of Transportation Engineers 2012).

4.1.1 Short-Term GHG Emissions

Project-related GHG emissions are considered a significant impact if the amount of emissions exceeds 1,100 MTCO2e/yr of construction-related GHG emissions. Short-term construction-related emissions of GHG associated with the Quarry Row Subdivision Project are estimated to be 715.61 $MTCO_2e$, with 353.51 MTCO2e in 2017, and 362.10 MTCO2e in 2018 as shown in **Table 6**. Project-related construction emissions of GHG emissions would be less than the 1,100 MTCO2e/yr threshold. Therefore this impact would be less than significant. No mitigation measures are required.

4.1.2 Long-Term GHG Emissions

The long-term operational GHG emissions estimates incorporate potential area source and vehicle emissions, emissions associated with utility and water usage, and the generation of wastewater and solid waste. Project-related GHG emissions are considered a significant impact if the amount of emissions exceeds 1,100 MTCO2e/yr year of operational GHG emissions.

Estimated increases in GHG emissions associated with the proposed project are shown in **Table 5.** As shown in the table, the annual GHG emissions associated with the proposed project would be 953.35 $MTCO_2e/yr$. Because the level of emissions are lower than the 1,100 MTCO2e/yr significance threshold, the impact of the Quarry Row Subdivision Project on GHG emissions and global climate change is considered less than significant and no mitigation measures are required.

Table 5. Operational Greenhouse Gas Emissions

Emissions Category	Carbon Dioxide (CO_2)	Methane (CH_4)	Nitrous Oxide (N_2O)	Carbon Dioxide Equivalent (CO_2e)
Area Source	51.19	0.00	0.00	51.51
Energy (Electricity and Natural Gas)	180.62	0.01	0.00	181.83
Mobile Source	679.64	0.02	0.00	680.12
Solid Waste Generation	13.37	0.79	0.00	29.97
Water Consumption	6.05	0.14	0.00	9.93
Total Operational Emissions	930.87	0.96	0.01	953.35

Source: Emissions values are from the CalEEMod Emissions Model (http:/www/caleemod.com)
Notes: All values are in metric tons per year (MT/yr).
Total may not equal sum of components due to rounding.

Table 6. Carbon Dioxide Equivalent Emissions for Greenhouse Gas Thresholds

Carbon Dioxide Equivalent (CO_2e) Pollutant	Project-Related Emissions	Cumulative Thresholds	Exceeds Cumulative Thresholds?
Construction		1100	No
2017	353.51		
2018	362.10		
Operational		1100	No
	953.35		

Sources: KD Anderson & Associates 2014a, CalEEMod emissions model.
Thresholds from Placer County Air Pollution Control District 2012.

Notes: All values are expressed in metric tons per year.

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TECHNICAL APPENDIX

CalEEMod MODEL OUTPUT FILES