May 2023 | Final Environmental Impact Report
State Clearinghouse No. 2021100098

NEW FONTANA CAMPUS MASTER PLAN

Chaffey Community College District

Prepared for:

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Table of Contents

APPENDICES

Table of Contents

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1. Introduction

1.1 INTRODUCTION

This Final Environmental Impact Report (EIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) as amended (Public Resources Code §§ 21000 et seq.) and CEQA Guidelines (California Code of Regulations §§ 15000 et seq.).

According to the CEQA Guidelines, Section 15132, the Final EIR shall consist of:

(a) The Draft EIR or a revision of the Draft EIR;

(b) Comments and recommendations received on the DEIR either verbatim or in summary;

(c) A list of persons, organizations, and public agencies comments on the Draft EIR;

(d) The responses of the Lead Agency to significant environmental points raised in the review and consultation process; and

(e) Any other information added by the Lead Agency.

This document contains responses to comments received on the Draft EIR for the New Fontana Campus Master Plan (proposed project) during the public review period, which began February 21, 2023, and closed April 6, 2023. This document has been prepared in accordance with CEQA and the CEQA Guidelines and represents the independent judgment of the Lead Agency. This document and the circulated Draft EIR comprise the Final EIR, in accordance with CEQA Guidelines, Section 15132.

1.2 FORMAT OF THE FEIR

This document is organized as follows:

Section 1, Introduction. This section describes CEQA requirements and content of this Final EIR.

Section 2, Response to Comments. This section provides a copy of the comment letter received during the public review period. The comment letter has been reproduced and assigned number L1.

Section 3. Revisions to the Draft EIR. This section contains revisions to the Draft EIR text as a result of the comments received by agencies and interested persons as described in Section 2 subsequent to release of the Draft EIR for public review.

The Chaffey Community College District (District) staff has reviewed this material and determined that none of this material constitutes the type of significant new information that requires recirculation of the Draft EIR

for further public comment under CEQA Guidelines Section 15088.5. None of this new material indicates that the project will result in a significant new environmental impact not previously disclosed in the Draft EIR. Additionally, none of this material indicates that there would be a substantial increase in the severity of a previously identified environmental impact that will not be mitigated, or that there would be any of the other circumstances requiring recirculation described in Section 15088.5.

1.3 CEQA REQUIREMENTS REGARDING COMMENTS AND RESPONSES

CEQA Guidelines Section 15204 (a) outlines parameters for submitting comments, and reminds persons and public agencies that the focus of review and comment of Draft EIRs should be "on the sufficiency of the document in identifying and analyzing possible impacts on the environment and ways in which significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate the significant environmental effects. At the same time, reviewers should be aware that the adequacy of an EIR is determined in terms of what is reasonably feasible. …CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commenters. When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR."

CEQA Guidelines Section 15204 (c) further advises, "Reviewers should explain the basis for their comments, and should submit data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to Section 15064, an effect shall not be considered significant in the absence of substantial evidence." Section 15204 (d) also states, "Each responsible agency and trustee agency shall focus its comments on environmental information germane to that agency's statutory responsibility." Section 15204 (e) states, "This section shall not be used to restrict the ability of reviewers to comment on the general adequacy of a document or of the lead agency to reject comments not focused as recommended by this section."

In accordance with Public Resources Code Section 21092.5, copies of the written responses to public agencies will be forwarded to those agencies at least 10 days prior to certifying the environmental impact report. The responses will be forwarded with copies of this Final EIR, as permitted by CEQA, and will conform to the legal standards established for response to comments on Draft EIRs.

2. Response to Comments

Section 15088 of the CEQA Guidelines requires the Lead Agency (Chaffey Community College District) to evaluate comments on environmental issues received from public agencies and interested parties who reviewed the Draft EIR and prepare written responses.

This section provides all written responses received on the Draft EIR and the Lead Agency's responses to each comment. One comment letter was received during the public review period, and the comment letter was given a letter and number for reference purposes as shown below.

Number Reference	Commenting Person/Agency	Date of Comment	Page No.
L1	Californians Allied for a Responsible Economy (CARE CA)	April 6, 2023	2-3

2. Response to Comments

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LETTER L1 – Adams Broadwell Joseph & Cardozo for Californians Allied for a Responsible Economy (CARE CA) (33 pages) – Resumes excerpted from Exhibits A and B are included as Appendix A to this FEIR because they do not contain any comments pertaining to the DEIR.

L1

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April 6, 2023

VIA OVERNIGHT MAIL
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ATTN: Measure P Bond Team – CEQA Fontana Comments

VIA EMAIL ONLY
Chaffey Community College District
Email: CEQA@chaffey.edu

Samir Shah, Bond Program Manager
Email: samir.shah@chaffey.edu

Re: CEQA NOA Fontana – Comments on the Draft Environmental Impact Report for the New Fontana Campus Master Plan (SCH No. 2021100098)

Dear Mr. Shah:

We are writing on behalf of Californians Allied for a Responsible Economy ("CARE CA") to provide comments on the Draft Environmental Impact Report ("DEIR") (SCH No. 2021100098) prepared by the Chaffey Community College District ("District") for the New Fontana Campus Master Plan ("Project"), proposed by Chaffey College Rancho Cucamonga Campus ("Applicant"). L1-1

The Project is located on an unimproved 14.3-acre lot at 11070 Sierra Avenue at the "T" intersection of Sierra Avenue and Underwood Drive in the City of Fontana, San Bernardino County (Assessor's Parcel Numbers 0255-101-05 through 09).[1] The project site is currently vacant, containing trees, grasses, and other plants.[2] The project site is bordered by Sierra Avenue to the east, vacant lots and residential uses to the west, commercial uses to the north (animal hospital, beauty

[1] DEIR, pg. 4-3.
[2] *Id.*

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2. Response to Comments

salon, The Home Depot, and a restaurant), and a detention basin to the south.[3] Uses east across Sierra Avenue are residential and commercial.

L1-1 Cont'd

The Project proposes to relocate and expand its existing Fontana Campus to the project site.[4] The new campus would be developed in two phases over approximately a 10-year period. The full buildout of the campus would comprise approximately 209,000 Gross Square Feet (GSF). Phase 1 would consist of a 137,000 GSF campus with a welcome center, library, instructional building, automotive technology building, and operations and maintenance building. Phase 2 would include approximately 72,000 GSF of additional campus development and includes a CTE and training building, additional instructional building, and a new student and community center. At buildout, the proposed project would accommodate 4,495 unduplicated students and 192 employees.

We reviewed the DEIR and its technical appendices with the assistance of air quality and health risk expert Dr. James Clark,[5] and noise expert Ani Toncheva.[6] The District must separately respond to these technical comments.

Based upon our review of the DEIR and supporting documentation, we conclude that the DEIR fails to comply with the requirements of CEQA. As explained more fully below, the DEIR fails to accurately analyze, disclose, and mitigate the Project's significant health risk, noise, hazardous materials, and biological resources impacts. As a result of its shortcomings, the DEIR lacks substantial evidence to support its conclusions and fails to properly mitigate the Project's significant environmental impacts. The District cannot approve the Project until the errors and omissions in the DEIR are remedied, and a revised DEIR is recirculated for public review and comment which fully discloses and mitigates the Project's potentially significant environmental impacts.

I. STATEMENT OF INTEREST

CARE CA is an unincorporated association of individuals and labor organizations that may be adversely affected by the potential public and worker health and safety hazards, and the environmental impacts of the Project. The

L1-2

[3] *Id.*
[4] DEIR, pg. 3-2.
[5] Dr. Clark's comments and curricula vitae are attached hereto as **Exhibit A** ("Clark Comments").
[6] Ms. Toncheva's comments and curricula vitae are attached hereto as **Exhibit B** ("Toncheva Comments").

coalition includes the District Council of Ironworkers, Southern California Pipe Trades DC 16, along with their members, their families, and other individuals who live and work in and around the City of Fontana. L1-2 Cont'd

CARE CA advocates for protecting the environment and the health of their communities' workforces. CARE CA seeks to ensure a sustainable construction industry over the long-term by supporting projects that offer genuine economic and employment benefits, and which minimize adverse environmental and other impacts on local communities. CARE CA members live, work, recreate, and raise their families in the City of Fontana and surrounding communities. Accordingly, they would be directly affected by the Project's environmental and health and safety impacts. Individual members may also work on the Project itself. They will be first in line to be exposed to any health and safety hazards that exist onsite.

In addition, CARE CA has an interest in enforcing environmental laws that encourage sustainable development and ensure a safe working environment for its members. Environmentally detrimental projects can jeopardize future jobs by making it more difficult and more expensive for business and industry to expand in the region, and by making the area less desirable for new businesses and new residents. Indeed, continued environmental degradation can, and has, caused construction moratoriums and other restrictions on growth that, in turn, reduce future employment opportunities.

II. LEGAL BACKGROUND

CEQA has two basic purposes, neither of which the DEIR satisfies. First, CEQA is designed to inform decision makers and the public about the potential, significant environmental effects of a project.[7] CEQA requires that an agency analyze potentially significant environmental impacts in an EIR.[8] The EIR should not rely on scientifically outdated information to assess the significance of impacts, and should result from "extensive research and information gathering," including consultation with state and federal agencies, local officials, and the interested public.[9] To be adequate, the EIR should evidence the lead agency's good faith effort L1-3

[7] CEQA Guidelines, § 15002, subd. (a)(1).
[8] *See* Pub. Resources Code, § 21000; CEQA Guidelines, § 15002.
[9] *Berkeley Keep Jets Over the Bay Comm. v. Board of Port Comm.* ("*Berkeley Jets*") (2001) 91 Cal.App.4th 1344, 1367.; *Schaeffer Land Trust v. San Jose City Council* (1989) 215 Cal.App.3d 612, 620.

2. Response to Comments

at full disclosure.[10] The EIR has been described as "an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return."[11] "Thus, the EIR protects not only the environment but also informed self-government."[12]

L1-3 Cont'd

Second, CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures.[13] The EIR serves to provide public agencies and the public in general with information about the effect that a proposed project is likely to have on the environment and to "identify ways that environmental damage can be avoided or significantly reduced."[14] If a project has a significant effect on the environment, the agency may approve the project only upon a finding that it has "eliminated or substantially lessened all significant effects on the environment where feasible," and that any unavoidable significant effects on the environment are "acceptable due to overriding concerns" specified in CEQA section 21081.[15]

As these comments will demonstrate, the DEIR fails to comply with the requirements of CEQA and may not be used as the basis for approving the Project. It fails in significant aspects to perform its function as an informational document that is meant "to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment" and "to list ways in which the significant effects of such a project might be minimized."[16] The DEIR also lacks substantial evidence to support the District's proposed findings that the Project will not result in any significant, unmitigated impacts.

III. THE DEIR FAILS TO ADEQUATELY ANALYZE, QUANTIFY, AND MITIGATE THE PROJECT'S POTENTIALLY SIGNIFICANT IMPACTS

L1-4

An EIR must fully disclose all potentially significant impacts of a project, and implement all feasible mitigation to reduce those impacts to less than significant

[10] CEQA Guidelines, § 15151; *see also Laurel Heights Improvement Assn. v. Regents of University of California ("Laurel Heights I")* (1988) 47 Cal.3d 376, 406.
[11] *County of Inyo v. Yorty* (1973) 32 Cal.App.3d 795, 810.
[12] *Citizens of Goleta Valley v. Bd. of Supervisors* (1990) 52 Cal.3d 553, 564 (citations omitted).
[13] CEQA Guidelines, § 15002, subd. (a)(2)-(3); *Berkeley Keep Jets Over the Bay Com. v. Bd. of Port Comrs.*, 91 Cal.App.4th at 1354.
[14] CEQA Guidelines, § 15002, subd. (a)(2).
[15] *Id.*, subd. (b)(2)(A)-(B).
[16] *Laurel Heights I, supra,* 47 Cal.3d at pg. 391.

levels. The lead agency's significance determination with regard to each impact must be supported by accurate scientific and factual data.[17] An agency cannot conclude that an impact is less than significant unless it produces rigorous analysis and concrete substantial evidence justifying the finding.[18]

L1-4 Cont'd

Moreover, the failure to provide information required by CEQA is a failure to proceed in the manner required by law.[19] Challenges to an agency's failure to proceed in the manner required by CEQA, such as the failure to address a subject required to be covered in an EIR or to disclose information about a project's environmental effects or alternatives, are subject to a less deferential standard than challenges to an agency's factual conclusions.[20] In reviewing challenges to an agency's approval of an EIR based on a lack of substantial evidence, the court will "determine de novo whether the agency has employed the correct procedures, scrupulously enforcing all legislatively mandated CEQA requirements."[21]

Even when the substantial evidence standard is applicable to agency decisions to certify an EIR and approve a project, reviewing courts will not 'uncritically rely on every study or analysis presented by a project proponent in support of its position. A clearly inadequate or unsupported study is entitled to no judicial deference.'"[22]

A. The DEIR Fails to Analyze Cumulative Health Risk Impacts from Construction Emissions of TACs

The District prepared a construction health risk assessment, which concludes that the cancer risk for the maximum exposed off-site resident from construction activities would be 15.8 in a million and would exceed the 10 in a million-significance threshold.[23] The DEIR concludes that the construction health risk is individually and cumulatively significant.[24] The DEIR claims to mitigate this impact to a less-than-significant level by requiring use of Tier 4 Interim equipment (Mitigation Measure AQ-1). But the DEIR's analysis of the cumulative construction

L1-5

[17] 14 CCR § 15064(b).
[18] *Kings Cty. Farm Bur. v. Hanford* (1990) 221 Cal.App.3d 692, 732.
[19] *Sierra Club v. State Bd. Of Forestry* (1994) 7 Cal.4th 1215, 1236.
[20] *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 435.
[21] *Id.*; *Madera Oversight Coal., Inc. v. County of Madera* (2011) 199 Cal. App. 4th 48, 102.
[22] *Berkeley Jets*, 91 Cal.App.4th at 1355.
[23] DEIR, pg. 1.5-34, Table 5.1-16.
[24] DEIR, pg. 5.1-37.

2. Response to Comments

health risk did not include the emissions of cumulative projects. According to the DEIR, other nearby developments will have overlapping construction schedules, include the Courtplace at Fontana Project, an affordable housing project directly south of the project site.[25] This project was identified as a cumulative project in the DEIR's analysis of the Project's cumulative construction *noise* impacts. But neither this project, nor others nearby, were included in the analysis of the Project's cumulative construction health risk.

L1-5 Cont'd

CEQA requires the lead agency to analyze cumulative impacts. Section 15355 of the State CEQA Guidelines defines a cumulative impact as the condition under which "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts... The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects."[26] Here, the Courtplace at Fontana Project must be considered a cumulative project with regard to construction health risk: the construction sites are close in proximity, will have overlapping construction schedules, and will both emit Toxic Air Contaminants ("TACs") including Diesel Particulate Matter ("DPM"). These factors will result in increased health risks during construction.

CEQA requires analysis of human health impacts. CEQA Guidelines Section 15065(a)(4) provides that the District is required to find a project will have a significant impact on the environment and require an EIR if the environmental effects of a project will cause a substantial adverse effect on human beings.[27] The Supreme Court has also explained that CEQA requires the lead agency to disclose the health consequences that result from exposure to a project's air emissions.[28] To meet CEQA's informational standards, the District must disclose and analyze the cumulative projects' construction emissions in the DEIR.

Additionally, the DEIR's conclusion that Mitigation Measure AQ-1 would reduce the significant cumulative construction health risk to a less-than-significant level is not supported by substantial evidence. Without including the emissions of cumulative projects in the model, the District underestimates the cumulative emissions of DPM. The District thus lacks substantial evidence to conclude that the

[25] DEIR, pg. 4-13, 5.6-21.
[26] C.C.R. Section 15355.
[27] 14 CCR § 15065(a)(4); PRC § 21083(b)(3), (d).
[28] *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 516, 523.

cancer risk would be reduced below the 10 in a million-significance threshold. The Project's cumulative construction health risk thus remains potentially significant.

B. The DEIR Fails to Disclose Significant Construction Noise and Vibration Impacts

i. The DEIR Fails to Disclose Significant Construction Noise Impacts on Residential Receptors

The DEIR states: "[a] significant impact would occur if construction noise would exceed 80 dBA Leq at residential receptors."[29] The DEIR's construction noise threshold is not supported by substantial evidence because it fails to reflect significant noise increases over existing levels. The CEQA Guidelines state that a project would normally have a significant effect on the environment if the project would result in "generation of a substantial temporary or permanent increase in ambient noise levels."[30] L1-6

In *King and Gardiner Farms, LLC v. County of Kern et al.*,[31] the Fifth District Court of Appeal held that the County inappropriately applied a single threshold for determining the significance of the project's noise impacts. To determine whether implementation of an ordinance would cause significant noise impacts, the County used a quantitative threshold of 65 dBA DNL, meaning that the ordinance would not cause a significant noise impact if noise levels stayed below that threshold. The court held that the County's use of a single threshold violated CEQA because the threshold did not measure the increase in noise levels over ambient levels. Comments on the EIR, as well as the County's own noise report that was appended to the Draft EIR, suggested using an increase of 5 dBA to determine whether the increase in noise above ambient levels constituted a significant impact. But the County did not do so. Instead, the County argued that it was entitled to substantial deference in selecting the significance thresholds. Although the court agreed that the County is entitled to deference in its choice of significance thresholds, the court held that the County's use of an absolute noise threshold for evaluating all ambient noise impacts violated CEQA because it did not provide a "complete picture" of the noise impacts that may result from implementation of the ordinance.

[29] DEIR, pg. 5.6-13.
[30] DEIR, pg. 5.6-12.
[31] (2020) 45 Cal.App.5th 814.

2. Response to Comments

Here, the DEIR similarly relies on a single quantitative threshold to determine the significance of construction noise. As in *King and Gardiner Farms*, this approach is inadequate. Therefore, in order to evaluate construction noise impacts, a revised EIR should be prepared to consider an ambient-based threshold in addition to the 80 dBA criteria.

L1-6 Cont'd

Substantial evidence shows that construction noise impacts are significant when an adequate threshold is applied that considers increase over ambient noise levels. As stated in the DEIR, a change in 5 dB over ambient is readily discernible to most people in an exterior environment.[32] Ms. Toncheva presents evidence showing that construction noise could exceed 5 dB above the 58 dBA ambient, resulting in a substantial increase in the ambient noise environment.[33] This impact could last over months, and could be louder if additional equipment is used.[34] Thus, substantial evidence shows that the project would result in "generation of a substantial temporary or permanent increase in ambient noise levels."[35]

This significant impact must be mitigated in a revised EIR. Ms. Toncheva explains that constructing a temporary 10-foot high noise barrier around the perimeter of the construction site would reduce construction noise levels at these homes by 10 dB.[36]

ii. The DEIR Fails to Disclose Significant Construction Noise Impacts on an Animal Hospital

The DEIR fails to analyze construction noise impacts on the Prestige Animal Hospital, located 50 feet to the north of the project site boundary. The DEIR only measures construction noise impacts on residences to the East (447 ft away), and residences to South (525 ft away).[37]. These residential receptors are located further away from the Project's construction activities than the hospital, so the DEIR's analysis does not capture the extent of the impacts on the hospital.

L1-7

The animal hospital is a sensitive receptor. The DEIR acknowledges that "[n]oise- and vibration-sensitive receptors include land uses where quiet

[32] DEIR page 5.6-16; Toncheva Comments, pg. 1.
[33] Toncheva Comments, pg. 2.
[34] *Id.*
[35] DEIR, pg. 5.6-12.
[36] Toncheva Comments, pg. 2.
[37] DEIR, pg. 5.6-16.

environments are necessary for enjoyment and public health and safety... Residences, schools, motels and hotels, libraries, religious institutions, **hospitals**, and nursing homes are examples" [emphasis added].[38] Since the DEIR fails to quantify construction noise impacts on this sensitive receptor, the DEIR fails to meet the informational and analytical standards of CEQA. A revised EIR must be prepared to analyze this impact.

L1-7 Cont'd

Substantial evidence demonstrates that construction impacts on the hospital would be significant. Calculations in Ms. Toncheva's comments show that construction impacts on this sensitive receptor would be significant. The DEIR adopts a significance threshold for construction noise of 80 dBA Leq.[39] Ms. Toncheva explains that the estimated construction noise levels for the three noisiest pieces of equipment are as high as 85 dBA for grading and paving work – more than 10 dB over existing ambient noise levels at the animal hospital .[40] Ms. Toncheva explains that this noise increase would be perceived as twice as loud as existing levels. Since construction noise would exceed the DEIR's chosen thresholds and would increase noise levels more than 10 dB over ambient levels, there is substantial evidence that the Project's construction noise generates a significant impact requiring mitigation.

The DEIR must be revised to include adequate mitigation. Ms. Toncheva explains that a noise barrier would be an efficient noise mitigation measure here due to the proximity of the hospital: constructing a 10-foot noise barrier around the perimeter of the construction site would reduce levels by 15 dB, below ambient-based threshold of significance.[41]

iii. The DEIR Fails to Disclose Significant Vibration Impacts

L1-8

The DEIR concludes that vibration annoyance impacts from Project construction would be less than significant.[42] This conclusion is not supported by substantial evidence because the DEIR fails to analyze the impact of vibration from construction activities on the neighboring animal hospital.[43] As detailed in Ms. Toncheva's comments, this impact is potentially significant.

[38] DEIR, pg. 5.6-2.
[39] DEIR, pg. 5.6-13.
[40] Tocheva Comments, pg. 3.
[41] *Id.*
[42] DEIR, pg. 5.6-20.
[43] DEIR page 5.6-2.

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2. Response to Comments

The DEIR states that "[n]oise- and **vibration-sensitive** receptors include land uses where quiet environments are necessary for enjoyment and public health and safety... Residences, schools, motels and hotels, libraries, religious institutions, **hospitals**, and nursing homes are examples" [emphasis added].[44] The animal hospital is a vibration-sensitive receptor. Ms. Toncheva explains that Prestige Animal Hospital services include surgery procedures, which makes it vibration sensitive.[45]

L1-8 Cont'd

Substantial evidence shows that vibration impacts on the hospital are significant. Ms. Toncheva explains that the Federal Transit Administration ("FTA") Manual provides criteria for buildings where vibration would interfere with interior operations of 65 VdB and criteria for institutional daytime uses of 75 VdB.[46] Ms. Toncheva reasons that the 65 VdB criteria would apply to sensitive surgical procedures or use of lab equipment. Ms. Toncheva's comments show that grading and building construction work within 131 feet of the receptor would generate vibration above 65 VdB, and paving work within 281 feet would exceed 65 VdB.[47] This significant vibration impact must be analyzed and mitigated in revised EIR.

C. The DEIR Fails to Adequately Analyze and Mitigate Health Risks from Disturbance of Contaminated Soils

L1-9

The DEIR's pesticide report states that arsenic levels in the Project's surface soil was detected at concentrations ranging from 4.4 to 8.1 milligrams per kilogram (mg/kg).[48] The report shows that these concentrations exceed the risk-based screening levels from DTSC's Screening Level for residential land use of 0.11 mg/kg and commercial/industrial land use of 0.36 mg/kg.[49] But the DEIR concludes that because arsenic concentrations are below the upper bound of background arsenic levels, the health risk impact to workers and future occupants of the Project site is less than significant.[50] This claim is not supported by substantial evidence, as background and ambient arsenic levels are known to often exceed the risk-based screening levels.[51] The DEIR's approach thus fails to satisfy CEQA's requirements

[44] DEIR, pg. 5.6-2.
[45] Toncheva Comments, pg. 4.
[46] *Id.*
[47] *Id.*, pgs. 3-4.
[48] DEIR, Appendix O, pg. O-8.
[49] *Id.*
[50] DEIR, Appendix O, pg. O-3, 4.
[51] California Department of Toxic Substances Control, Determination of a Southern California Regional Background Arsenic Concentration in Soil,

to analyze and mitigate health impacts from human exposure to toxic substances, which apply regardless of the origin of the substances.

L1-9 Cont'd

In *Cal. Building Industry Ass'n v. Bay Area Air Quality Mgmt. Dist.*,[52] the California Supreme Court held that the disturbance of contaminated soil is a potentially significant impact which requires disclosure and analysis of health and safety impacts in an EIR.[53] The Court explained that "when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users."[54]

And in *Berkeley Keep Jets Over the Bay Com. v. Bd. of Port Comrs.* ("*Berkeley Jets*"), the Court of Appeal held that a CEQA document must analyze the impacts from human exposure to toxic substances.[55] In that case, the Port of Oakland approved a development plan for the Oakland International Airport.[56] The EIR admitted that the Project would result in an increase in the release of TACs and adopted mitigation measures to reduce TAC emissions, but failed to quantify the severity of the Project's impacts on human health.[57] The Court held that mitigation alone was insufficient, and that the Port had a duty to analyze the health risks associated with exposure to TACs.[58] As the CEQA Guidelines explain, "[t]he EIR serves not only to protect the environment but also to demonstrate to the public that it is being protected."[59]

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https://www.sandiegocounty.gov/content/dam/sdc/pds/ceqa/Bagley-Major-Grading-Plan-Change/Determination-of-Background-Arsenic.pdf ("Arsenic is especially problematic since the risk-based soil concentration is 1 00-times **[check this number]**below typical ambient concentrations."); DTSC (December 28, 2020), Human Health Risk Assessment (HHRA) Note Number 11 – Southern California Ambient Arsenic Screening Level, available at https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/01/Background-Arsenic.pdf ("Background and ambient concentrations of some inorganic elements can exceed risk-based concentrations. This includes arsenic, where background as well as ambient concentrations exceed the risk-based soil concentration of 0.11 mg/kg").

[52] (2015) 62 Cal.4th 369.
[53] 62 Cal.4th at 388-90; 14 CCR § 15126.2(a).
[54] 62 Cal.4th at 377.
[55] 91 Cal.App.4th at 1369–1371.
[56] *Id.* at 1349–1350.
[57] *Id.* at 1364–1371.
[58] *Id.*
[59] 14 C.C.R. § 15003(b).

2. Response to Comments

Here, the DEIR acknowledges that the arsenic concentrations exceed the risk-based screening levels of 0.11 mg/kg and 0.36 mg/kg, but claim health risk impacts would be less-than-significant because arsenic concentrations are less than the upper bound of background concentrations. This approach fails to disclose the health impacts on workers and future occupants of the Project site by exposure to the elevated arsenic levels present at the site. The proposed construction activities may disturb and expose contaminated soil, increasing the likelihood that workers or neighbors will breathe in contaminated dust or otherwise be exposed to contaminated soil that would previously have been encased underground. In addition, the Project may increase the health risks posed by this contaminated soil by inviting students and other members of the public to occupy open space proposed in the Project's Open Space Plan.[60]

L1-9 Cont'd

CEQA directs public agencies to avoid or reduce environmental damage when possible by requiring alternatives or mitigation measures.[61] Here, despite arsenic levels exceeding residential and commercial health risk thresholds, no mitigation for workers or future occupants is provided. A revised EIR must be prepared that discloses, analyzes and mitigates health impacts from human exposure to arsenic on the Project site.

i. Substantial Evidence Shows that Arsenic Concentrations on the Project Site Exceed Background Concentrations

The DEIR claims that arsenic concentrations on the Project site are below background concentrations because arsenic detected in the seven composite soil samples was below the upper bound background concentration for Southern California, and San Bernardino County.[62] Dr. Clark's comments discuss authority showing that rather than comparing the Project site's arsenic concentrations to "upper bound" background concentrations, the Project site's arsenic concentrations should be compared to the 95 percent upper confidence limit (UCL) of the arithmetic mean.[63] DTSC guidance on the estimated risk associated with the upper-bound arsenic screening level states:

L1-10

[60] DEIR, pg. 3-25, Figure 3-10.
[61] CEQA Guidelines, § 15002, subd. (a)(2)-(3); *Berkeley Keep Jets Over the Bay Com. v. Bd. of Port Comrs.*, 91 Cal.App.4th at 1354.
[62] DEIR, Appendix O, Pg O-3
[63] Clark Comments, pg. 7-9.

> Southern California site-specific soil concentrations which exceed 12 mg/kg may be indicative of releases of arsenic. Comparison of a site-specific 95% UCL of the mean to the 12 mg/kg upper bound concentration are statistically incorrect. The comparison, or statistical test, of site-specific 95% UCL of the mean should be to the southern California 95%UCL of the mean arsenic soil concentration of 3.1 mg/kg.[64]

L1-10 Cont'd

This guidance suggests that although exceedance of the upper bound concentration may be indicative of releases of arsenic, the site-specific 95% UCL of the mean should be compared to the southern California 95% UCL of the mean arsenic soil concentration of 3.1 mg/kg. Dr. Clark's analysis of the data, using ProUCL 5.2 software, shows that the 95% UCL for arsenic across the site is 6.925 mg/kg.[65] This level of arsenic exceeds the background concentration level of 3.1 mg/kg for arsenic. Thus, the Project's construction phase, which will disturb soils and may release residual contamination present at the Project site, is a significant impact. The DEIR must analyze and mitigate this impact in a revised EIR.

D. The DEIR Fails to Adequately Analyze and Mitigate Significant Impacts to Biological Resources

i. The DEIR Fails to Adequately Mitigate the Significant Impact on DSF Habitat

L1-11

The proposed project would disturb onsite unconsolidated Delhi sands that provide "moderate quality" Delhi Sands Flower-Loving Fly ("DSF") habitat."[66] The DSF is a federally endangered species.[67] The Project site is in the general overlay of the Jurupa Recovery Unit for the DSF, as identified by the USFWS Recovery Plan for the Delhi Sands Flower-Loving Fly.[68] The DEIR's habitat report acknowledges that DSF habitat is rapidly diminishing:

> More than 95% of known DSF habitat was considered eliminated by development, agriculture, and other land management practices by 1993

[64] California Department Of Toxic Substances Control Human And Ecological Risk Office (HERO), Human Health Risk Assessment (HHRA) Note Number 11: Southern California Ambient Arsenic Screening Level (December 28, 2020), pg. 7, available at https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/01/Background-Arsenic.pdf.
[65] Clark Comments, pg. 9.
[66] DEIR, pg. 5.2-16.
[67] *Id.*
[68] DEIR, pg. 5.2-21.

2. Response to Comments

(USFWS 1993; USFWS 1996 in Kingsley 1996); however, this proportion is now nearer 98 to 99% due to these ongoing processes. Many of the last remaining fragments of DSF habitat are currently under pressure by land management efforts such as heavy disking, irrigation, manure dumping, and gravel dumping. There is currently an estimated 1,200 acres of habitat that can support this species (USFWS 1997), but this estimate likely includes lands needing extensive habitat restoration.[69]

L1-11 Cont'd

The Project proposes to develop a 14.3 acre site. When compared to the estimated remaining DSF habitat above, this Project could remove over 1% of the remaining DSF habitat. The actual impact on DSF habitat would be greater than 1%, as the Final Recovery Plan For The Delhi Sands Flower-Loving Fly states, "[a]lthough several hundred potentially restorable acres exist, restoration is expensive and not without unresolved problems."[70] Accordingly, the DEIR recognizes that disturbance of the onsite Delhi sands would cause potentially significant impacts.[71]

L1-12

MM Bio-2 purports to mitigate these impacts by providing two options. In the first option, the District would conduct a second protocol survey to confirm whether the DSF is present onsite, and if so, prepare a Habitat Conservation Plan. In the second option, the District would, without conducting a protocol survey, calculate fees to purchase mitigation bank credits from an existing DSF conservation bank (Vulcan Materials Company or other approved mitigation sites).

This mitigation is inadequate. Option 1 fails to adequately address habitat loss because it does not require habitat compensation if no DSF is detected. This is contrary to the Jurupa Recovery Unit's purpose: "[t]he intent of Recovery Units (RUs) is to identify and protect areas without which, the target species could not be recovered."[72] The Final Recovery Plan For The Delhi Sands Flower-Loving Fly

[69] DEIR, Appendix E, pg. E-2.
[70] Final Recovery Plan For The Delhi Sands Flower-Loving Fly (1997), pg. 9, https://ecos.fws.gov/docs/recovery_plan/970914.pdf.
[71] DEIR, pg. 5.2-16.
[72] Draft Amendment 1 to the Final Recovery Plan For The Delhi Sands Flower-Loving Fly (December 2008), https://www.endangeredspecieslawandpolicy.com/assets/htmldocuments/blog/4/2019/06/Revised-Recovery-Plan-for-Delhi-Sands-Flower-Loving-Fly.pdf; see Final Recovery Plan For The Delhi Sands Flower-Loving Fly (1997), https://ecos.fws.gov/docs/recovery_plan/970914.pdf.

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(1997) includes conservation and restoration of unoccupied DSF habitat as Task number 1.6.2.[73] The Plan explains: L1-12 Cont'd

> The survival and recovery of the Delhi Sands flower-loving fly is dependent on protection of occupied and restorable habitat. Occupied habitat contains individuals of the species and associated habitat used for breeding, feeding, shelter, and/or as a dispersal corridor. Restorable habitat consists of areas that contain Delhi series soil and are not currently occupied by the animal, but could be managed for the species.[74]

Therefore, even if no DSF are detected currently, the habitat must be protected for the species to recover. Because Option 1 does not protect the DSF habitat if no DSF is detected, it is not effective mitigation.

Option 2 is flawed because the mitigation measure is of unclear efficacy. L1-13 CEQA requires evidence in the record that mitigation measures will be effective in remedying the identified environmental impact where the efficacy of the mitigation is not apparent.[75] The Vulcan Materials Company mitigation bank is apparently located in a different recovery unit (Colton, as opposed to Jurupa). The Final Recovery Plan For The Delhi Sands Flower-Loving Fly states that the three Recovery Units (RUs) are based on geographic proximity, similarity of habitat, and potential genetic exchange – they must each be conserved: "[t]he three Recovery Units (RUs) must be conserved to maintain the species' distribution and its genetic diversity throughout its present range."[76] "At least eight populations across the three RUs are needed to reduce the risk of extinction from random events that may affect any one local area."[77] By failing to require compensatory habitat to be provided in the same RU, the Project's significant impact on the Jurupa RU remains unmitigated. Thus, the mitigation measure must be revised to ensure that compensatory mitigation is provided in the same recovery unit.

[73] Final Recovery Plan For The Delhi Sands Flower-Loving Fly (1997), pp. 21, 23, 36.
[74] *Id.* at 13.
[75] *League to Save Lake Tahoe Mtn. Area Preservation Foundation v. County of Placer* (2022) 75 Cal.App. 5th 63,121; *see also, Sierra Club v. County of San Diego* (2014) 231 Cal.App.4th 1152, 1168 (no evidence that greenhouse gas emission reduction measures would function as enforceable or effective mitigation measures).
[76] *Id.* at 15.
[77] *Id.* at 15.

2. Response to Comments

ii. The DEIR Fails to Adequately Analyze and Mitigate Cumulative Impacts on DSF Habitat

The DEIR's environmental setting section shows that the surrounding area is planned to be developed.[78] These developments may have the same adverse impacts on DSF habitat as the Project by eliminating DSF habitat. These developments, and others in the region, must be considered cumulative projects. L1-14

The DEIR concludes that cumulative impacts will be less than significant because "as with the proposed project, other development projects in the District are also required to provide appropriate mitigation if it is determined that development sites provide suitable DSF habitat." This reasoning would lead to the erasure of the Jurupa Recovery Unit, as the mitigation proposed by the DEIR is ineffective at mitigating the Project's habitat impacts. Specifically, if each cumulative project were to adopt similar mitigation measures to MM BIO-2, they could develop suitable DSF habitat so long as no DSF were detected (Option 1). And under Option 2, other projects could purchase mitigation bank credits in other regions. Since the DSF is extant through much of the Jurupa RU, much of the Jurupa Recovery Unit would be lost. This outcome would be contrary to the purpose of the RU to protect habitat through the DSF's present range.

iii. The DEIR Fails to Mitigate Loss of Foraging Habitat

The DEIR fails to provide compensatory habitat mitigation for burrowing owl. MM BIO-4 – Burrowing Owl Preconstruction Surveys – requires preconstruction surveys, but fails to require habitat compensation in the event burrowing owl is detected. Leading authority on burrowing owl mitigation states that compensatory habitat (with an equivalent or greater habitat area) is needed to mitigate for permanent habitat loss.[79] The DEIR conflicts with this guidance by failing to require compensatory habitat in the event burrowing owls are detected during the preconstruction survey. Consequently, MM BIO-4 does not ensure Project impacts on the burrowing owl would be mitigated to less-than-significant levels. The DEIR must be revised and recirculated to address these deficiencies. L1-15

Regarding other sensitive avian species, the DEIR acknowledges that the Project site contains foraging habitat for sensitive avian species: "[t]he Suitable

[78] DEIR, pg. 4-11; 4-3, fn 1-4.
[79] California Department of Fish and Game. 2012. Staff Report on Burrowing Owl Mitigation, pg. 8. *See also* DEIR, Appendix A, CDFW NOP comments.

nesting habitat for the Cooper's hawk (Accipiter cooperii), a state species of special concern (SSC) is in the mature ornamental trees. Suitable foraging habitat for the California horned lark (Eremophila alpestris actia), an SSC; white-tailed kite (Elanus leucurus), a state fully protected (SFP); and loggerhead shrike (Lanius ludovicianus), an SSC, is in the disturbed/nonnative grasslands." But the DEIR's nesting bird mitigation (MM BIO-3), fails to include any habitat mitigation, merely calling for preconstruction surveys to avoid an incidental taking.[80] The DEIR's assumption that migratory birds would occupy the nearby Jurupa Hills habitat following the Project's direct impacts to 13.52 acres of foraging habitat is unsupported by any evidence. The failure to analyze or mitigate the loss of foraging habitat must be remedied in a revised DEIR.

L1-15 Cont'd

IV. CONCLUSION

The DEIR is inadequate and must be withdrawn. We urge the District to prepare and circulate a revised EIR which discloses all of the Project's potentially significant impacts and requires all feasible mitigation measures to reduce the Project's significant environmental and public health impacts. We thank you for the opportunity to provide these comments on the DEIR.

L1-16

Sincerely,

Aidan P. Marshall

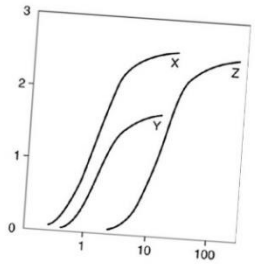
Attachments
APM:acp

[80] DEIR, pg. 1-15.

6568-004acp

2. Response to Comments

EXHIBIT A



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April 6, 2023

Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080

Attn: Mr. Aidan Marshall

Subject: Comments On Draft Environmental Impact Report for New Fontana Campus Master Plan Project For Chaffey Community College District. State Clearinghouse No. 2021100098

L1-17

At the request of Adams Broadwell Joseph & Cardozo (ABJC), Clark and Associates (Clark) has reviewed materials related to the February 2023 Chaffey Community College District DEIR of the above referenced project.

Clark's review of the materials in no way constitutes a validation of the conclusions or materials contained within the plan. If we do not comment on a specific item this does not constitute acceptance of the item.

Project Description:

The Chaffey Community College District (District) is proposing to relocate and expand the existing Fontana Campus at 11070 Sierra Avenue in the City of Fontana, San Bernardino County, California (proposed project or project). The approximately 14.3-acre project site is bounded by a shopping plaza to the north, Sierra Avenue to the east, vacant lots and residential uses to the west, and an existing stormwater detention basin and single-family residences to the south. The project is a community college relocation and expansion project that would result in construction of new school buildings on the project site. The proposed project would involve site preparation, grading, trenching, building construction, architectural coating, and paving.

2. Response to Comments

According to the DEIR, under the Vision 2025 Facilities Master Plan addendum approved by the Governing Board, the District proposes to relocate and expand its existing Fontana Campus to the project site. The new campus would be developed in two phases over approximately a 10-year period. The full buildout of the campus would comprise approximately 209,000 Gross Square Feet (GSF). Phase 1 would consist of a 137,000 GSF campus with a welcome center, library, instructional building, automotive technology building, and operations and maintenance building. Phase 2 would include approximately 72,000 GSF of additional campus development and includes a CTE and training building, additional instructional building, and a new student and community center. L1-18

Figure 3-4 - Proposed Master Plan
3. Project Description

2 | P a g e

The Project construction is anticipated to take place in two phases, with Phase 1 from September 2024 through September 2026 and Phase 2 starting in June 2027 with completion by June 2030 (approximately 1,197 total workdays over the 6-year span). L1-18 Cont'd

Specific Comments

1. The College District's Air Quality Analysis Fails To Include A Quantitative Health Risk Analysis Of All Of The Toxic Air Contaminants From The Construction Phase And The Operational Phase Of The Project For The Nearest Sensitive Receptor(s)

While the District did prepare an HRA of the emissions of DPM from the construction phase of the Project, they did not prepare a cumulative analysis of all the emissions from the construction phase and failed to prepare an HRA of the operational phase of the Project. Diesel exhaust, in particular DPM, is classified by the State of California as a TAC. TACs, including DPM[1], contribute to a host of respiratory impacts and may lead to the development of various cancers. Failing to quantify those impacts places the community at risk for unwanted adverse health impacts. *Even brief exposures to the TACs could lead to the development of adverse health impacts over the life of an individual.* L1-19

Diesel exhaust contains nearly 40 toxic substances, including TACs, and may pose a serious public health risk for residents in the vicinity of the facility. TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. The current California list of TACs includes approximately 200 compounds, including particulate emissions from diesel-fueled engines.

[1] Because DPM is a TAC, it is a different air pollutant than criteria particulate matter (PM) emissions such as PM10, PM2.5, and fugitive dust. DPM exposure causes acute health effects that are different from the effects of exposure to PM alone.

2. Response to Comments

L1-19 Cont'd

Diesel exhaust has been linked to a range of serious health problems including an increase in respiratory disease, lung damage, cancer, and premature death.[2,3,4] Fine DPM is deposited deep in the lungs in the smallest airways and can result in increased respiratory symptoms and disease; decreased lung function, particularly in children and individuals with asthma; alterations in lung tissue and respiratory tract defense mechanisms; and premature death.[5] Exposure to DPM increases the risk of lung cancer. It also causes non-cancer effects including chronic bronchitis, inflammation of lung tissue, thickening of the alveolar walls, immunological allergic reactions, and airway constriction.[6] DPM is a TAC that is recognized by state and federal agencies as causing severe health risk because it contains toxic materials, unlike $PM_{2.5}$ and PM_{10}.[7]

The inherent toxicity of TACs requires the District to first quantify the concentration released into the environment at each of the sensitive receptor locations through air dispersion modeling, calculate the dose of each TAC at that location, and quantify the cancer risk and hazard index for each of the chemicals of concern. Following that analysis, then the District can make a determination of the relative significance of the emissions.

These receptors would be exposed to TACs released during Project construction and operation, including DPM and other TACs released from the Project site. No effort is made in the DEIR to quantify the potential health impacts from emissions generated by the Project during the operational activities from the Project on these sensitive receptors. The District therefore lacks supporting evidence for its conclusion that the Project would not result in significant health effects. The District's

[2] California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Staff Report, June 1998; see also California Air Resources Board, Overview: Diesel Exhaust & Health, https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health#:~:text=Diesel%20Particulate%20Matter%20and%20Health&text=In%201998%2C%20CARB%20identified%20DPM,and%20other%20adverse%20health%20effects.

[3] U.S. EPA, Health Assessment Document for Diesel Engine Exhaust, Report EPA/600/8-90/057F, May 2002.

[4] Environmental Defense Fund, Cleaner Diesel Handbook, Bring Cleaner Fuel and Diesel Retrofits into Your Neighborhood, April 2005; http://www.edf.org/documents/4941_cleanerdieselhandbook.pdf, accessed July 5, 2020.

[5] California Air Resources Board, Initial Statement of Reasons for Rulemaking, Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Staff Report, June 1998.

[6] Findings of the Scientific Review Panel on The Report on Diesel Exhaust as adopted at the Panel's April 22, 1998 Meeting.

[7] Health & Safety Code § 39655(a) (defining "toxic air contaminant" as air pollutants "which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health. A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the federal act (42 U.S.C. Sec. 7412 (b)) is a toxic air contaminant.")

4 | Page

failure to perform such an analysis is clearly a major flaw in the DEIR and may be placing the residents of the adjacent structures at risk from the construction phase of the Project.

L1-19 Cont'd

The District must assess the air quality impacts for all TACs that will be released during the construction and operational phases of the project. CARB[8] defines diesel exhaust as a complex mixture of inorganic and organic compounds that exists in gaseous, liquid, and solid phases. CARB and U.S. EPA identify 40 components of the exhaust as suspected human carcinogens, including formaldehyde, 1,3-butadiene, and benzo[a]pyrene. The inhalation unit risk factor identified by OEHHA for use in risk assessments is for the particulate matter (DPM) fraction of diesel exhaust and not the vapor phase components identified by CARB and U.S. EPA.

There is notable precedent requiring a quantitative analysis of TACs from diesel exhaust in CEQA documents. Moreover, the absence of this analysis renders the DEIR's Air Quality Analysis incomplete. In a 2017 Notice of Preparation of a CEQA Document For the Los Robles Apartments Project, SCAQMD[9] noted that:

"In the event that the proposed project generates or attracts vehicular trips, especially heavy-duty diesel-fueled vehicles, it is recommended that the lead agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis") can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysishandbook/mobile-source-toxics-analysis. An analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants should also be included." This is a common and feasible analysis that is routinely performed for development projects like the Found Residence Project.

Here, the District's analysis ignores the presence of other TACs being emitted with diesel exhaust during the construction and operational phases of the project without making any attempt to quantify all of the impacts. This omission is a continuing flaw that must be addressed by the District. The results should then be presented in a revised DEIR prior to approving any agreements with the

[8] CARB. 1998. Report to the Air Resources Board on the Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, Part A, Public Exposure To, Sources and Emissions of Diesel Exhaust In California. April 22, 1998. Pg A-1.

[9] SCAQMD. 2017. Comment Letter To David Sanchez, Senior Planner City of Pasadena from Jillian Wong, Planning and Rules Manager, SCAQMD.

2. Response to Comments

Proponent or issuing any permits for the Project.

2. The Project Air Quality Analysis Fails To Consider The Health Risk From Existing Sources Within The Area Of The Project Site

In the DEIR's description of existing air quality, the background health risk for SCAB is listed at 450 in 1,000,000. According to the results of the SCAQMD's MATES V study, the health risk in zipcode 92337 (area of Project site) is slightly greater than that for the rest of the SCAB (472 in 1,000,000). In the figure below it is clear that the largest contributor to cancer risk is from diesel particulate matter (DPM), approximately 69.9% or 330 in 1,000,000. The remaining 30.1% of the health risk (142 in 1,000,000) comes from benzene, formaldehyde, arsenic and other chemicals. SCAQMD notes in its Cancer Risk website that: L1-20

- Benzene and 1,3-Butadiene - Benzene and 1,3-butadiene are emitted predominantly from gasoline-powered mobile sources.
- Arsenic - Sources of arsenic include paved road dust, construction dust, mineral processes, metal processes, refineries and fuel combustion.
- Formaldehyde - Formaldehyde is emitted from mobile sources and is also formed as a secondary pollutant through chemical reactions of VOCs in the atmosphere.
- Acrolein - Acrolein is formed from combustion processes and reaction of other VOCs in the atmosphere.

L1-20 Cont'd

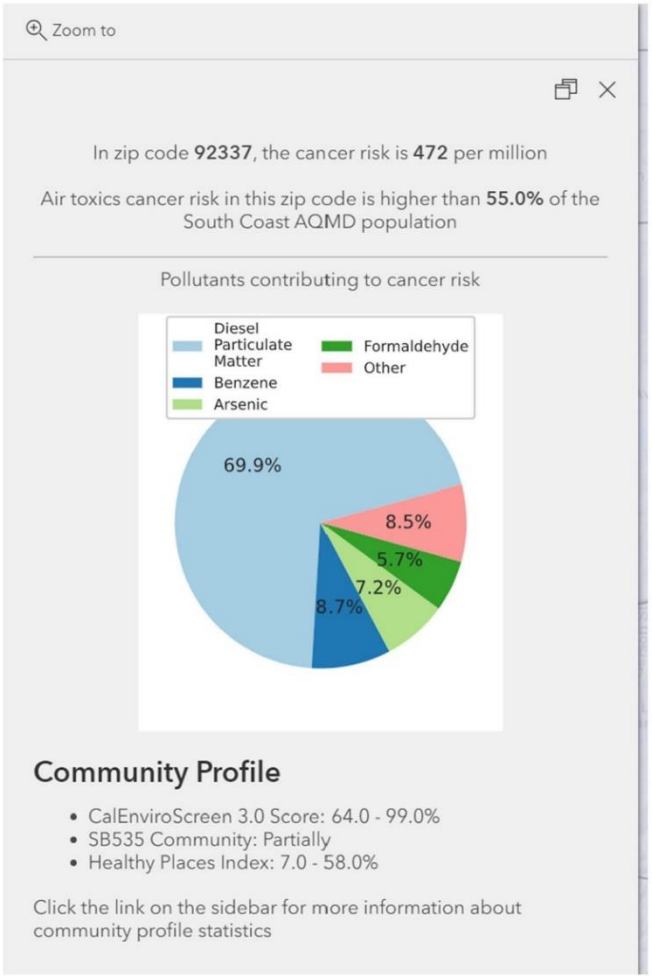

Figure 1: Cancer Risk Breakdown From SCAQMD's MATES V Study of Project Site

The District must correct this mistake in an environmental impact report detailing the additional burden that the Project will have on an already impacted area.

3. The Phase II Investigation Of The Site Failed To Correctly Analyze The Arsenic Results Collected In The Surface Soils By Comparing The Results To The Most Recent DTSC

L1-21

2. Response to Comments

Analysis Of Background Concentrations Of Arsenic In Southern California.

According to the DEIR,[10] the soil sampling from the 2020 Limited PAR found that arsenic concentrations at the project site are consistent with background concentrations found in San Bernardino County. The assumption in the DEIR is that the background concentration of arsenic in Southern California can be represented by the 95% upper confidence limit (UCL) of the 99th percentile value of all samples in the Department of Toxic Substances' (DTSC's) arsenic database of samples collected from school sites in Southern California. The assumption about the arsenic concentrations measured in soil samples in Appendix O of the DEIR is that although arsenic was detected in seven of the seven composite soil samples analyzed at concentrations ranging from **4.4 to 8.1** mg/kg, greater than the health based screening levels from DTSC's Screening Level (DTSC SL) for residential land use of 0.11 mg/kg and commercial/industrial land use of 0.36 mg/kg, that the arsenic measured was below the upper bound background concentration for Southern California, and specifically for San Bernardino County.[11]

L1-21 Cont'd

In DTSC's 2020 re-evaluation of the background levels of arsenic in Southern California (HERO Note 11), DTSC noted that the 95% upper confidence limit of the mean (95% UCL) arsenic soil concentration was 3.1 mg/kg, for the combined Southern California data set. The upper-bound arsenic concentrations were similar to LA County samples for each of the other southern California counties (Orange, Riverside, San Bernardino and San Diego counties).

Confidence intervals or limits are designed to estimate statistical characteristics of some parameter of a sampled population. Given a statistical parameter of interest such as the population mean (μ), the lower and upper limits of a confidence interval define the most probable concentration range in which the true parameter ought to lie.

Guidance previously issued by EPA in the 1992, Supplemental Guidance to RAGS: Calculating the Concentration Term,[12] states that, "because of the uncertainty associated with estimating the true average concentration at a site, the 95 percent upper confidence limit (UCL) of the

[10] DEIR. 2023. Pg 8-16

[11] DEIR Appendix O. 2023. Pg o-3

[12] EPA (1992). A Supplemental Guidance to RAGS: Calculating the Concentration Term. http://www.deq.state.ms.us/newweb/opchome.nsf/pages/HWDivisionFiles/$file/uclmean.pdf. Publication 9285.7-081. Office of Solid Waste and Emergency Response, U.S. Environmental Protection Agency, Washington, D.C.

arithmetic mean should be used for this variable."

I have re-analyzed the data collected during the Phase II sampling event to derive a site wide 95% UCL for arsenic in surficial soils. The 95% UCL was calculated using EPA's ProUCL 5.2 software. ProUCL is software package for commonly used environmental statistics. Methods incorporated in the ProUCL software cover many common environmental situations and allow environmental practitioners with limited knowledge of statistics to perform calculations to estimate DQO based sample size, establish background levels, compare background and site sample data sets for site evaluation and risk assessment, and perform basic trend analysis. Based on my analysis of the data the 95% UCL for arsenic across the site is 6.925 mg/kg. The output is included as an Exhibit to this letter.

L1-21 Cont'd

According to DTSC, comparison of a site-specific 95% UCL of the mean to the 12 mg/kg upper bound concentration ***are statistically incorrect***.[13] The testing of the data performed by DTSC in its 2008 evaluation over-estimated the background concentrations. The comparison, or statistical test, of site-specific 95% UCL of the mean should be to the southern California 95% UCL of the mean arsenic soil concentration of **3.1 mg/kg.**

It is clear from my analysis of the results that the 95% UCL concentration of arsenic measured at the Project site is well above the background concentration level of 3.1 mg/kg for arsenic. Therefore, the Project's construction phase will disturb soils and may release residual contamination is present at the Project site. The District must correct this error in the hazardous materials section of the DEIR and present the results in a revised environmental impact report (REIR).

[13] https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/01/Background-Arsenic.pdf.

9 | Page

2. Response to Comments

Conclusion

The facts identified and referenced in this comment letter lead me to reasonably conclude that the Project could result in significant impacts if allowed to proceed. An environmental impact report should be prepared to address these substantial concerns. L1-22

Sincerely,

EXHIBIT B

2. Response to Comments

WILSON IHRIG
ACOUSTICS, NOISE & VIBRATION

CALIFORNIA
WASHINGTON
NEW YORK

April 5, 2023

Aidan P. Marshall
Adams Broadwell Joseph & Cardozo
601 Gateway Boulevard, Suite 1000
South San Francisco, CA 94080

SUBJECT: Comments on New Fontana Campus Project Noise Study

Dear Mr. Marshall

Per your request, I have reviewed the New Fontana Campus Project Draft Environmental Impact Report (DEIR) in the City of Fontana, California. The proposed project involves the relocation and expansion of the Fontana Campus to an unimproved site at 11070 Sierra Avenue. The new campus would be built in two phases over approximately a 6-year period, including many months of heavy construction. Phase 1 would consist of a welcome center, library, instructional building, automotive technology building, and operations and maintenance building. Phase 2 would include a CTE and training building, additional instructional building, and a new student and community center. The Noise and Vibration Impact Analysis is contained in Chapter 5.6 of the DEIR, with supplemental calculations in Appendix K Noise Data (Noise Study). L1-23

The Project is surrounded by noise sensitive uses – existing residences across Sierra Avenue 175 feet east of the site and 350 feet north of the site as well as a planned future residential development directly East of the project boundary. There is also an animal hospital to the north, which was not considered in the DEIR noise study.

There are several errors and omissions in the DEIR construction noise and vibration analysis. Correcting these would potentially identify several significant impacts, which require mitigation.

Construction Noise Exceeds Threshold Criteria

The DEIR states that the City of Fontana Municipal Code does not establish quantified thresholds for temporary construction noise and vibration and instead it uses Federal Transit Administration (FTA) Transit Noise and Vibration Impact Assessment Manual (Manual) noise criteria as a threshold of significance [DEIR page 5.6-8 and 5.6-13]. L1-24

The FTA Manual stresses that the criteria presented in Section 7 of the Manual should be used as guidelines only and that project-specific construction criteria should account for the existing noise environment in addition to the absolute noise levels during construction [FTA 179]. Further, CEQA Guidelines state that a project would normally have a significant effect on the environment if the project would result in "generation of a substantial temporary or permanent increase in ambient noise levels" [DEIR page 5.6-12]. **Therefore, in order to evaluate construction noise impacts, the DEIR should look at an ambient-based threshold in addition to the 80 dBA FTA criteria for detailed analysis of construction noise.** As stated in the DEIR, a change in 5 dB over ambient is readily discernible to most people in an exterior environment [DEIR page 5.6-16].

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L1-24 Cont'd

The construction noise analysis uses the three loudest pieces of construction equipment during each phase at spatially averaged distances, ranging from 135 to 545 feet to existing residences and 115 feet to 900 feet to the future development [DEIR page 5.6-16]. Per FTA detailed construction analysis guidelines [FTA page 178], **the predictions should include all equipment to be used during each phase and use the distance to each piece of equipment**, rather than the center of the site. It is inappropriate that the noise calculations use FHWA "Actual Lmax" reference levels instead of "Spec Lmax" levels, which are often higher. The Spec Lmax should be used to be conservative, since the report does not establish what equipment models would be used on site [Noise Study page K-19 through K-29].

Further, the DEIR analysis does not take into account existing noise levels at nearby residences since they are not using a relative criteria. Measurements LT-1 and ST-4 were taken close to Sierra Avenue (about 50 feet from the centerline) and represent traffic noise levels along this busy road (69 -75 dBA during the daytime per LT-1 and ST-4) [DEIR page 5.6-12]. The residences facing Sierra Avenue are set back by yards, and the traffic noise would be 3 dB lower at the building facades, due to doubling of distance for a line source. Further, as indicated by noise measurements at ST-2, residences along White Oak Lane are partially shielded from Sierra Avenue traffic and existing noise is 58 dBA. Any construction noise 5 dB above this quieter environment would be a substantial increase in ambient noise levels because a change in 5 dB over ambient is readily discernible to most people in an exterior environment.

Residences along White Oak Lane are about 200 feet from the project boundary. As shown in Table 1 below, estimated **construction noise levels for the three noisiest pieces of equipment in the example phases shown are more than 5 dB above the 58 dBA ambient and would result in a substantial increase in the ambient environment.** If additional equipment is on site, levels could reach 10 dB above ambient, which would be perceived by residents as twice as loud as the existing environment. Heavy construction will last over many months. **Constructing a temporary 10-foot high noise barrier around the perimeter of the construction site would reduce construction noise levels at these homes by 10 dB, below ambient-based threshold of significance.**

Table 1 Estimated Construction Noise Levels at White Oak Lane Residences

Phase	Equipment	FHWA Spec Lmax (dBA)	U.F.	Units	Leq at rec.[1] (dBA)	Leq w/ mitigation (noise barrier, dBA)
Site Prep	Dozer	85	40%	1	64	54
	Tractor	84	40%	1	63	53
	Roller[2]	85	20%	1	61	51
	Total:				**68**	**58**
Grading	Grader	85	40%	1	64	54
	Scraper	85	40%	1	64	54
	Tractor	84	40%	1	63	53
	Total:				**68**	**58**
Paving	Paver	85	50%	1	65	55
	Pavement Scarifier	85	20%	1	61	51
	Roller	85	20%	1	61	51
	Total:				**68**	**58**

1. Includes 5dB attenuation for shielding from building row.
2. Compaction often needed during foundation work.

2. Response to Comments

Prestige Animal Hospital Not Included in Analysis

L1-25

There is an animal hospital 50 feet to the north of the project site boundary, which includes intensive care and boarding and was not considered in the DEIR noise study. Both the animals and the workers at the hospital are sensitive to noise and vibration and construction noise and vibration levels should be evaluated at this receptor. The predominant existing noise source is traffic along Sierra Avenue and based on measurements at LT-1 and ST-1, daytime ambient levels would be 69-75 dBA. As shown in Table 2 below, **estimated construction noise levels for the three noisiest pieces of equipment are as high as 85 dBA for grading and paving work.** This is more than 10 dB over the existing ambient, which would be perceived as twice as loud as existing levels and **would be a substantial increase in ambient noise levels.** A noise barrier would be an efficient noise mitigation measure here due to the proximity of the receptor. **Constructing a 10-foot noise barrier around the perimeter of the construction site would reduce levels by 15 dB, below ambient-based threshold of significance.**

Table 2 Estimated Construction Noise Levels at Prestige Animal Hospital

Phase	Equipment	FHWA Spec Lmax (dBA)	U.F.	Units	Leq at rec. (dBA)	Leq w/ mitigation (noise barrier, dBA)
Site Prep	Dozer	85	40%	1	81	66
	Tractor	84	40%	1	80	65
	Roller	85	20%	1	78	63
	Total:				**85**	**70**
Grading	Grader	85	40%	1	81	66
	Scraper	85	40%	1	81	66
	Tractor	84	40%	1	80	65
	Total:				**85**	**70**
Paving	Paver	85	50%	1	82	67
	Roller	85	20%	1	78	63
	Total:				**85**	**70**

Prestige Animal Hospital services include surgery procedures, which makes it vibration sensitive. The DEIR does not include annoyance predictions for this facility [DEIR page 5.6-20]. The FTA Manual provides criteria for buildings where vibration would interfere with interior operations of 65 VdB and criteria for institutional daytime uses of 75 VdB. The 65 VdB criteria would apply to sensitive surgical procedures or use of lab equipment such as microscopes. As shown in Table 3, **grading and building construction work within 131 feet of the receptor would be above this criteria and paving work within 281 feet would exceed 65 VdB.**

Table 3 Estimated Construction Vibration Levels at Prestige Animal Hospital

Phase	Equipment	FTA Reference (VdB)	Distance to 65 VdB, (ft.)	Distance to 75 VdB, (ft.)
Grading / Site Preparation[1]	Large Bulldozer	87	131	61
	Loaded Trucks	86	121	56
	Small Bulldozer	58	15	7
	Vibratory Roller	97	281	131
Building Construction	Caisson Drilling	87	131	61
	Loaded Trucks	86	121	56
Paving	Vibratory Roller	97	281	131

[1] Compaction often needed during foundation work.

L1-25 Cont'd

Conclusions

There are several errors and omissions in the DEIR construction noise and vibration analysis. Correcting these would potentially identify several significant impacts, which require mitigation.

L1-26

Please feel free to contact me with any questions on this information.

Very truly yours,

WILSON IHRIG

Ani S. Toncheva
Senior Consultant

2. Response to Comments

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L1. Response to Comments from Aidan P. Marshall for Californians Allied for a Responsible Economy (CARE CA), dated April 6, 2023.

L1-1 The comment introduces the commenter and project understanding. Additionally, the comment asserts that the DEIR and supporting documentation do not comply with the requirements of CEQA and do not accurately analyze and mitigate the project's significant impacts to health risk, noise, hazardous materials, and biological resources. The commenter requests a revised EIR to be recirculated that fully discloses and mitigates the project's potentially significant environmental impacts. As discussed in Response to Comments L1-5 through L1-25, none of the comments identify new or exacerbated potential significant environmental impact, and none of the comments require changes to the project that would warrant recirculation of the DEIR. Responses to specific comments regarding air quality, noise, biological resources, and hazardous materials are provided in responses L1-5 through L1-25. No further response to this comment is necessary.

L1-2 The comment provides a description of the organization, the commenter's interest in the project, and who they represent. No response is necessary.

L1-3 The comment describes the legal background of CEQA and its purpose. No response is necessary.

L1-4 The comment describes what a lead agency must find in the CEQA document and does not include any specific comment on the DEIR. No response is necessary.

L1-5 The comment asserts that the construction health risk assessment prepared for the project and the analysis presented in the DEIR does not properly analyze the emissions of cumulative projects, including the Courtplace at Fontana project and other construction projects near the project site. Additionally, the comment asserts that the DEIR does not provide sufficient evidence to substantiate that the provided mitigation measure (AQ-1) will reduce potentially significant impacts to less-than-significant levels.

South Coast Air Quality Management District (South Coast AQMD) does not have separate project-level and cumulative significance thresholds. This is because the threshold of 10 in a million addresses the project's cumulative contribution to regional air quality problems. Furthermore, South Coast AQMD has published a report on how to address cumulative impacts from air pollution, "White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution"[1], included in Appendix B to this FEIR. On page D-3 of this report, the South Coast AQMD states:

> As Lead Agency, the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR. The only case where the significance thresholds

[1] South Coast AQMD. 2003, August. "White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution."

> for project specific and cumulative impacts differ is the Hazard Index (HI) significance threshold for toxic air contaminant (TAC) emissions. The project specific (project increment) significance threshold is HI > 1.0 while the cumulative (facility-wide) is HI > 3.0. It should be noted that the HI is only one of three TAC emission significance thresholds considered (when applicable) in a CEQA analysis. The other two are the maximum individual cancer risk (MICR) and the cancer burden, both of which use the same significance thresholds (MICR of 10 in 1 million and cancer burden of 0.5) for project specific and cumulative impacts. Projects that exceed the project-specific significance thresholds are considered by [South Coast AQMD] to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant.

As described on page 5.6-21 of the DEIR, the only construction project within 1,000 feet of the project site that has the potential to overlap with construction of the project is the Courtplace at Fontana project. However, the Courtplace at Fontana Project Initial Study/Mitigated Negative Declaration (State Clearinghouse No. 2022100111) did not include a construction health risk analysis; therefore, emissions concentrations from its development are not available. It is also speculative to assume that both these projects would be under construction at the same time for the entire duration of construction as only the proposed project's Phase 1 construction activities are fully funded at this time. Furthermore, the Courtplace at Fontana project is expected to be constructed between years 2022 to 2024, while the earliest the proposed project would begin construction would be Fall 2024.[2] Moreover, the proposed project's construction health risk analysis is extremely conservative because it assumes receptors are outdoors 24 hours a day throughout the project's construction timeline.

Nonetheless, in accordance with the South Coast AQMD methodology identified above, Section 5.1.5, *Cumulative Impacts*, of the DEIR identified on page 5.1-36 through 5.1-37 that construction of the project would exceed the cancer risk threshold during Phase 1 and Phase 2 construction activities for the off-site resident receptor 175 feet to the east of the project site. Therefore, the proposed project's contribution to cumulative air quality impacts would be cumulatively considerable prior to implementation of mitigation. As identified on page 5.1-38, implementation of Mitigation Measure AQ-1 would reduce construction risks at the nearest sensitive receptor to 1.8 per million, which is substantially below the 10 in a million project and cumulative threshold.

L1-6 The comment asserts that construction noise could exceed 5 dB above the 58 dBA ambient, resulting in a substantial increase in the ambient noise environment. However, the reference noise level of 58 (57.7) dBA was taken from Table 5.6-4, *Short-Term Noise Measurement Summary in A-weighted Sound Levels*, which summarizes ambient noise level measurements over a 15-

[2] The Year 2024 start date for the proposed project is based on preliminary information received from the Community College District, which was used for the Phase 1 model. However, the latest information from the Community College District shows that construction would not start until Year 2026.

minute period that were used to characterize the short-term ambient noise levels in the project vicinity. Table 5.6-3, *Long-Term Noise Measurement Summary*, documents that the hourly Leq along Sierra Avenue in the project vicinity ranges from 64 dBA to 75.2 dBA, more than 6 dBA higher than the short-term (15 minutes) ambient noise levels measured along Sierra Avenue.

In Appendix K to the DEIR, which included the data for the long-term noise measurements, during the hours when project construction would occur (7 a.m. to 4 p.m.), the hourly Leq ranges between 74 and 75 dBA Leq, which is higher than the projected construction noise levels of 53 to 68 dBA Leq at ST-2 and 49 to 65 dBA Leq at ST-4. Even the 76 dBA noise level generated during the paving phase would not increase the ambient noise level by 5 dBA or more.

As shown in Table 5.6-7, *Traffic Noise Levels for Existing and Project Buildout Conditions*, Sierra Avenue along the segment south of Santa Ava Avenue has existing average daily traffic (ADT) of 33,135 and future ADT of 41,023; therefore, traffic noise levels in this area would be relatively high. Project-related traffic would add less than 1 dBA to the noise level. Therefore, neither project construction nor operation would result in a substantial (5 dBA) ambient noise level increase. The suggestion by the commenter for a noise barrier is not warranted.

L1-7 The comment asserts that the Prestige Animal Hospital, which is 50 feet north of the project site, is a sensitive receptor and states that the DEIR does not analyze construction noise impacts on the animal hospital.

The Prestige Animal Hospital–South Fontana is not considered as noise sensitive as hospitals where human patients are treated but is considered as a commercial use. Therefore, it is not considered a noise-sensitive receptor where quiet is necessary for enjoyment or public safety. There is no outdoor treatment area for animals. In addition, as stated in the response for L-6, during the hours when project construction would occur (7 a.m. to 4 p.m.), traffic on Sierra Avenue generates noise levels between 74 and 75 dBA Leq. Construction on the project site would generate the highest noise levels when it takes place at or near the project's northern boundary. However, construction equipment moves around and would not stay at or near the boundary for very long time; therefore, construction noise would fluctuate, much like traffic noise would. For example, when trucks pass by the project site and/or the animal hospital, they could generate up to 87 dBA for a short period of time, which would mask construction noise. With modern commercial buildings, the exterior-to-interior noise attenuation would exceed the Environmental Protection Agency's (EPA) suggested 24 dBA and would approach 30 dBA, making the interior noise inside the animal hospital below 60 dBA. The suggestion by the commenter for a noise barrier is not warranted.

L1-8 The comment states that the DEIR does not provide substantial evidence to conclude that construction vibration impacts would be less than significant because the impact of vibration from construction activities on the neighboring animal hospital is not analyzed.

As shown in Table 5.6-9, *Vibration Levels for Typical Construction Equipment*, in the DEIR, the distance and vibration levels for the Prestige Animal Hospital (a commercial use) to the north of the project site would attenuate to below 0.1 in/sec peak particle velocity (PPV).

The values for building damage thresholds are shown in the table, "Guideline Vibration Damage Potential Threshold Criteria," which is taken from the California Department of Transportation's (Caltrans) *Transportation and Construction Vibration Guidance Manual* (2020).

Guideline Vibration Damage Potential Threshold Criteria

Structure and Condition	Maximum PPV (inch/sec)	
	Transient Sources[1]	Continuous/Frequent Intermittent Sources[2]
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.20	0.10
Historic and some old buildings	0.50	0.25
Older residential structures	0.50	0.30
New residential structures	1.00	0.50
Modern industrial/commercial buildings	2.00	0.50

Source: California Department of Transportation, "Guideline Vibration Damage Potential Threshold Criteria," Table 19 of *Transportation and Construction Vibration Guidance Manual*, 2020.
Notes: PPV = peak particle velocity; inch/sec = inches per second
1 Transient sources create a single, isolated vibration event, such as blasting or drop balls.
2 Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

The vibration damage potential threshold criteria for modern industrial/commercial buildings is 0.50 PPV for continuous/frequent and intermittent sources of vibration. Table 5.6-9 in the DEIR shows that none of the construction equipment would result in a vibration level that exceeds this potentially significant level.

Based on "Federal Transit Administration Vibration Impact Criteria," Table 8 of *Transportation and Construction Vibration Guidance Manual*, the FTA developed vibration criteria based on building use. For infrequent events (less than 70 events per day) such as construction equipment, the vibration impact criteria for residences and buildings where people normally sleep is 80 VdB. For institutional land uses such as commercial and office buildings with primarily daytime use, the vibration level is 83 VdB. Table 5.6-9 shows that vibration from project construction would result in a maximum of 0.074 in/sec PPV (from vibration roller) for the commercial buildings to the north. This level of vibration is equivalent to 85 VdB, which is 1 VdB higher than the 83 VdB threshold recommended for commercial buildings. Vibration from other equipment would result in 0.031 in/sec PPV (78 VdB) at the commercial buildings to the north. Because vibration level attenuates by 9 VdB per doubling of the distance between the source and the receiver of concern, in order for the 94 VdB at 25 feet from the vibratory roller to drop to 83 VdB, the distance would need to be 60 feet (as opposed

to 25 feet) from the vibration source. The building at the adjacent Prestige Animal Hospital is 40 feet from its southern property line. The northern project boundary near the animal hospital would be designed for landscaping and parking area, and would not be required to use vibratory roller. The area would be compacted with other methodologies, such as flatbed compactor that generates lower vibration compared to the vibratory roller. Therefore, as long as the use of vibration roller on the project site is 50 feet or more from the project's northern boundary near the adjacent animal hospital, no significant annoyance effect would occur from project construction.

L1-9 The comment asserts that arsenic concentration levels exceed residential and commercial health risk thresholds, and the DEIR does not present sufficient evidence to consider potential impacts less than significant.

Although the arsenic concentrations are lower than background concentrations and thus the site is not considered contaminated, the levels exceed the very conservative risk-based screening levels for residential and commercial land uses. The exposure assumptions for residential uses assume that exposure will occur 24 hours per day for 350 days per year for 30 years. The exposure assumptions for commercial uses assume that the exposure will occur 8 hours per day for 250 days per year for 25 years. However, the only routes for exposure for arsenic in soil are dermal contact, ingestion, and inhalation of dust. During the construction phase of the project, the most likely exposure route among these pathways is inhalation of dust because standard construction practices require the routine use of gloves and handwashing prior to eating food. Construction activities will abide by the PPP AIR-4 standards to prevent fugitive dust from impacting workers and adjoining potential receptors off-site and would occur over a short-term duration, not exceeding seven years. Once the project is built out, it is unlikely that any of the pathways to exposure would be complete because direct dermal contact with soil, soil ingestion, and dust generation would be prevented by project design, including impervious areas and the use of landscaping in open areas.

L1-10 The comment asserts that that construction of the project will disturb soils and may release residual contamination that is present at the project site, which may result in a potentially significant impact.

The ambient arsenic level is most appropriately determined on a site-by-site basis. The project site is approximately 0.22 mile east of the proposed site for Cypress Continuation High School, which was not built, but the site was evaluated by the Department of Toxic Substances Control and received No Further Action in 2005. The DTSC-approved project used a background metals dataset obtained from another DTSC-approved project approximately 0.69 mile west-northwest of the project site, where Jurupa Hills High School is currently located. A statistical evaluation was performed—as described in DTSC's guidance document "Arsenic Strategies" (January 16, 2009). The results of the statistical evaluation are presented in the table, *Descriptive Statistics of Site and Background Arsenic Data*.

Descriptive Statistics of Site and Background Arsenic Data

Statistic	Project Site Value	Background Value
Number of Samples	7	8
Minimum detected concentration	4.4 mg/kg	4.62 mg/kg
Maximum detected concentration	8.1 mg/kg	11.8 mg/kg
Mean	6.043 mg/kg	8.091 mg/kg
Median	6 mg/kg	7.685 mg/kg
Standard deviation	1.201	3.142
95 percent UCL	6.925 mg/kg	10.2 mg/kg

The 95 percent upper confidence limit (UCL) concentrations were calculated using ProUCL 5.2 software. ProUCL calculations are included in Appendix C to this FEIR.

The statistical analysis of the site arsenic data indicates a 95 percent UCL of 6.925 mg/kg and the background arsenic data set indicates a 95 percent UCL of 10.2 mg/kg. The site arsenic values are lower; therefore, arsenic concentrations identified in surface soil at the site are lower than background concentrations using a DTSC-accepted and previously used dataset specifically formulated for this part of Fontana, and further assessment of arsenic in soil is not warranted.

L1-11 The comment asserts that the project would disturb unconsolidated Delhi sands on the project site that provide "moderate quality" habitat for Delhi Sands Flower-Loving Fly (DSF), a federally endangered species. The comment argues that, considering the estimated remaining DSF habitat stated in the 1997 "Final Recovery Plan for the Delhi Sand Flower Loving Fly," which is "1,200 acres of habitat that can support this species,"[3] the project could remove over 1 percent of the remaining DSF habitat, which would result in a greater impact. This is inaccurate because, according to the Recovery Plan Amendment (October 2019) for the DSF Final Recovery Plan, within the three recovery units (Ontario, Jurupa, and Colton) are 56,002 acres that are suitable either for reintroduction or dispersal. Furthermore, 12,763 acres of land are left underdeveloped and mapped as once having comprised Delhi Sands soils, and the project site is identified as "Under-developed Lands."[4] Therefore, the proposed project could potentially remove approximately 0.01 percent of potentially restorable DSF habitat.

L1-12 The comment asserts Mitigation Measure BIO-2, Option 1, which requires a second Delhi Sands Flower-Loving Fly (DSF) protocol survey, is inadequate because it does not require habitat compensation if no DSF is detected.

[3] U S Fish and Wildlife Service, "Final Delhi Sands Flower-Loving Fly Recovery Plan," Portland, OR: USFWS Pacific Region, 1997, p 9, https://ecos.fws.gov/docs/recovery_plan/970914.pdf.

[4] See Figure 1 and Figure 2 of the Recovery Plan Amendment, approved October 2019, https://ecos.fws.gov/docs/recovery_plan/Amendment%20for%20DSFF.pdf.

The DSF and associated *occupied* habitat is protected by the USFWS under the federal Endangered Species Act (FESA). *Suitable* habitat within the USFWS Recovery Plan is not protected by the FESA. Suitable habitat for federally endangered species, including the DSF, requires determination of the species' presence or absence; if the species is present, FESA and CEQA requirements must be met. Therefore, as stated in CM-BIO-2, Delhi Sands Flower-loving Fly Focused Surveys, of the 2022 Biological Resources Technical Report by Cadre Environmental (Appendix D to the DEIR):

> The entire Project Site is mapped as Delhi fine sand soils, is located within the USFWS Jurupa Recovery Unit for the Delhi sands flower-loving fly, and represents suitable habitat for the species (USFWS 2008, NRCS 2021, Osborne Biological Consulting 2011), as shown in Figure 7, Soils Association Map (USFWS 2008). Therefore, a USFWS two-year protocol survey for the Delhi sands flower-loving fly shall be conducted to determine presence/absence. If the species is detected onsite, formal consultation with the USFWS will be required. If the species is not detected onsite, no further action will be required.

If DSF is detected on-site, mitigation would be required and determined through consultation with the USFWS. As stated above, if the species is not detected onsite, no further action will be required. As stated by the USFWS, "A recovery plan provides guidance on how best to help listed species achieve recovery, but it is not a regulatory document" (emphasis added). (USFWS 2019).

Within the proposed 14.3-acre project site, the project proposes to develop 9.6 acres of Delhi Sands soil. The project site has development on three sides and an open area to the west, and it is in the Jurupa Recovery Unit. The purpose of the recovery unit is "to identify and protect areas without which, the targeted species could not be protected." Though the Recovery Plan states that one goal is to maintain genetic diversity of the fly, it does not require that mitigation be within the same recovery unit as the impact.

Though the project site could act as a stepping stone to help maintain a dispersal corridor for the DSF, loss of 9.6 acres would not jeopardize the DSF. More suitable habitat is immediately to the west of the project site and could provide the same function as a stepping stone to maintain dispersal. The District proposes the following to reduce potential impacts to DSF habitat to less than significant:

If no DSF is found in 2nd year survey,

1. Change soil surface conditions by June 30, 2024.

If DSF is found and HCP required,

1. Avoid and preserve 4.7 acres on-site.

2. Enhance the potential habitat and educational programs to the public to aid in reestablishment of natural DSF habitat. (A functional assessment may be used to determine the habitat uplift potential, but as a goal it would take the habitat from "moderate quality" to "quality" providing a base 2.35 acre or more habitat credit with the concurrence of USFWS.

3. Provide education to the public through an interactive DSF habitat, classroom, and field program in collaboration with UFWS, or

4. Provide additional mitigation acreage for any remaining impacts to DSF habitat.

L1-13 The comment asserts that Mitigation Measure BIO-2, Option 2, is flawed because the mitigation measure is unclear and ineffective. Please refer to Responses L1-11 and L1-12.

L1-14 The comment asserts that planned developments identified in the environmental setting section of the DEIR must be considered cumulative projects because they may have the same adverse impacts on DSF habitat as the project by eliminating DSF habitat. Please refer to Responses L1-11 and L1-12.

L1-15 The comment claims that the DEIR fails to provide compensatory habitat mitigation for burrowing owl in MM BIO-4, Burrowing Owl Preconstruction Surveys, which requires preconstruction surveys but does not require habitat compensation in the event burrowing owl is detected. The commenter states that MM BIO-4 does not mitigate project impacts sufficiently to reduce them to less-than-significant levels. Additionally, in regard to other sensitive avian species, the commenter states that the MM BIO-3 does not include any habitat mitigation and only calls for preconstruction surveys to avoid incidental take.

As stated in CM-BIO-4, Burrowing Owl Preconstruction Surveys, of the 2022 Biological Resources Technical Report by Cadre Environmental (Appendix D to the DEIR),

> Prior to initial grading or clearing, a qualified biologist shall conduct a pre-construction survey, in accordance with the CDFW Staff Report on Burrowing Owl Mitigation, to determine the presence or absence of burrowing owl within the proposed area of impact. Specifically, two (2) pre-construction clearance surveys should be conducted 14 to 30 days and 24 hours prior to any vegetation removal or ground disturbing activities. Documentation of findings shall be submitted to the City of Fontana for review and approval. If no burrowing owls or occupied burrows are detected, construction may begin. If an occupied burrow is found within the development footprint during pre-construction clearance surveys, a burrowing owl exclusion and mitigation plan would need to be prepared and submitted to CDFW for approval prior to initiating project activities.

If burrowing owl are detected during the preconstruction surveys, habitat compensation and/or implementation of conservation measures would be included in the mitigation plan,

which would require CDFW review and approval. The applicant has not failed to commit to habitat compensation in the event burrowing owl is detected.

The 2022 Biological Resources Technical Report adequately addressed the loss of foraging habitat respective of characterizing existing conditions (disturbed), adjacent land uses, and project size, none of which independently or collectively warrant a significant impact determination. Preconstruction nesting bird and raptor surveys are a standard approach to ensure compliance with Fish and Game Code Sections 3503 and 3513 and MBTA requirements. Compliance with these measures will also ensure no direct or indirect impacts to sensitive bird/raptor species, if present.

L1-16 This comment provides a conclusion to the letter and reiterates that a revised EIR should be prepared and recirculated in response to the comments in the letter. However, as discussed in Responses to Comments L1-5 through L1-15, none of the comments identify new or exacerbated potential significant environmental impacts, and none of the comments require changes to the project that would warrant recirculation of the DEIR. No further response to this comment is necessary.

L1-17 The comment provides a description of the project and serves as an introduction to comments made by Clark & Associates. No response is necessary.

L1-18 The comment provides a description of the project and serves as an introduction to comments made by Clark & Associates. No response is necessary.

L1-19 The comment asserts that the HRA prepared for the project did not prepare a cumulative analysis of all the emissions from the construction phase and that an HRA of the operational phase of the project was not prepared. The commenter explains the potential health risks from the exposure to TACs and states that the DEIR does not quantify the potential health impacts on sensitive receptors near the project site from emissions generated during construction and operation of the project.

See response to Comment L1-5 regarding cumulative construction health risk. As previously stated in this response, South Coast AQMD does not have separate project-level and cumulative significance thresholds because the threshold of 10 in a million addresses the project's cumulative contribution to regional air quality problems. Projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant. The construction HRA specifically analyzed health risks from exposure to diesel particulate matter (DPM) emissions. It was conducted according to the latest methodology promulgated by the California Office of Environmental Health Hazard Assessment, the 2015 "Air Toxics Hot Spots Program Guidance Manual for the Preparation of Health Risk Assessments." As identified on DEIR page 5.1-38, implementation of Mitigation Measure 5.1-4 would reduce construction risks at the nearest sensitive receptor to 1.8 per million, which is substantially below the 10 in a million project and cumulative threshold. Therefore, the air quality analysis

appropriately addressed the project's health risks to the nearest sensitive receptors from toxic air contaminant emissions during the project's construction phases.

For long-term health impacts associated with the project, the commenter notes that the proposed project does not compare the excess health risk impact of the operational phase of the proposed project to the South Coast AQMD's specific numeric threshold of 10 in one million. However, South Coast AQMD provides guidance on which types of projects warrant this type of analysis, including manufacturing processes, automotive repair, dry cleaning facilities, distribution centers that generate over 100 diesel truck trips per day, and other facilities that generate toxic air contaminants (TACs). The proposed project does not propose these types of uses, and the commenter has not presented any evidence that TACs or DPM would be generated by operation of the proposed project in any meaningful amount such that significant impacts may result. Therefore, because the project would not exceed the project and cumulative health risks thresholds and would have less than significant cumulative health risk impacts, no operational HRA is needed for the proposed project, and impacts identified under Impact 5.1-5 are less than significant.

L1-20 The comment states that the DEIR lists the background health risk for the South Coast Air Basin (SoCAB) at 450 in 1,000,000; however, the results of the SCAQMD's MATES V study state that the health risk in zip code 92337, where the project site is located, is greater than for the rest of the SoCAB (472 in 1,000,000). The commenter provides a figure to demonstrate the largest contributors to cancer risk near the project site.

The MATES V cancer risk information is noted. Page 5.1-22 of the DEIR discusses that an EIR must identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 [Case No. S213478]). In its ruling, the California Supreme Court stated,

> In light of CEQA's text, statutory structure, and purpose, we conclude that agencies generally subject to CEQA are not required to analyze the impact of existing environmental conditions on a project's future users or residents. But when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project's impact on the environment—and not the environment's impact on the project—that compels an evaluation of how future residents or users could be affected by exacerbated conditions.

The DEIR determined that the proposed project would not exacerbate existing environmental hazards or conditions, and there are no special circumstance that require evaluation of the existing environment's impact on the project.

The court also stated that "ordinary CEQA analysis is concerned with a project's impact on the environment, rather than with the environment's impact on a project and its users or residents." Furthermore, Section 21060.5 of CEQA defines "environment" as "the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise, objects of historic or aesthetic significance."

As identified in response to Comment L1-18, the proposed project would not result in a long-term increase in DPM or TACs in the project vicinity. Moreover, the Fontana campus is being relocated from its current location at 16855 Merrill Avenue, which is north of the project site. And finally, as documented in the South Coast AQMD MATES V study, pollution and DPM in the South Coast AQMD region are generally decreasing.

L1-21 The comment asserts that Phase II Investigation of the site did not analyze the arsenic results collected in the surface soils by comparing them to the most recent DTSC analysis of background concentrations of arsenic.

As substantiated in the response to comment L1-10, the site arsenic concentrations are lower than the DTSC-accepted and previously used dataset specifically formulated for this part of Fontana. Further assessment of arsenic in soil is not warranted, and the soil is not considered contaminated.

L1-22 This comment provides a conclusion to the letter provided by the commenter, and states that the project could result in significant environmental impacts. However, as discussed in Responses to Comments L1-19 through L1-22, above, none of the comments identify new or exacerbated potential significant environmental impact. No further response to this comment is necessary.

L1-23 The comment serves as an introduction to comments made by Wilson Ihrig and describes the project and its current environment. No response is necessary.

L1-24 The comment states that the DEIR should look at an ambient-based threshold in addition to the 80 dBA FTA criteria for detailed analysis of construction noise. The comment states that the analysis in the DEIR should include all equipment to be used during each phase and use the distance to each piece of equipment, rather than the center of the site. Additionally, the commenter states that the DEIR analysis does not take into account existing noise levels at nearby residences since they are not using a relative criteria.

For responses to "substantial temporary increase over ambient noise level during construction period," please see responses to Comment L1-6. Construction activities would not increase the ambient noise level by 5 dBA or more at noise-sensitive receptors.

Table 5.6-4 of the DEIR listed the measured short-term ambient noise levels at four locations in the project vicinity.

- ST-1 (70.0 dBA Leq and 85.8 dBA Lmax) is on the sidewalk on the north side of Santa Ana Avenue.
- ST-2 (57.7 dBA Leq and 72.8 dBA Lmax) is on the sidewalk along Post Oak Lane, where residences' backyards face Sierra Avenue.
- ST-4 (69.2 dBA Leq and 76.1 dBA Lmax) is on the sidewalk along Sierra Avenue.

As shown above, residences near ST-2 would have higher ambient noise levels in their backyards (facing Sierra Avenue, 69.2 dBA Leq at ST-4) than in their front yards (facing Post Oak Ln, 57.7 dBA Leq). At residences near ST-4, traffic noise in the backyard may be partially shielded by the structure, but the difference would be less than 3 dBA because less than half of the traffic noise would be shielded by the structure. Therefore, if project construction would not exceed ambient noise in their front yard by 5 dBA, it would not be more than 5 dBA above the ambient noise level in their backyard.

Noise is represented on a logarithmic scale, which means that louder noise sources would dominate the resulting combined noise level. For example, equipment that is 10 dBA lower than the other equipment would not contribute discernably to the combined noise level (e.g., 50 dBA + 62 dBA = 62.3 dBA). Because construction equipment moves around the construction site with fluctuating distances to the off-site receivers, the distance from the off-site receiver is usually measured from the acoustic center of the construction activity—or sometimes from the center of the construction site if the site is not too big. The construction noise analysis uses the three loudest pieces of construction equipment during each phase at spatially averaged distances. This approach generates results that are very close to those following the Federal Transit Administration's (FTA) detailed construction analysis guidelines, which includes all equipment to be used during each phase and uses the distance to each piece of equipment.

Further, the Federal Highway Administration (FHWA) specification, or "Spec," limit for each piece of equipment is expressed as an Lmax level in dBA "slow" at a reference distance of 50 feet from the loudest side of the equipment. "Actual Lmax" is the measured "Actual" emission level at 50 feet for each piece of equipment based on hundreds of emission measurements performed on the Central Artery/Tunnel Project in Boston, Massachusetts (Massachusetts Turnpike Authority, 2002), that were averaged together to compute the "Actual" emission level. When there is lack of empirical or actual results, the theoretical or Spec level can be used.

L1-25 The comment asserts that the Prestige Animal Hospital, which is 50 feet north of the project site, is a sensitive receptor and states that the DEIR does not analyze construction noise impacts on the animal hospital. For potential construction noise and vibration impacts on the Prestige Animal Hospital to the north of the project site, please refer to responses in L1-7 (noise) and L1-8 (vibration).

L1-26 This comment provides a conclusion to the letter provided by the commenter, and states that there are several errors and omissions in the DEIR construction noise and vibration analysis. However, as discussed in Responses to Comments L1-24 and L1-25, none of the comments identify new or exacerbated potential significant environmental impacts. No further response to this comment is necessary.

3. Revisions to the Draft EIR

3.1 INTRODUCTION

This section contains revisions to the Draft EIR based on (1) additional or revised information required to prepare a response to a specific comment; (2) applicable updated information that was not available at the time of Draft EIR publication; and/or (3) typographical errors. This section also includes additional mitigation measures to fully respond to commenter concerns as well as to provide additional clarification to mitigation requirements in the Draft EIR. The provision of these additional mitigation measures does not alter any impact significance conclusions as disclosed in the Draft EIR. Changes made to the Draft EIR are identified here in ~~strikeout text~~ to indicate deletions and in **underlined and bold text** to signify additions.

3.2 DRAFT EIR REVISIONS IN RESPONSE TO WRITTEN COMMENTS

The following text has been revised to correct the inadvertent editorial error and in response to comments received on the Draft EIR.

Page 4-2, Chapter 4, *Environmental Setting,* Section 4.2.2.2, *South Coast Air Basin Air Quality Management Plan*, has been modified as follows.

The SoCAB is designated nonattainment for O_3 and $PM_{2.5}$, (San Bernardino County only) under the California and National AAQS and nonattainment for PM_{10} under the California AAQS (CARB ~~2021~~**2022**; USEPA ~~2021~~**2023**).

Page 4-2, Chapter 4, *Environmental Setting,* Section 4.2.2.3, *Greenhouse Gas Emissions Reduction Legislation*, has been modified as follows.

- **Senate Bill 32** made the Executive Order B-30-15 goal for year 2030 of a 40 percent reduction below 1990 levels by 2030 into a statewide-mandated legislative target. CARB issued an update to its Scoping Plan in 2017 that lays out programs for meeting the SB 32 reduction target (CARB ~~2017~~**2018**).

Page 4-12, Chapter 4, *Environmental Setting,* Section 4.5, *References*, has been modified as follows.

California Air Resources Board (CARB). 2008, October. Climate Change Proposed Scoping Plan: A Framework for Change.

3. Revisions to the Draft EIR

———. ~~2010~~**2018**, August. Staff Report Proposed Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375.

———. ~~2021~~**2022**. Map of Current State and Federal Area Designations. https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

Southern California Association of Governments (SCAG). ~~2019, November. Draft Connect SoCal Plan: The 2020-2045 Regional Transportation Plan/ Sustainable Communities Strategy of The Southern California Association of Governments. https://www.connectsocal.org/Documents/Draft/dConnectSoCal_Draft-Plan.pdf.~~

———.2020. Adopted Final Connect SoCal. Accessed July 14, 2021. https://www.connectsocal.org/Pages/Connect-SoCal-Final-Plan.aspx.

US Environmental Protection Agency (EPA). ~~2021, August 31~~**2023, February 28**. California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. https://www3.epa.gov/airquality/greenbook/anayo_ca.html.

Page 5.1-17, Section 5.1, *Air Quality,* Section 5.1.1, *Environmental Setting*, has been modified as follows.

Table 5.1-4 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Thresholds Were Exceeded and Maximum Levels[1, 2]				
	2017	2018	2019	2020	2021
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	33	38	41	56	44
State & Federal 8-hour ≥ 0.070 ppm (days exceed threshold)	49	69	67	89	81
Max. 1-Hour Conc. (ppm)	0.137	0.141	0.124	0.151	0.125
Max. 8-Hour Conc. (ppm)	0.118	0.111	0.109	0.111	0.103
Nitrogen Dioxide (NO_2)					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.0692	0.0630	0.0761	0.0664	0.0672
Coarse Particulates (PM_{10})					
State 24-Hour > 50 µg/m^3 (days exceed threshold)	8	8	11	6	3
Federal 24-Hour > 150 µg/m^3 (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (µg/m^3)	75.3	64.1	88.8	76.8	73.8
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 µg/m^3 (days exceed threshold)	1	0	3	4	2
Max. 24-Hour Conc. (µg/m^3)	39.2	29.2	81.3	57.6	55.1

Source: CARB 2022~~e~~**d**.
Notes: ppm = parts per million; ppb = parts per billion; µg/m^3 = micrograms per cubic meter; * = Data not available
[1] Data obtained from the Fontana–Arrow Highway Monitoring Station
[2] Most recent data available as of December 2022.

Page 5.1-39, Section 5.1, *Air Quality,* Section 5.1.9, *References*, has been modified as follows.

———. 2021~~a~~, December 9. Staff Report, CARB Review of the South Coast 2021 Redesignation Request and Maintenance Plan. https://ww2.arb.ca.gov/sites/default/files/2021-10/Staff_Report_for_the_South_Coast_PM2.5_Redesignation_Request_and_Maintenance_Plan.pdf.

———. 2022a, January (accessed). Maps of State and Federal Area Designations. https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations.

———. 2022b (accessed). Title 17. California Air Resources Board Notice of Public Hearing to Consider Proposed 2021 Amendments to Area Designations for State Ambient Air Quality Standards. https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/sad2022/notice.pdf?utm_medium=email&utm_source=govdelivery.

———. 2022~~d~~**c**, (accessed). Common Air Pollutants: Air Pollution and Health. https://ww2.arb.ca.gov/resources/common-air-pollutants.

———. 2022~~e~~**d**, January (accessed). Air Pollution Data Monitoring Cards (2016, 2017, 2018, 2019, and 2020). http://www.arb.ca.gov/adam/topfour/topfour1.php.

Page 5.2-1, Section 5.2, *Biological Resources,* has been modified as follows.

The analysis in this section is based in part on the following technical report(s):

Biological Resources Technical Report, New Fontana Campus, Chaffey Community College District, Cadre Environmental, ~~September 2021~~ **June 2022**. (Appendix D)

Page 5.2-11, Section 5.2, *Biological Resources,* Section 5.2.9*, References,* has been modified as follows.

Cadre Environmental. ~~September 2021~~ **2022, June**. *Biological Resources Technical Report, New Fontana Campus, Chaffey Community College District*. DEIR Appendix D.

Page 5.4-13, Section 5.4, *Greenhouse Gas Emissions,* Section 5.4.1, *Environmental Setting,* under "Senate Bill 375, has been modified as follows."

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB ~~2010~~**2018**). The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 had been defined by decisions that had already been made. In general, the 2020 scenarios reflected that more time was needed for large land use

and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in 3 $MMTCO_2e$ of reductions by 2020 and 15 $MMTCO_2e$ of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB ~~2010~~**2018**).

Page 5.4-23, Section 5.4, *Greenhouse Gas Emission,* Section 5.4.3, *Plans, Programs, and Policies*, has been modified as follows.

PPP GHG-7 On January 18, 2007, Governor Arnold Schwarzenegger issued Executive Order S-1-07 requiring the establishment of a Low Carbon Fuel Standard (LCFS) for transportation fuels. The LCFS was amended in 2011 and readopted in 2015. This statewide goal requires that California's transportation fuels reduce their carbon intensity by at least ~~10~~**18** percent by ~~2020~~**2030**.

PPP GHG-8 The 2007 Energy Bill creates new federal requirements for increases in fleetwide fuel economy for passenger vehicles and light trucks under the Federal Corporate Average Fuel Economy Standards. The federal legislation requires a fleetwide average of 40.4 miles per gallon (mpg) to be achieved by 2026.

PPP GHG-9 On July 22, 2002, Governor Gray Davis signed Assembly Bill 1493 (Pavley) requiring CARB to develop and adopt regulations designed to reduce greenhouse gases emitted by passenger vehicles and light-duty trucks beginning with the 2009 model year. **In January 2012, CARB approved the Advanced Clean Cars program for model years 2017 through 2025. Under California's Advanced Clean Car program, by 2025 new automobiles will emit 34 percent less GHG and 75 percent less smog-forming emissions.** ~~The standards set within the Pavley regulations are expected to reduce GHG emissions from California passenger vehicles by about 22 percent in 2012 and about 30 percent in 2016.~~ California had petitioned the US Environmental Protection Agency (EPA) in December 2005 to allow these more stringent standards and California executive agencies have repeated their commitment to higher mileage standards. On July 1, 2009, the EPA granted California a waiver that will enable the state to enforce stricter tailpipe emissions on new motor vehicles.

Page 5.4-28, Section 5.4, *Greenhouse Gas Emission,* Section 5.4.9, *References*, has been modified as follows.

California Air Resources Board (CARB). 2008. 2008 Climate Change Scoping Plan.

~~———. 2010, September 23. Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375. https://ww3.arb.ca.gov/board/res/2010/res10-31.pdf.~~

Page 5.5-27, Section 5.5, *Hydrology and Water Quality,* Section 5.4.9, *References*, has been modified as follows.

San Bernardino, County of. 2021, November 21 (accessed). HCOC Exemption Criteria and Map. Appendix F of Technical Guidance Document for Water Quality Management Plans. ~~http://cms.sbcounty.gov/Portals/50/Land/AppendixF-HCOCExemptionCriteriaandMap.pdf?ver=2013-02-28-193056-000.~~ **https://www.sbcounty.gov/uploads/DPW/docs/AppendixF-HCOCExemptionCriteriaandMap.pdf.**

———. 2019. Hazards Element Interactive Web Maps. *San Bernardino County Countywide Plan.* Accessed January 10, 2022. ~~https://countywideplan.com/resources/maps-tables-figures/.~~ **https://countywideplan.com/wp-content/uploads/sites/68/2021/02/HZ-4-Flood-Hazards-201027.pdf.**

Page 5.6-16, Section 5.6, *Noise*, Section 5.6.4.2, *Impact Analysis*, has been modified as follows.

In addition, although the short-term ambient noise level at ST-2 was 58 (57.7) dBA, as shown in Table 5.6-4, Short-term Noise Measurement Summary in A-weighted Sound Levels, Table 5.6-3, Long-term Noise Measurement Summary, documents that, along Sierra Avenue (LT-1) in the project vicinity, the hourly Leq ranges from 64 dBA to 75.2 dBA, more than 6 dBA higher than the short-term (15 minutes) ambient noise levels measured along Sierra Avenue. Appendix K, where the data for the long-term noise measurements was included, further shows that the measured noise levels during the hours (7 a.m. to 4 p.m.) when project construction would occur, the hourly Leq ranges between 74 and 75 dBA Leq. This range of ambient noise levels is higher than the projected construction noise levels of 53 to 68 dBA Leq at ST-2 and 49 to 65 dBA Leq at ST-4. Even the 76 dBA noise level generated during the paving phase would not exceed the ambient noise level (74 + 5 = 79 dBA) by 5 dBA or more.

As shown in Table 5.6-7, Sierra Avenue along the segment south of Santa Ava Avenue carries traffic volumes from the existing 33135 average daily traffic (ADT) to the future 41023 ADT, traffic noise level in this area would be relatively high. Project-related traffic would result in less than 1 dBA in noise level increase. Therefore, both project construction and operation would not result in substantial (5 dBA) ambient noise level increase.

The proposed text change does not require recirculation of the EIR because it does not identify new information that would give rise to a new significant noise impact; a substantial increase in the severity of an environmental impact; or suggest a Project alternative or Mitigation Measure considerably different from others previously analyzed in the DEIR.

3. Revisions to the Draft EIR

Page 8-22, Chapter 8, *Impacts Found Not to Be Significant*, Section 8.7(a), *Mineral Resources*, has been modified as follows:.

No Impact. The California Geological Survey Mineral Resources Project provides information about California's nonfuel mineral resources. The Mineral Resources Project classifies lands throughout the state that contain regionally significant mineral resources as mandated by the Surface Mining and Reclamation Act of 1975. ~~The California Geological Survey classifies mineral resources area as one of the four Mineral Resource Zones (MRZs), Scientific Resource Zones (SZ), or Identified Resource Areas (IRAs). Areas designated MRZ-2 indicates are areas where adequate information indicates that significant mineral deposits are present, or a likelihood of their presence and development should be controlled.~~ The project site is in an area designated as Urban Area (CGS 2008). The project site was previously used for agriculture and has no history of mining. Based on the project site's location, development of the proposed project would not result in the loss of availability of known mineral resources. No impact would occur.

Page 8-22, Chapter 8, *Impacts Found Not to Be Significant*, Section 8.7(b), *Mineral Resources*, has been modified as follows:.

Less Than Significant Impact. The project site is ~~not~~ located in an area designated as ~~MRZ-2~~**Urban Area (CGS 2008)**. The proposed project would not impact the availability of a locally important mineral resource. No impacts would occur.

Page 8-33, Chapter 8, *Impacts Found Not to Be Significant,* Section 8.13, *References*, has been modified as follows.

~~San Bernardino County Stormwater Program (SBCSP). 2014, November 5. Watershed Action Plan. Appendix L. https://www.waterboards.ca.gov/rwqcb8/water_issues/programs/stormwater/docs/sbpermit/wap/Phase%202%20Second/Appendix_L_Subwatershed_Fact_Sheets.pdf.~~

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Appendix A. Resumes for Adams Broadwell Joseph & Cardozo, Clark & Associates, and Wilson Ihrig

Appendix

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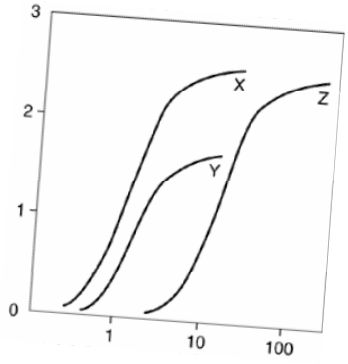
Exhibit A:

Curriculum Vitae



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James J. J. Clark, Ph.D.

Principal Toxicologist

Toxicology/Exposure Assessment Modeling

Risk Assessment/Analysis/Dispersion Modeling

Education:

Ph.D., Environmental Health Science, University of California, 1995

M.S., Environmental Health Science, University of California, 1993

B.S., Biophysical and Biochemical Sciences, University of Houston, 1987

Professional Experience:

Dr. Clark is a well recognized toxicologist, air modeler, and health scientist. He has 20 years of experience in researching the effects of environmental contaminants on human health including environmental fate and transport modeling (SCREEN3, AEROMOD, ISCST3, Johnson-Ettinger Vapor Intrusion Modeling); exposure assessment modeling (partitioning of contaminants in the environment as well as PBPK modeling); conducting and managing human health risk assessments for regulatory compliance and risk-based clean-up levels; and toxicological and medical literature research.

Significant projects performed by Dr. Clark include the following:

LITIGATION SUPPORT

Case: James Harold Caygle, et al, v. Drummond Company, Inc. Circuit Court for the Tenth Judicial Circuit, Jefferson County, Alabama. Civil Action. CV-2009

Client: Environmental Litgation Group, Birmingham, Alabama

Dr. Clark performed an air quality assessment of emissions from a coke factory located in Tarrant, Alabama. The assessment reviewed include a comprehensive review of air quality standards, measured concentrations of pollutants from factory, an inspection of the facility and detailed assessment of the impacts on the community. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Rose Roper V. Nissan North America, et al. Superior Court of the State Of California for the County Of Los Angeles – Central Civil West. Civil Action. NC041739

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to multiple chemicals, including benzene, who later developed a respiratory distress. A review of the individual's medical and occupational history was performed to prepare an exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to respiratory irritants. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: O'Neil V. Sherwin Williams, et al. United States District Court Central District of California

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to petroleum distillates who later developed a bladder cancer. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Summary judgment for defendants.

Case: Moore V., Shell Oil Company, et al. Superior Court of the State Of California for the County Of Los Angeles

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to chemicals while benzene who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Raymond Saltonstall V. Fuller O'Brien, KILZ, and Zinsser, et al. United States District Court Central District of California

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to benzene who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a quantitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Richard Boyer and Elizabeth Boyer, husband and wife, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-7G.

Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.

Dr. Clark performed a toxicological assessment of a family exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: JoAnne R. Cook, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-9R

Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.

Dr. Clark performed a toxicological assessment of an individual exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Patrick Allen And Susan Allen, husband and wife, and Andrew Allen, a minor, V. DESCO Corporation, et al. Circuit Court of Brooke County, West Virginia. Civil Action Number 04-C-W

Client: Frankovitch, Anetakis, Colantonio & Simon, Morgantown, West Virginia.

Dr. Clark performed a toxicological assessment of a family exposed to chlorinated solvents released from the defendant's facility into local drinking water supplies. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to chlorinated solvents. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Michael Fahey, Susan Fahey V. Atlantic Richfield Company, et al. United States District Court Central District of California Civil Action Number CV-06 7109 JCL.

Client: Rose, Klein, Marias, LLP, Long Beach, California

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to refined petroleum hydrocarbons who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Settlement in favor of plaintiff.

Case: Constance Acevedo, et al., V. California Spray-Chemical Company, et al., Superior Court of the State Of California, County Of Santa Cruz. Case No. CV 146344

Dr. Clark performed a comprehensive exposure assessment of community members exposed to toxic metals from a former lead arsenate manufacturing facility. The former manufacturing site had undergone a DTSC mandated removal action/remediation for the presence of the toxic metals at the site. Opinions were presented regarding the elevated levels of arsenic and lead (in attic dust and soils) found throughout the community and the potential for harm to the plaintiffs in question.

Case Result: Settlement in favor of defendant.

Case: Michael Nawrocki V. The Coastal Corporation, Kurk Fuel Company, Pautler Oil Service, State of New York Supreme Court, County of Erie, Index Number I2001-11247

Client: Richard G. Berger Attorney At Law, Buffalo, New York

Dr. Clark performed a toxicological assessment of an individual occupationally exposed to refined petroleum hydrocarbons who later developed a leukogenic disease. A review of the individual's medical and occupational history was performed to prepare a qualitative exposure assessment. The exposure assessment was evaluated against the

known outcomes in published literature to exposure to refined petroleum hydrocarbons. The results of the assessment and literature have been provided in a declaration to the court.

Case Result: Judgement in favor of defendant.

SELECTED AIR MODELING RESEARCH/PROJECTS

Client – Confidential

Dr. Clark performed a comprehensive evaluation of criteria pollutants, air toxins, and particulate matter emissions from a carbon black production facility to determine the impacts on the surrounding communities. The results of the dispersion model will be used to estimate acute and chronic exposure concentrations to multiple contaminants and will be incorporated into a comprehensive risk evaluation.

Client – Confidential

Dr. Clark performed a comprehensive evaluation of air toxins and particulate matter emissions from a railroad tie manufacturing facility to determine the impacts on the surrounding communities. The results of the dispersion model have been used to estimate acute and chronic exposure concentrations to multiple contaminants and have been incorporated into a comprehensive risk evaluation.

Client – Los Angeles Alliance for a New Economy (LAANE), Los Angeles, California

Dr. Clark is advising the LAANE on air quality issues related to current flight operations at the Los Angeles International Airport (LAX) operated by the Los Angeles World Airport (LAWA) Authority. He is working with the LAANE and LAX staff to develop a comprehensive strategy for meeting local community concerns over emissions from flight operations and to engage federal agencies on the issue of local impacts of community airports.

Client – City of Santa Monica, Santa Monica, California

Dr. Clark is advising the City of Santa Monica on air quality issues related to current flight operations at the facility. He is working with the City staff to develop a comprehensive strategy for meeting local community concerns over emissions from flight operations and to engage federal agencies on the issue of local impacts of community airports.

Client: Omnitrans, San Bernardino, California

Dr. Clark managed a public health survey of three communities near transit fueling facilities in San Bernardino and Montclair California in compliance with California Senate Bill 1927. The survey included an epidemiological survey of the effected communities, emission surveys of local businesses, dispersion modeling to determine potential emission concentrations within the communities, and a comprehensive risk assessment of each community. The results of the study were presented to the Governor as mandated by Senate Bill 1927.

Client: Confidential, San Francisco, California

Summarized cancer types associated with exposure to metals and smoking. Researched the specific types of cancers associated with exposure to metals and smoking. Provided causation analysis of the association between cancer types and exposure for use by non-public health professionals.

Client: Confidential, Minneapolis, Minnesota

Prepared human health risk assessment of workers exposed to VOCs from neighboring petroleum storage/transport facility. Reviewed the systems in place for distribution of petroleum hydrocarbons to identify chemicals of concern (COCs), prepared comprehensive toxicological summaries of COCs, and quantified potential risks from carcinogens and non-carcinogens to receptors at or adjacent to site. This evaluation was used in the support of litigation.

Client – United Kingdom Environmental Agency

Dr. Clark is part of team that performed comprehensive evaluation of soil vapor intrusion of VOCs from former landfill adjacent residences for the United Kingdom's Environment

Agency. The evaluation included collection of liquid and soil vapor samples at site, modeling of vapor migration using the Johnson Ettinger Vapor Intrusion model, and calculation of site-specific health based vapor thresholds for chlorinated solvents, aromatic hydrocarbons, and semi-volatile organic compounds. The evaluation also included a detailed evaluation of the use, chemical characteristics, fate and transport, and toxicology of chemicals of concern (COC). The results of the evaluation have been used as a briefing tool for public health professionals.

EMERGING/PERSISTENT CONTAMINANT RESEARCH/PROJECTS

Client: Ameren Services, St. Louis, Missouri

Managed the preparation of a comprehensive human health risk assessment of workers and residents at or near an NPL site in Missouri. The former operations at the Property included the servicing and repair of electrical transformers, which resulted in soils and groundwater beneath the Property and adjacent land becoming impacted with PCB and chlorinated solvent compounds. The results were submitted to U.S. EPA for evaluation and will be used in the final ROD.

Client: City of Santa Clarita, Santa Clarita, California

Dr. Clark is managing the oversight of the characterization, remediation and development activities of a former 1,000 acre munitions manufacturing facility for the City of Santa Clarita. The site is impacted with a number of contaminants including perchlorate, unexploded ordinance, and volatile organic compounds (VOCs). The site is currently under a number of regulatory consent orders, including an Immanent and Substantial Endangerment Order. Dr. Clark is assisting the impacted municipality with the development of remediation strategies, interaction with the responsible parties and stakeholders, as well as interfacing with the regulatory agency responsible for oversight of the site cleanup.

Client: Confidential, Los Angeles, California

Prepared comprehensive evaluation of perchlorate in environment. Dr. Clark evaluated the production, use, chemical characteristics, fate and transport, toxicology, and remediation of perchlorate. Perchlorates form the basis of solid rocket fuels and have recently been detected in water supplies in the United States. The results of this research

were presented to the USEPA, National GroundWater, and ultimately published in a recent book entitled *Perchlorate in the Environment.*

Client – Confidential, Los Angeles, California

Dr. Clark is performing a comprehensive review of the potential for pharmaceuticals and their by-products to impact groundwater and surface water supplies. This evaluation will include a review if available data on the history of pharmaceutical production in the United States; the chemical characteristics of various pharmaceuticals; environmental fate and transport; uptake by xenobiotics; the potential effects of pharmaceuticals on water treatment systems; and the potential threat to public health. The results of the evaluation may be used as a briefing tool for non-public health professionals.

PUBLIC HEALTH/TOXICOLOGY

Client: Brayton Purcell, Novato, California

Dr. Clark performed a toxicological assessment of residents exposed to methyl-tertiary butyl ether (MTBE) from leaking underground storage tanks (LUSTs) adjacent to the subject property. The symptomology of residents and guests of the subject property were evaluated against the known outcomes in published literature to exposure to MTBE. The study found that residents had been exposed to MTBE in their drinking water; that concentrations of MTBE detected at the site were above regulatory guidelines; and, that the symptoms and outcomes expressed by residents and guests were consistent with symptoms and outcomes documented in published literature.

Client: Confidential, San Francisco, California

Identified and analyzed fifty years of epidemiological literature on workplace exposures to heavy metals. This research resulted in a summary of the types of cancer and non-cancer diseases associated with occupational exposure to chromium as well as the mortality and morbidity rates.

Client: Confidential, San Francisco, California

Summarized major public health research in United States. Identified major public health research efforts within United States over last twenty years. Results were used as a briefing tool for non-public health professionals.

Client: Confidential, San Francisco, California

Quantified the potential multi-pathway dose received by humans from a pesticide applied indoors. Part of team that developed exposure model and evaluated exposure concentrations in a comprehensive report on the plausible range of doses received by a specific person. This evaluation was used in the support of litigation.

Client: Covanta Energy, Westwood, California

Evaluated health risk from metals in biosolids applied as soil amendment on agricultural lands. The biosolids were created at a forest waste cogeneration facility using 96% whole tree wood chips and 4 percent green waste. Mass loading calculations were used to estimate Cr(VI) concentrations in agricultural soils based on a maximum loading rate of 40 tons of biomass per acre of agricultural soil. The results of the study were used by the Regulatory agency to determine that the application of biosolids did not constitute a health risk to workers applying the biosolids or to residences near the agricultural lands.

Client – United Kingdom Environmental Agency

Oversaw a comprehensive toxicological evaluation of methyl-*tertiary* butyl ether (M*t*BE) for the United Kingdom's Environment Agency. The evaluation included available data on the production, use, chemical characteristics, fate and transport, toxicology, and remediation of M*t*BE. The results of the evaluation have been used as a briefing tool for public health professionals.

Client – Confidential, Los Angeles, California

Prepared comprehensive evaluation of *tertiary* butyl alcohol (TBA) in municipal drinking water system. TBA is the primary breakdown product of M*t*BE, and is suspected to be the primary cause of M*t*BE toxicity. This evaluation will include available information on the production, use, chemical characteristics, fate and transport in the environment, absorption, distribution, routes of detoxification, metabolites, carcinogenic potential, and remediation of TBA. The results of the evaluation were used as a briefing tool for non-public health professionals.

Client – Confidential, Los Angeles, California

Prepared comprehensive evaluation of methyl *tertiary* butyl ether (MTBE) in municipal drinking water system. MTBE is a chemical added to gasoline to increase the octane

rating and to meet Federally mandated emission criteria. The evaluation included available data on the production, use, chemical characteristics, fate and transport, toxicology, and remediation of MTBE. The results of the evaluation have been were used as a briefing tool for non-public health professionals.

Client – Ministry of Environment, Lands & Parks, British Columbia

Dr. Clark assisted in the development of water quality guidelines for methyl tertiary-butyl ether (MTBE) to protect water uses in British Columbia (BC). The water uses to be considered includes freshwater and marine life, wildlife, industrial, and agricultural (e.g., irrigation and livestock watering) water uses. Guidelines from other jurisdictions for the protection of drinking water, recreation and aesthetics were to be identified.

Client: Confidential, Los Angeles, California

Prepared physiologically based pharmacokinetic (PBPK) assessment of lead risk of receptors at middle school built over former industrial facility. This evaluation is being used to determine cleanup goals and will be basis for regulatory closure of site.

Client: Kaiser Venture Incorporated, Fontana, California

Prepared PBPK assessment of lead risk of receptors at a 1,100-acre former steel mill. This evaluation was used as the basis for granting closure of the site by lead regulatory agency.

RISK ASSESSMENTS/REMEDIAL INVESTIGATIONS

Client: Confidential, Atlanta, Georgia

Researched potential exposure and health risks to community members potentially exposed to creosote, polycyclic aromatic hydrocarbons, pentachlorophenol, and dioxin compounds used at a former wood treatment facility. Prepared a comprehensive toxicological summary of the chemicals of concern, including the chemical characteristics, absorption, distribution, and carcinogenic potential. Prepared risk characterization of the carcinogenic and non-carcinogenic chemicals based on the exposure assessment to quantify the potential risk to members of the surrounding community. This evaluation was used to help settle class-action tort.

Client: Confidential, Escondido, California

Prepared comprehensive Preliminary Endangerment Assessment (PEA) of dense non-aqueous liquid phase hydrocarbon (chlorinated solvents) contamination at a former printed circuit board manufacturing facility. This evaluation was used for litigation support and may be used as the basis for reaching closure of the site with the lead regulatory agency.

Client: Confidential, San Francisco, California

Summarized epidemiological evidence for connective tissue and autoimmune diseases for product liability litigation. Identified epidemiological research efforts on the health effects of medical prostheses. This research was used in a meta-analysis of the health effects and as a briefing tool for non-public health professionals.

Client: Confidential, Bogotá, Columbia

Prepared comprehensive evaluation of the potential health risks associated with the redevelopment of a 13.7 hectares plastic manufacturing facility in Bogotá, Colombia The risk assessment was used as the basis for the remedial goals and closure of the site.

Client: Confidential, Los Angeles, California

Prepared comprehensive human health risk assessment of students, staff, and residents potentially exposed to heavy metals (principally cadmium) and VOCs from soil and soil vapor at 12-acre former crude oilfield and municipal landfill. The site is currently used as a middle school housing approximately 3,000 children. The evaluation determined that the site was safe for the current and future uses and was used as the basis for regulatory closure of site.

Client: Confidential, Los Angeles, California

Managed remedial investigation (RI) of heavy metals and volatile organic chemicals (VOCs) for a 15-acre former manufacturing facility. The RI investigation of the site included over 800 different sampling locations and the collection of soil, soil gas, and groundwater samples. The site is currently used as a year round school housing approximately 3,000 children. The Remedial Investigation was performed in a manner

that did not interrupt school activities and met the time restrictions placed on the project by the overseeing regulatory agency. The RI Report identified the off-site source of metals that impacted groundwater beneath the site and the sources of VOCs in soil gas and groundwater. The RI included a numerical model of vapor intrusion into the buildings at the site from the vadose zone to determine exposure concentrations and an air dispersion model of VOCs from the proposed soil vapor treatment system. The Feasibility Study for the Site is currently being drafted and may be used as the basis for granting closure of the site by DTSC.

Client: Confidential, Los Angeles, California

Prepared comprehensive human health risk assessment of students, staff, and residents potentially exposed to heavy metals (principally lead), VOCs, SVOCs, and PCBs from soil, soil vapor, and groundwater at 15-acre former manufacturing facility. The site is currently used as a year round school housing approximately 3,000 children. The evaluation determined that the site was safe for the current and future uses and will be basis for regulatory closure of site.

Client: Confidential, Los Angeles, California

Prepared comprehensive evaluation of VOC vapor intrusion into classrooms of middle school that was former 15-acre industrial facility. Using the Johnson-Ettinger Vapor Intrusion model, the evaluation determined acceptable soil gas concentrations at the site that did not pose health threat to students, staff, and residents. This evaluation is being used to determine cleanup goals and will be basis for regulatory closure of site.

Client –Dominguez Energy, Carson, California

Prepared comprehensive evaluation of the potential health risks associated with the redevelopment of 6-acre portion of a 500-acre oil and natural gas production facility in Carson, California. The risk assessment was used as the basis for closure of the site.

Kaiser Ventures Incorporated, Fontana, California

Prepared health risk assessment of semi-volatile organic chemicals and metals for a fifty-year old wastewater treatment facility used at a 1,100-acre former steel mill. This evaluation was used as the basis for granting closure of the site by lead regulatory agency.

ANR Freight - Los Angeles, California

Prepared a comprehensive Preliminary Endangerment Assessment (PEA) of petroleum hydrocarbon and metal contamination of a former freight depot. This evaluation was as the basis for reaching closure of the site with lead regulatory agency.

Kaiser Ventures Incorporated, Fontana, California

Prepared comprehensive health risk assessment of semi-volatile organic chemicals and metals for 23-acre parcel of a 1,100-acre former steel mill. The health risk assessment was used to determine clean up goals and as the basis for granting closure of the site by lead regulatory agency. Air dispersion modeling using ISCST3 was performed to determine downwind exposure point concentrations at sensitive receptors within a 1 kilometer radius of the site. The results of the health risk assessment were presented at a public meeting sponsored by the Department of Toxic Substances Control (DTSC) in the community potentially affected by the site.

Unocal Corporation - Los Angeles, California

Prepared comprehensive assessment of petroleum hydrocarbons and metals for a former petroleum service station located next to sensitive population center (elementary school). The assessment used a probabilistic approach to estimate risks to the community and was used as the basis for granting closure of the site by lead regulatory agency.

Client: Confidential, Los Angeles, California

Managed oversight of remedial investigation most contaminated heavy metal site in California. Lead concentrations in soil excess of 68,000,000 parts per billion (ppb) have been measured at the site. This State Superfund Site was a former hard chrome plating operation that operated for approximately 40-years.

Client: Confidential, San Francisco, California

Coordinator of regional monitoring program to determine background concentrations of metals in air. Acted as liaison with SCAQMD and CARB to perform co-location sampling and comparison of accepted regulatory method with ASTM methodology.

Client: Confidential, San Francisco, California

Analyzed historical air monitoring data for South Coast Air Basin in Southern California and potential health risks related to ambient concentrations of carcinogenic metals and volatile organic compounds. Identified and reviewed the available literature and calculated risks from toxins in South Coast Air Basin.

IT Corporation, North Carolina

Prepared comprehensive evaluation of potential exposure of workers to air-borne VOCs at hazardous waste storage facility under SUPERFUND cleanup decree. Assessment used in developing health based clean-up levels.

Professional Associations

American Public Health Association (APHA)
Association for Environmental Health and Sciences (AEHS)
American Chemical Society (ACS)
California Redevelopment Association (CRA)
International Society of Environmental Forensics (ISEF)
Society of Environmental Toxicology and Chemistry (SETAC)

Publications and Presentations:

Books and Book Chapters

Sullivan, P., **J.J. J. Clark,** F.J. Agardy, and P.E. Rosenfeld. (2007). *Synthetic Toxins In The Food, Water and Air of American Cities*. Elsevier, Inc. Burlington, MA.

Sullivan, P. and **J.J. J. Clark**. 2006. *Choosing Safer Foods, A Guide To Minimizing Synthetic Chemicals In Your Diet*. Elsevier, Inc. Burlington, MA.

Sullivan, P., Agardy, F.J., and **J.J.J. Clark**. 2005. *The Environmental Science of Drinking Water*. Elsevier, Inc. Burlington, MA.

Sullivan, P.J., Agardy, F.J., **Clark, J.J.J.** 2002. *America's Threatened Drinking Water: Hazards and Solutions*. Trafford Publishing, Victoria B.C.

Clark, J.J.J. 2001. "TBA: Chemical Properties, Production & Use, Fate and Transport, Toxicology, Detection in Groundwater, and Regulatory Standards" in *Oxygenates in the Environment.* Art Diaz, Ed.. Oxford University Press: New York.

Clark, J.J.J. 2000. "Toxicology of Perchlorate" in *Perchlorate in the Environment.* Edward Urbansky, Ed. Kluwer/Plenum: New York.

Clark, J.J.J. 1995. Probabilistic Forecasting of Volatile Organic Compound Concentrations At The Soil Surface From Contaminated Groundwater. UMI.

Baker, J.; **Clark, J.J.J.**; Stanford, J.T. 1994. Ex Situ Remediation of Diesel Contaminated Railroad Sand by Soil Washing. Principles and Practices for Diesel Contaminated Soils, Volume III. P.T. Kostecki, E.J. Calabrese, and C.P.L. Barkan, eds. Amherst Scientific Publishers, Amherst, MA. pp 89-96.

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Tam L. K.., Wu C. D., Clark J. J. and **Rosenfeld, P.E.** (2008) A Statistical Analysis Of Attic Dust And Blood Lipid Concentrations Of Tetrachloro-p-Dibenzodioxin (TCDD) Toxicity Equialency Quotients (TEQ) In Two Populations Near Wood Treatment Facilities. Organohalogen Compounds, Volume 70 (2008) page 002254.

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Hensley A.R., Scott, A., Rosenfeld P.E., **Clark, J.J.J.** (2007). "Attic Dust And Human Blood Samples Collected Near A Former Wood Treatment Facility." *Environmental Research.* 105:194-199.

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Rosenfeld, P.E., **Clark, J. J.** and Suffet, I.H. 2005. "The Value Of An Odor Quality Classification Scheme For Compost Facility Evaluations" The U.S. Composting Council's 13th Annual Conference January 23 - 26, 2005, Crowne Plaza Riverwalk, San Antonio, TX.

Rosenfeld, P.E., **Clark, J. J.** and Suffet, I.H. 2004. "The Value Of An Odor Quality Classification Scheme For Urban Odor" WEFTEC 2004. 77th Annual Technical Exhibition & Conference October 2 - 6, 2004, Ernest N. Morial Convention Center, New Orleans, Louisiana.

Clark, J.J.J. 2003. "Manufacturing, Use, Regulation, and Occurrence of a Known Endocrine Disrupting Chemical (EDC), 2,4-Dichlorophnoxyacetic Acid (2,4-D) in California Drinking Water Supplies." National Groundwater Association Southwest Focus Conference: Water Supply and Emerging Contaminants. Minneapolis, MN. March 20, 2003.

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Clark J.J.J., Brown, A., Ulrey, A. 1997. Impacts of Perchlorate On Drinking Water In The Western United States. U.S. EPA Symposium on Biological and Chemical Reduction of Chlorate and Perchlorate, Cincinnati, OH, December 5, 1997.

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Ozone Exposures in Residents of Los Angeles County. American Review of Respiratory Disease. 141(4):A70.

Tierney, D.F. and **J.J.J. Clark.** (1990). Lung Polyamine Content Can Be Increased By Spermidine Infusions Into Hyperoxic Rats. American Review of Respiratory Disease. 139(4):A41.

EXHIBIT B

WILSON IHRIG
ACOUSTICS, NOISE & VIBRATION

ANI TONCHEVA

Senior Consultant

Since joining the firm in 2011, Ani has conducted analyses for transit systems, vibration sensitive research facilities, public infrastructure, construction, and other environmental noise. She has contributed to literature reviews, including research on current practices of historical preservation. She has extensive experience working on construction projects in New York City and is well versed in local noise codes.

Education

- B.A., Physics; Bard College, New York

Professional Associations

- *Member*, National Council of Acoustical Consultants (NCAC)
- *Member*, Acoustical Society of America (ASA)
- *Board Member,* Transportation Research Forum (TRF), NY Chapter and International board

Research Paper

- NCHRP 25-25, *Current Practices to Address Construction Vibration and Potential Effects to Historic Buildings Adjacent to Transportation Projects*

Relevant Experience

BART Berryessa Station Transit Noise Impact and Mitigation, San Jose, CA Assisted with noise predictions and barrier design recommendations.

Massachusetts Bay Transportation Authority (MBTA) Green Line Extension (GLX), Boston, MA Lead analyst on noise predictions and barrier design.

RTD Eagle P3 Northwest Corridor Noise and Impacts, Denver, CO Assisted with data analysis and helped prepare final technical report.

Alameda CTC, I-880 Interchange Improvements Project (Whipple Road-Industrial Southwest and Industrial Parkway West), Hayward, CA Project Manager for traffic noise study.

Alameda CTC, I-80/Ashby Avenue Interchange Improvements, Berkeley, CA Project Manager for traffic noise study.

Millennium Bulk Terminal, Longview, WA Prepared noise analysis for the project's NEPA and SEPA environmental impact statements.

Peninsula Humane Society & SPCA Haskin Hill Sanctuary, Loma Mar, CA Prepared an environmental study for a planned animal sanctuary in Loma Mar.

Analog (ArtX) Hotel, Palo Alto, CA Prepared preliminary basis of design guidelines for a new five-story boutique hotel in a residential area.

Sunnydale Block 3A & 3B Mixed-Use Residential Development, San Francisco, CA Prepared a CCR Title 24 Noise Study Report for two, mixed-use, 5-story buildings.

Columbia University Medical Center Medical and Graduate Education Building, New York, NY Conducted baseline noise survey and performed attended noise measurements during preliminary construction work.

Hudson Yards Tower C Foundations and Utilities, New York, NY Conducted a baseline noise survey prior to construction work including a combination of long-term unattended and short-term attended noise measurements.

PANYNJ Lincoln Tunnel Helix Rehabilitation, NJ Assisted in developing construction noise control and mitigation plan and implementing a remote long-term noise monitoring program at three locations.

MSK 74th Street, New York, NY Conducted baseline noise survey, assisted in developing construction noise control and mitigation plan, and implemented a long-term noise monitoring program at two locations.

NY MTA No. 7 Line Subway Extension Ventilation Facility Construction, New York, NY The project involved mining and lining of two shafts and construction of a 2-story ventilation building.

NY MTA ESA/LIRR Grand Central Terminal Fit-Out, New York, NY Prepared the Contractor's noise and vibration control plan updates for fit-out work conducted underground at the Grand Central Terminal Suburban Level.

San Francisco Planning Department, Alameda Street Wet Weather Tunnel and Folsom Area Sewer Improvement, San Francisco, CA Noise and vibration analysis for Folsom Area stormwater infrastructure improvements.

World Trade Center Vehicle Security Center, New York, NY Conducted baseline noise surveys, assisted in developing construction noise control plans, and implementing a remote long-term noise monitoring program.

50 Pine Street Condominiums, New York, NY
Project involved evaluating mechanical noise at residential dwelling units for NYC noise code

Uptown Newport, Newport Beach, CA
Evaluation of noise levels due to mechanical equipment at adjacent property.

Appendix B White Paper on Potential Control Strategies to Address Cumulative Impacts from Air Pollution

Appendix

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution

August 2003

Deputy Executive Officer
Planning, Rule Development, and Area Sources
Elaine Chang, DrPH

Assistant Deputy Executive Officer
Planning, Rule Development, and Area Sources
Laki Tisopulos, Ph.D., P.E.

Planning and Rules Manager
Jill Whynot

Authors:	Tracy A. Goss, P.E. – Air Quality Specialist Amy Kroeger – Assistant Air Quality Engineer
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Reviewed by:	Barbara Baird – District Counsel Gary Quinn, P.E. – Program Supervisor Frances Keeler – Senior Deputy District Counsel

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
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JAMES W. SILVA
Supervisor, Second District
Orange County Representative

CYNTHIA VERDUGO-PERALTA
Governor's Appointee

VACANT
Cities Representative, Los Angeles County/Western Region

EXECUTIVE OFFICER
BARRY R. WALLERSTEIN, D.Env.

FOREWORD

Since its inception in 1997, AQMD's Environmental Justice (EJ) program has sought to identify and address local air quality issues, such as those brought to the agency's attention at Town Hall events and community meetings. Such issues have included concerns that the District's existing permitting, rules, and clean fleet control programs may need enhancements to better address multiple exposures, as experienced in or near urban industrial settings, including those operating in or near low-income communities of color.

The phrase "cumulative air quality impacts" is often used to describe possible health and nuisance impacts potentially related to a given neighborhood's cumulative emissions from sources that individually comply with AQMD, state, and federal rules. As such, cumulative impacts discussed in the White Paper go beyond those covered under CEQA. In neighborhoods near a relatively large number of industrial facilities, or located near heavy cross-town traffic, for example, there is concern about the accumulated effects of numerous emission sources operating within a limited area, particularly as related to air toxics, and when the group of sources is near residences, schools, or other sensitive receptors.

This White Paper is intended to present a forward-looking comprehensive strategy of how the AQMD intends to identify and further address cumulative impacts of air pollution, so that all communities in the South Coast receive equitable treatment and attention as to their local air quality concerns. The AQMD also intends to ensure fair and consistent treatment of local businesses as it carries out this facet of environmental justice.

This paper points out potential ways to achieve more substantial progress in public health protection. It describes a basic, reasoned approach and lays out a number of tools that staff believes can lay a valuable foundation for this emerging effort; the implementation tools will be developed in more detail upon Governing Board direction, and in conjunction with ongoing working group input. The strategies outlined will directly or indirectly contribute to addressing cumulative impacts. For example, some measures are designed to address localized impacts, which are likely to also address cumulative impacts, while other strategies are more for reducing cumulative impacts. The paper also outlines areas requiring more research, and makes suggestions on how to carry this out. Some elements (e.g., MATES II), are parts of other EJ initiatives or Board directives.

This White Paper is a starting point, developed with input from the Cumulative Impacts Working Group, whose members have spent much time and energy in contributing their expert knowledge, experience, and suggestions to this pathfinding effort. Input was also incorporated from five Community Forums held throughout the four-county region in June and July, and three community meetings in August. The report however, represents the AQMD staff's recommendations in this important area of air quality management.

This White Paper is intended as a policy document. With the Governing Board's direction, staff will proceed to work with stakeholders through working groups and a full public process to develop individual proposed rules and policies for the Board's consideration. Addressing cumulative air quality impacts should not be viewed as a means to prohibit growth or to interfere with local land use decisions. AQMD staff will work with local agencies in a partnership, by providing information and technical assistance relative to their critical role in land use and mitigation measures.

Acknowledgements

The following members of the Cumulative Impacts Working Group provided valuable input and their assistance is greatly appreciated.

Facilitator	
Mr. Greg Bourne	Center for Collaborative Policy
Environmental/Community Representatives	
Mr. Luis Cabrales	California League of Conservation Voters Education Fund
Mr. Todd Campbell	Coalition for Clean Air
Mr. Bahram Fazeli	Communities for a Better Environment
Ms. Angela Johnson-Meszaros	University of Southern California
Mr. Angelo Logan	East Yard Communities for Environmental Justice
Mr. Joseph K. Lyou	California Environmental Rights Alliance
Mr. Anastacio Medina	American Lung Association
Ms. Penny Newman	Center for Community Action and Environmental Justice*
Ms. Gail Ruderman-Feuer	Natural Resources Defense Council
Industry Representatives	
Mr. Mike Carroll	Latham & Watkins
Mr. Curt Coleman	California Manufacturers Association
Mr. Bill LaMarr	California Small Business Alliance
Mr. Bill Quinn	California Council for Environmental and Economic Balance
Mr. Gary Stafford	Wood Furniture Manufacturers Association
Mr. Lee Wallace	Sempra Energy
Mr. Mike Wang	Western States Petroleum Association
Local Government / Agency Representatives	
Mr. Greg Adams	Los Angeles County Sanitation Districts
Ms. Detrich B. Allen	City of Los Angeles Environmental Affairs Division
Ms. Linda Murchison	California Air Resources Board
Ms. Winona Victery	U.S. Environmental Protection Agency

* Invited, did not attend

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

This report is an outgrowth of the following South Coast Air Quality Management District (AQMD) Governing Board actions:

- October 1997 adoption of ten Environmental Justice (EJ) Initiatives;
- September 2002 approval of enhancements to the EJ program for the Fiscal Year 2002-2003, including a directive to staff to report back on the feasibility of rulemaking to address cumulative impacts of air toxics beyond current AQMD requirements; and
- January 10, 2003 direction to staff to report back to the Board with a White Paper on regulatory and policy options for addressing cumulative impacts from air pollution emissions, including recommendations and schedule. At the January 10th meeting, staff also recommended a work plan that entailed creation of a Cumulative Impacts Working Group and a planned update to the second Multiple Air Toxics Exposure Study (MATES II).

Addressing cumulative impacts is a very complex issue. The working group process, which included a facilitator, was very helpful to staff in the development of the recommended approaches. The Working Group met seven times to discuss a program to reduce cumulative impacts from air pollution. This White Paper presents staff's recommendations regarding options for assessing cumulative impacts from sources of air pollution. It includes consideration of input received from the California Air Resources Board (CARB), U.S. Environmental Protection Agency (EPA), local government representatives, industry, and environmental and community groups on the Working Group, as well as input received from five Community Forums. Key policy issues addressed during the working group process include, but were not limited to:

- scope of the program (i.e., stationary and/or mobile sources; cancer and/or non-cancer health effects; and including particulate emissions);
- defining areas of concern for specific actions to reduce cumulative exposures, and
- potential approaches to address cumulative impacts.

Definitions

For the purposes of developing a program to address cumulative impacts from air pollution emissions, the AQMD staff will rely upon the definition of Environmental Justice that was approved by the Governing Board in October 1997:

> *Environmental Justice means the equitable environmental policymaking and enforcement to protect the health of all persons who live or work in the AQMD, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution.*

Under the subject of Environmental Justice, definitions of cumulative impact were extensively discussed by the Working Group. A cumulative impact can be defined in many ways and it is therefore difficult to arrive at a single definition that fits all circumstances. Cumulative impacts can be regional, as well as localized or neighborhood level. Estimated risks from air toxic measurement at 10 monitoring stations for residents of the South Coast Air Basin (Basin) are ~1,400 in a million (based on a range from about 1,120 in a million to about 1,740 in a million), with some areas experiencing higher risks. Reducing emissions throughout the

Basin would decrease the overall risk on a regional basis and will lower neighborhood risks by varying degrees, depending on the localized circumstances.

The following definition of a cumulative air pollution impact, while not a consensus of the Working Group members, attempts to recognize their viewpoints and develop a working definition:

> *A cumulative air pollution impact is an adverse health effect, risk or nuisance from exposure to pollutants released into the air from multiple air pollution sources.*

Further refinement or variation of this definition may be needed in the future when a specific regulation or policy is formulated. Reference to "air pollution" under this working definition is intended to include not only air toxics, but criteria pollutants, such as particulates, and nuisances (e.g., odors).

Cumulative Impacts Reduction Strategy (CIRS)

At the start of the process, to stimulate discussions, staff introduced four design principles that were factored into the working group process: no redlining (e.g., defining an acceptable/unacceptable geographical area based on level of risk); not interfering with local land use decisions, but making more comprehensive air quality information available to decision makers; reasonable decision-making time frame for CEQA analysis and permits; and resource considerations and regulatory certainty.

Based on the design criteria and early discussions of the working group, staff developed a list of initial options for addressing cumulative impacts for working group comments. Industry and environmental/community representatives were asked to provide design criteria and options. Staff then evaluated the options in an attempt to examine feasibility and to identify where efforts should be prioritized. Several information sources, most notably, MATES II, year 2000 census data, and health care data were examined in an attempt to identify potentially high cumulative impact areas.

Section IV discusses MATES II, census data, and health care information, while Section V outlines the positions and interests of key stakeholder groups. Staff carefully considered the information, as well as the viewpoints expressed by stakeholders, and has the following recommendations:

Approach

The overall approach in addressing cumulative impacts will include several key features:

- Build on existing State Implementation Plan (SIP) programs that address criteria pollutants;
- Start with existing known information (i.e., MATES II) to address cumulative impacts of air toxics;
- Identify high cumulative impact areas and develop effective solutions accordingly; and
- Continue to develop/refine technical databases and tools.

Staff will rely on implementation of the most recently approved Air Quality Management Plan (AQMP) (i.e., 2003) to address criteria pollutants by expeditiously implementing the approved plan.

Scope

After consideration of information and comments from the Working Group members and from Community Forums, staff recommends that the scope of CIRS include the following areas:

- Cancer risk;
- Hazard Index from non-cancer risk sources;
- Odors; and
- Enforcement.

The proposed control strategies incorporate these elements.

High Impact Areas

After examining MATES II modeling data and incorporating input from stakeholders, staff is recommending that modeled cancer risks be ranked according to mobile and stationary source contribution separately. The ranking provides a priority list to characterize source contribution and identify solutions to address cumulative impacts. MATES II models cancer risk in grid cells of 1 km x 1 km. Staff recommends that the approach for investigating potential high impact areas start with the top 100 grid cells with the highest mobile source impacts and another top 100 grid cells with the highest stationary source impacts. As a result, there will be a total of 200 grid cells analyzed, which may have some overlapping areas, but will be examined separately. Total mobile and stationary source contributions need to be examined separately because the nature of the sources and possible solutions are different. Cumulative impacts can be addressed for localized areas, depending on the nature of the sources in that situation. These top 100 grid cells, each for total mobile or stationary sources, represent the approximate top 1 percent of risks from all grid cells in the MATES II study. The top 100 grid cells should not be viewed as a cut-off point for defining high cumulative impact areas. Rather it serves as guidance to prioritize staff resources. The intent is to work through the ranking (not necessarily limited to the top 100 cells) to evaluate individual circumstances, and to develop solutions accordingly. It is not staff's intent to prohibit growth in the high impact areas identified. This prioritization should be re-examined in future ATCP updates once staff gains more experience in addressing the cumulative impact issues and when additional technical information and tools become available.

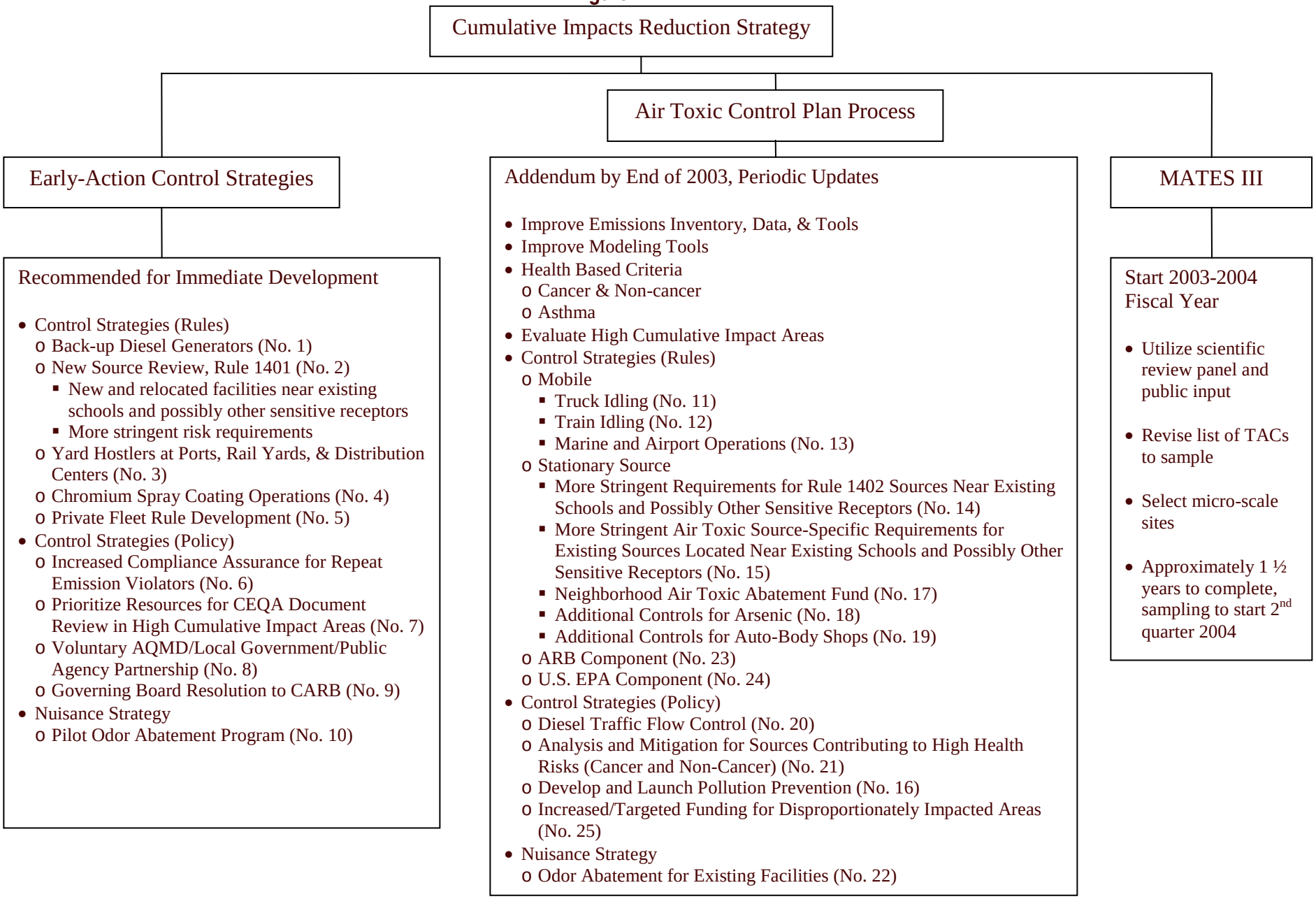
Key Elements

Addressing the cumulative impacts associated with exposure to air toxics requires a multi-faceted approach comprised of short- and long-term strategies. AQMD staff's suggested approach consists of three major components:

- a set of early action control strategies for immediate development and implementation;
- revisions to Air Toxic Control Plan (ATCP)
  - addendum to the March 2000 ATCP; and
  - periodic updates; and
- a planned update to the Multiple Air Toxics Exposure Study, or conduct MATES III.

Figure EX-1 is a graphical representation of what is proposed under each component. Early-action strategies are those for which there is sufficient information for development and that can be implemented within 2 to 3 years. The ATCP Addendum will be completed by the end of 2003 and will contain additional strategies that can be developed and implemented in 3 to 5 years. The ATCP is expected to be updated periodically following a similar schedule as the Air Quality Management Plan (AQMP) to reflect the latest technical information and analytical methodology. The third component, MATES III, is already in the planning stages and is anticipated to be completed in approximately 1 ½ years, starting 2nd Quarter 2004. For a more detailed description of the suggested strategies that have been conceptualized, the reader is referred to Section IV of this White Paper.

Figure EX-1


Cumulative Impacts Reduction Strategy
Air Toxic Control Plan Process
Early-Action Control Strategies
Addendum by End of 2003, Periodic Updates
MATES III
Recommended for Immediate Development
• Control Strategies (Rules)
o Back-up Diesel Generators (No. 1)
o New Source Review, Rule 1401 (No. 2)
▪ New and relocated facilities near existing schools and possibly other sensitive receptors
▪ More stringent risk requirements
o Yard Hostlers at Ports, Rail Yards, & Distribution Centers (No. 3)
o Chromium Spray Coating Operations (No. 4)
o Private Fleet Rule Development (No. 5)
• Control Strategies (Policy)
o Increased Compliance Assurance for Repeat Emission Violators (No. 6)
o Prioritize Resources for CEQA Document Review in High Cumulative Impact Areas (No. 7)
o Voluntary AQMD/Local Government/Public Agency Partnership (No. 8)
o Governing Board Resolution to CARB (No. 9)
• Nuisance Strategy
o Pilot Odor Abatement Program (No. 10)
• Improve Emissions Inventory, Data, & Tools
• Improve Modeling Tools
• Health Based Criteria
o Cancer & Non-cancer
o Asthma
• Evaluate High Cumulative Impact Areas
• Control Strategies (Rules)
o Mobile
▪ Truck Idling (No. 11)
▪ Train Idling (No. 12)
▪ Marine and Airport Operations (No. 13)
o Stationary Source
▪ More Stringent Requirements for Rule 1402 Sources Near Existing Schools and Possibly Other Sensitive Receptors (No. 14)
▪ More Stringent Air Toxic Source-Specific Requirements for Existing Sources Located Near Existing Schools and Possibly Other Sensitive Receptors (No. 15)
▪ Neighborhood Air Toxic Abatement Fund (No. 17)
▪ Additional Controls for Arsenic (No. 18)
▪ Additional Controls for Auto-Body Shops (No. 19)
o ARB Component (No. 23)
o U.S. EPA Component (No. 24)
• Control Strategies (Policy)
o Diesel Traffic Flow Control (No. 20)
o Analysis and Mitigation for Sources Contributing to High Health Risks (Cancer and Non-Cancer) (No. 21)
o Develop and Launch Pollution Prevention (No. 16)
o Increased/Targeted Funding for Disproportionately Impacted Areas (No. 25)
• Nuisance Strategy
o Odor Abatement for Existing Facilities (No. 22)
Start 2003-2004 Fiscal Year
• Utilize scientific review panel and public input
• Revise list of TACs to sample
• Select micro-scale sites
• Approximately 1 ½ years to complete, sampling to start 2nd quarter 2004

I. INTRODUCTION

In October 1997, the South Coast Air Quality Management District (AQMD) Governing Board adopted a series of ten Environmental Justice Initiatives, along with four Guiding Principles, to address the potential adverse health effects of air pollution, including air toxics, and set forth a strategy to help ensure that clean air benefits are accorded to all residents and communities of the South Coast Air Basin (Basin). These Initiatives have helped identify and address potential areas of the AQMD's jurisdiction where citizens may be disproportionately impacted by air pollutants. Potential adverse public health impacts from cumulative emissions exposure, particularly from air toxics, are an environmental justice (EJ) concern. In September 2002, the Governing Board approved enhancements to the EJ program for the Fiscal Years 2002-2003. Addressing concerns about cumulative emission impacts is a key objective of the EJ program enhancements. An outgrowth of these enhancements was a Governing Board directive to staff to report back on the feasibility of rulemaking to address cumulative impacts of air toxics beyond current AQMD requirements.

On January 10, 2003, staff reported to the Governing Board on the initial investigation into the development of a cumulative impacts program. Also presented at that meeting was a proposal to develop a White Paper on regulatory and policy options for addressing cumulative impacts from air pollution emissions, including a work plan that entailed creation of a working group, development of a White Paper, and a planned update to the second Multiple Air Toxics Exposure Study (MATES II). The Board directed staff to report back to the Board with a White Paper containing recommendations and schedule.

Addressing cumulative impacts is a very complex issue. There are many factors that contribute to areas of higher impact in the Basin. Land use decisions, some made decades ago, prevalence of freeways and other transportation corridors, density and types of businesses, and local meteorology are some of these factors. Mobile source emissions continue to be the predominant contributor to regional cancer risk in the Basin. Cumulative impacts are somewhat difficult to define and assess. Stakeholders in the working group had divergent viewpoints with respect to what indicators should be used to address cumulative impacts and what approaches are needed. There are data limitations, as well. AQMD has an extensive air monitoring program and has the benefit of MATES II, an extensive toxic monitoring and modeling effort. However, there are knowledge gaps where additional information on air pollution emissions and exposures would be beneficial.

The working group process, which included a facilitator, was very helpful to staff in the development of the recommended approaches. The Working Group met seven times to discuss a program to reduce cumulative impacts from air pollution. This White Paper presents staff's recommendations regarding options for assessing cumulative impacts from sources of air toxics. It includes consideration of input received from the California Air Resources Board (ARB), U.S. Environmental Protection Agency (EPA), local government representatives, industry, and environmental and community groups on the Working Group, as well as input from five Community Forums. Key policy issues addressed during the working group process include, but were not limited to, scope of the program (i.e., stationary and/or mobile sources; cancer and/or non-cancer health effects; and particulate emissions), defining high impact areas for specific actions to reduce cumulative exposures, and potential approaches to address cumulative impacts.

II. DEFINITIONS

For the purposes of developing a program to address cumulative impacts from air pollution emissions, the AQMD staff will rely upon the definition of Environmental Justice that was approved by the Governing Board in October 1997:

> *Environmental Justice means the equitable environmental policymaking and enforcement to protect the health of all persons who live or work in the AQMD, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution.*

Under the subject of Environmental Justice, the definition of cumulative impact was extensively discussed by the Working Group. A cumulative impact can be defined in many ways and it is therefore difficult to arrive at a single definition that fits all circumstances. Cumulative impacts can be regional, as well as localized or neighborhood. Estimated risks from air toxic measurement at 10 monitoring stations for residents of the Basin are ~1,400 in a million (based on a range from about 1,120 in a million to about 1,740 in a million), with some areas experiencing higher risks. Reducing emissions throughout the Basin would decrease the overall risk on a regional basis and will lower neighborhood risks by varying degrees, depending on the localized circumstances.

Definitions were discussed at several Working Group meetings. This was important to different stakeholders because the definitions would help frame the policy discussions and recommendations. The environmental and community groups were interested in ensuring that the definition of cumulative impacts would not be restrictive with respect to needing to prove harm before addressing an impact. These groups also stressed that cumulative impacts are not just related to air pollution, but include other media, such as water pollution, and ingestion.

It was important to industry representatives that the definition of cumulative impact not result in using resources where there was not a nexus demonstrated between pollution sources and health effects. For example, emissions may not result in an adverse impact if the compound is emitted in low amounts or has low toxicity. The following definition proposed by the AQMD staff, while not a consensus, attempts to recognize these view points and develop a working definition.

> *A cumulative air pollution impact is an adverse health effect, risk or nuisance from exposure to pollutants released into the air from multiple air pollution sources.*

Further refinement or variation of this definition may be needed in the future when a specific regulation or policy is formulated. Reference to “air pollution” under this working definition is intended to include not only air toxics, but criteria pollutants, such as particulates, and nuisances (e.g., odors).

III. BACKGROUND

Currently, cumulative impacts are indirectly reduced through the application of existing programs at the federal, state, and local level. The State Implementation Plan (SIP) addresses criteria pollutants and the California Health and Safety Code covers nuisances. Control of air toxics is addressed in a variety of programs as described below.

For air toxics, it is generally assumed by the scientific community that there is no safe level or threshold that can be set relative to cancer risk regardless of the source. The AQMD has very limited jurisdiction over mobile sources and therefore its rules and regulations are primarily geared toward stationary and area sources only. Historically, jurisdiction for reducing mobile source (e.g., motor vehicles, diesel trucks, trains, ships, and aircraft) emissions, and therefore risk contribution, primarily falls to both state and federal levels of government, whereas localized reduction of stationary sources falls to the local level. The regulatory structure for addressing new or modified stationary sources is to require best available control technology (BACT) for air toxics, or T-BACT. Relative to existing sources, risk reductions are sought via rules and regulations, considering technical feasibility and cost.

AQMD's current regulatory program has five principle programs for addressing air toxics.

- Rule 1401 – New Source Review of Toxic Air Contaminants is equipment-specific and limits incremental increases in public health risk from new projects and modifications to existing equipment/processes;
- Rule 1402 – Control of Toxic Air Contaminants from Existing Sources is facility-specific and requires reduction of risk and public notification under certain conditions;
- California Environment Quality Act (CEQA) is project-specific and requires public disclosure and mitigation measures, as necessary, to limit risk;
- Multiple Air Toxics Exposure Study (MATES) is regional and utilizes actual monitored and modeling data to estimate emissions and risk in the Basin; and
- Air Toxics Control Plan is regional and utilizes MATES data in developing recommendations for source-specific and air toxic rules, as well as non-regulatory programs.

The AQMD, together with the state and federal agencies, works to control air pollution emissions from several sources. As mentioned earlier the AQMD has jurisdiction over stationary and area source emissions, as well as mobile source fleets. Over the years several programs and tools have been developed to regulate these sources. These programs and tools and the roles of the state and federal agencies are described in Appendix A.

IV. CUMULATIVE IMPACTS REDUCTION STRATEGY (CIRS)

At the start of the process, to stimulate discussions, staff introduced four design principles that were factored into the working group process: no redlining (e.g., defining an acceptable/unacceptable geographical area based on level of risk); not interfering with local land use decisions, but making more comprehensive air quality information available to decision makers; reasonable decision-making time frame for CEQA analysis and permits; consider resource considerations and regulatory certainty.

Based on the design criteria and early discussions of the working group, staff developed a list of initial options for addressing cumulative impacts for working group comments. Industry and environmental/community representatives provided their own list of design criteria and options. Staff then evaluated the options in an attempt to examine feasibility and to identify where efforts should be prioritized. Staff examined several information sources, most notably, the MATES II, year 2000 census data, and health care data in an attempt to identify potentially high cumulative impact areas.

In addition to the sections on the control strategies, this report also provides information on MATES II, census data, and the interests of key stakeholder groups. Staff carefully considered the information, as well as viewpoints expressed by stakeholders, and has the following recommendations.

Approach

The overall approach in addressing cumulative impacts includes several key features:

- Build on existing State Implementation Plan (SIP) Programs that address criteria pollutants;
- Start with existing known information (i.e., MATES II) to address cumulative impacts of air toxics;
- Identify high cumulative impact areas and develop effective solutions accordingly; and
- Continue to develop/refine technical database and tools.

These concepts are incorporated in the individual strategies described below.

Scope

After consideration of information and comments from the Working Group members and from Community Forums, staff recommends that the scope of the CIRS include the following areas:

- Cancer risk;
- Hazard Index from non-cancer risk sources;
- Odors; and
- Enforcement.

The control strategies incorporate these components.

Key Elements

Addressing the cumulative impacts associated with exposure to air toxics requires a multi-faceted approach including short- and long-term strategies. AQMD staff's suggested approach consists of three major components:

- a set of early-action control strategies for immediate development and implementation;
- Air Toxic Control Plan process; and
- Planned update to the Multiple Air Toxics Exposure Study, or MATES III.

Analysis for Identification of High Impact Areas

A significant portion of the Working Group discussions focused on potential criteria for determining high impact areas. Basin-wide regional risk and census data maps were developed by staff as part of their analysis and in support of the Working Group discussions.

During 1998 and 1999, the AQMD conducted a second MATES program to further understand the current air toxics setting in the Basin. The results of MATES II were released in March 2000. MATES II examined the potential cancer risk from over 30 known toxic air contaminants including diesel particulates. MATES II data was key in this analysis, as it was an important part of the characterization of cumulative impacts throughout the Basin. It also was an indicator of risk contributions and aided in identifying control strategies and further steps needed, such as improved data, tools, and modeling.

MATES II Data

The results of MATES II indicate that the overall average Basin cancer risk is approximately 1,400-in-one million when diesel emissions are considered; the Basin risk is around 400- to 600-in-one million excluding diesel emissions. Figure 1 contains a map of the Basin showing the range of cancer risk contributed by all sources, including diesel emissions. As seen in Figure 1, the MATES II results also indicate that higher risk levels are seen in the more industrialized areas of the Basin (the south-central portion of Los Angeles County, not the neighborhood of south-central Los Angeles; at freeway interchanges; areas near airports; and industrial areas). However, as seen in Figure 2, mobile sources are the most significant contributors to risk levels in the Basin, with some individual grid cells as high as 5,700 in a million. The stationary source emissions of TACs contribution to the overall estimated risk levels are presented in Figure 3, with some individual grid cells as high as 660 in a million. Stationary source TACs tend to be around the same level year-round. However, mobile source TACs tend to be higher during the fall and winter months. Due to limitations in modeling techniques, stationary source risks tend to be underestimated at the localized level.

Figure 1
Range of Risk From All Sources In the South Coast Air Basin,
Including All Mobile and Stationary Sources

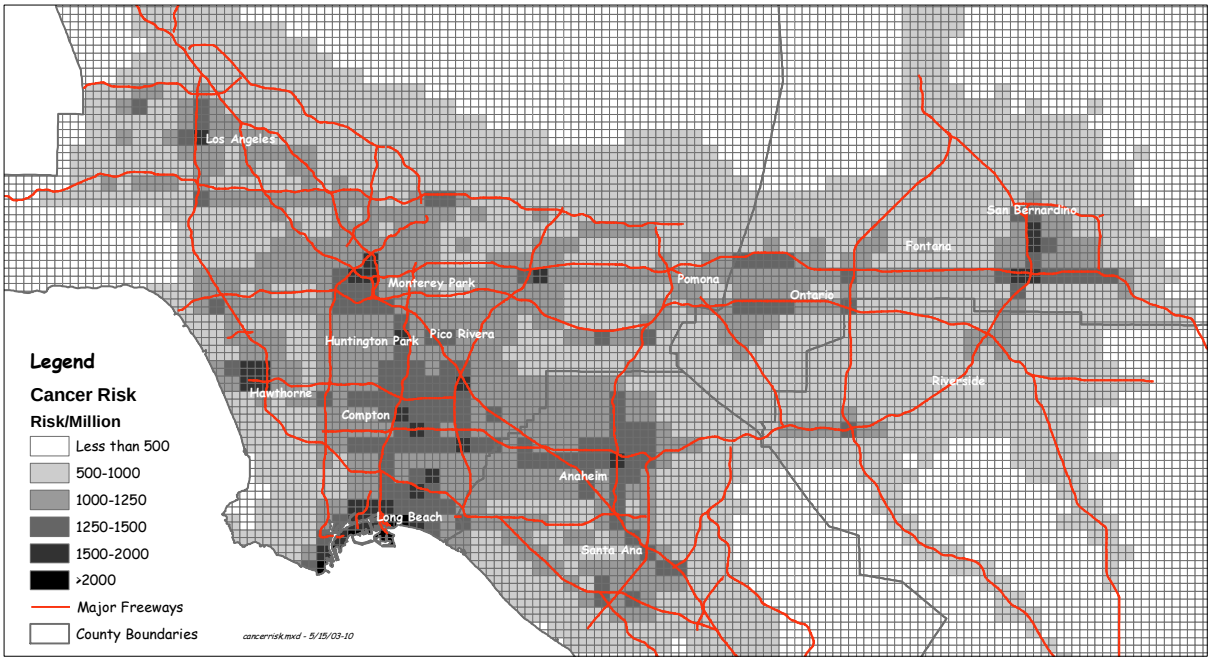


Figure 2
Range of Risk for Mobile Sources Only in the South Coast Air Basin, Including Diesel Particulate

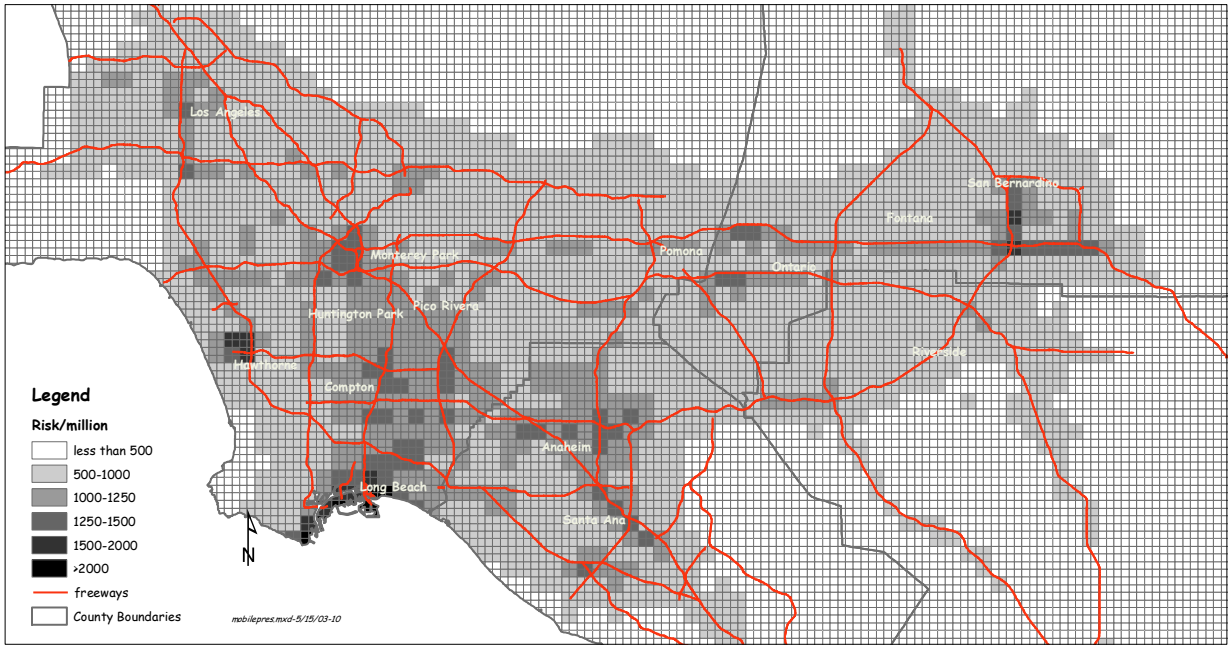
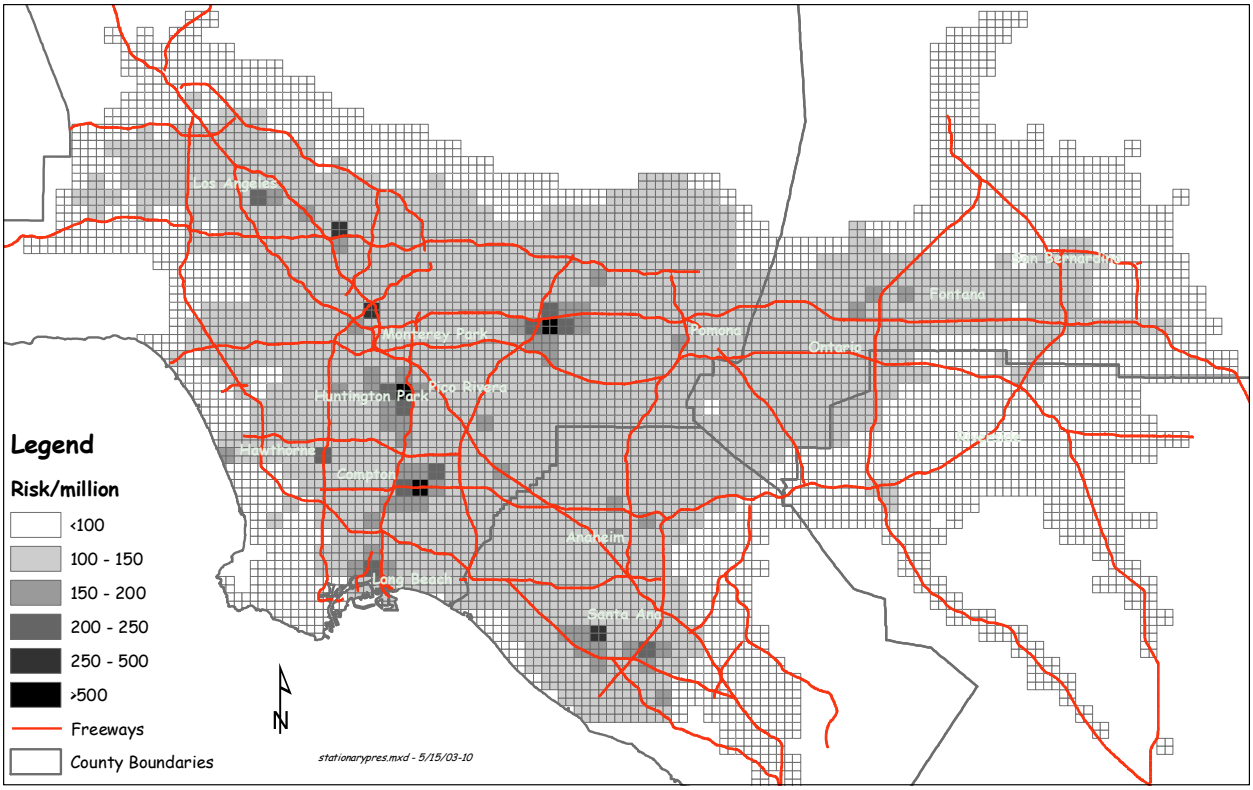


Figure 3
Range of Risk from Stationary Sources Only in the South Coast Air Basin



2000 Census Data

The Governing Board adopted definition of Environmental Justice states that the public health of all persons should be protected, regardless of race, socioeconomic status, etc. However, environmental and community members on the Working Group asked staff to evaluate poverty and ethnicity information that would potentially be used to define high cumulative impact areas.

Consistent with addressing Environmental Justice under the Carl Moyer program, staff examined those census tracts with greater than 10 percent poverty. Utilizing tract level data from the 2000 Census, Figure 4 shows the range of poverty for all demographics for the entire Basin. Staff also examined which areas, have greater than 50 percent non-white population, also utilizing 2000 Census data (see Figure 5). As can be seen from Figures 4 and 5, there is a correlation between areas of high poverty and those of large non-white populations. These areas also correlate strongly with modeled cancer risks. Therefore, prioritizing efforts in areas of high risk would also benefit those areas highlighted by the environmental and community members.

Figure 4
Range of Poverty Within the South Coast Air Basin by Census Tract

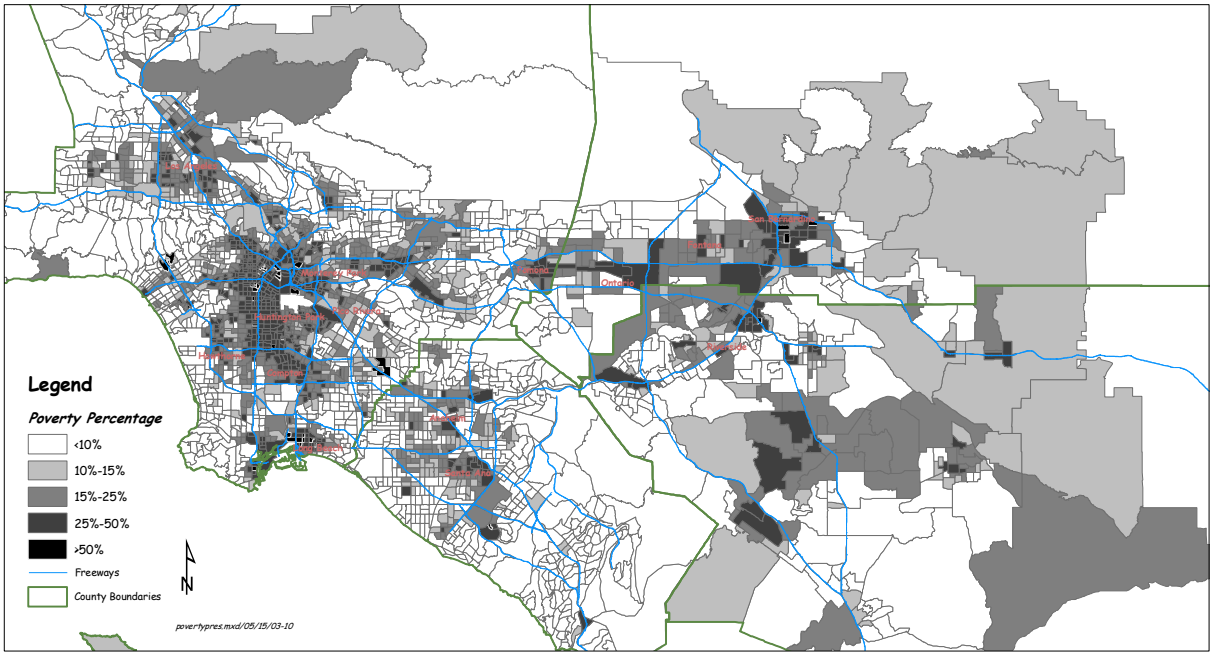
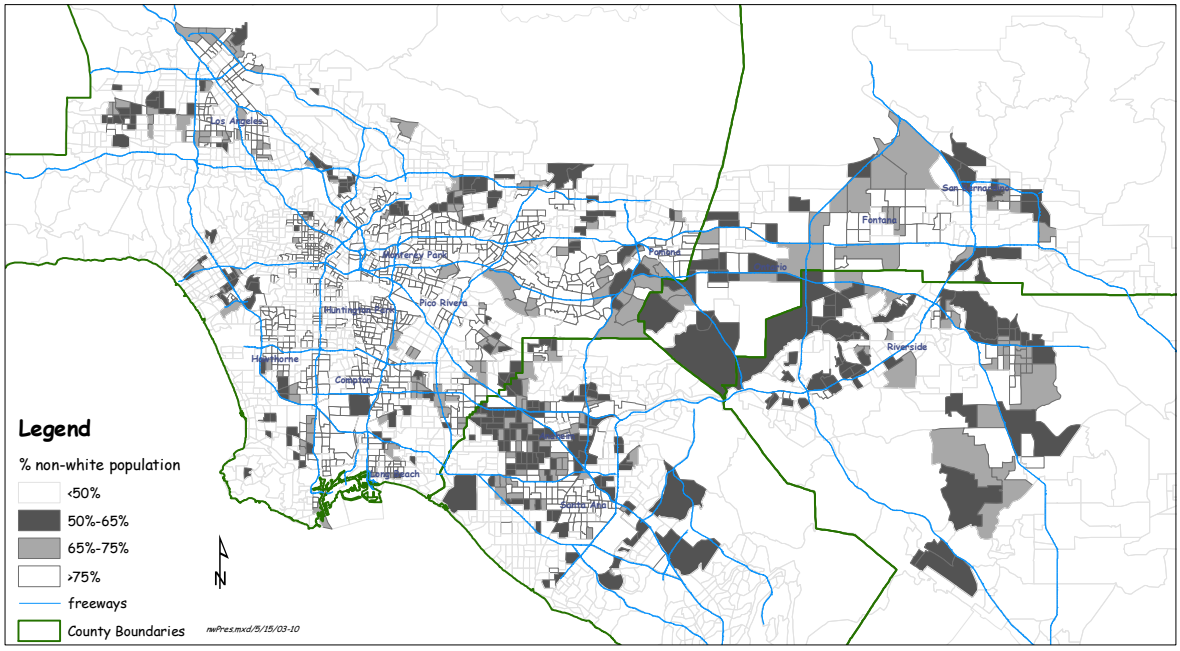


Figure 5
Range of Non-White Populations within the South Coast Air Basin by Census Tract



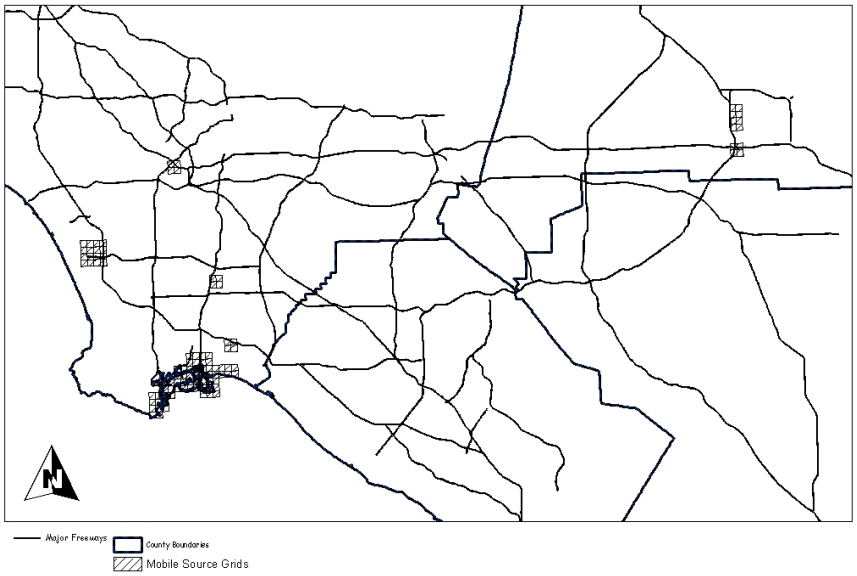
Health Care Data

A request was made at a working group meeting to use health care data to identify areas of high cumulative impacts by using information on rates of air pollution related illnesses, such as asthma. Lack of access to health care could exacerbate cumulative impacts of air pollution. There is not a conclusive source of information for local areas to derive these health-based criteria. Where data might be available, it would be resource intensive to obtain and analyze, as well as only being available for selected areas of the Basin. Therefore, this was determined not to be a practical source of information for prioritizing efforts.

Conclusion

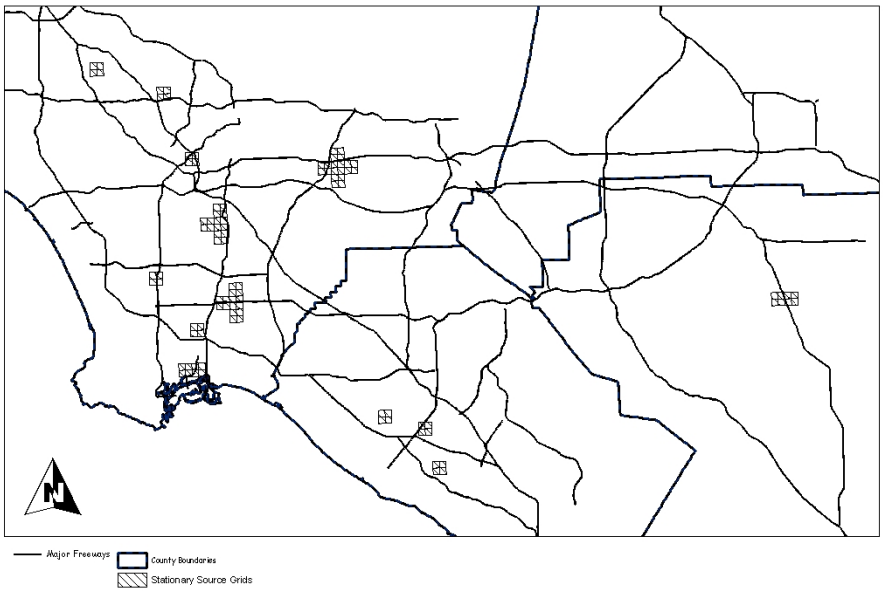
After consideration of the aforementioned data and information, staff recommends that the approach for investigating potential high impact areas start with the top 100 grid cells with the highest mobile source impacts and another top 100 grid cells with the highest stationary source impacts. As a result, there will be a total of 200 grid cells analyzed, which may have some overlapping areas, but will be examined separately. Staff was also asked to look at the top 100 grid cells due to all emission sources, which should be the same as the top cells for mobile sources because greater than 90 percent of the risks are from those sources. Figures 6, 7, and 8 contain preliminary maps using the MATES II data. The location of the top 100 mobile source grid cells are shown on the map in Figure 6, whereas the location of the top 100 stationary source grid cells are shown in Figure 7. Figure 8 shows which grid cells from Figures 7 and 8 overlap.

Figure 6
Top 100 Grid Cells for Mobile Sources Only



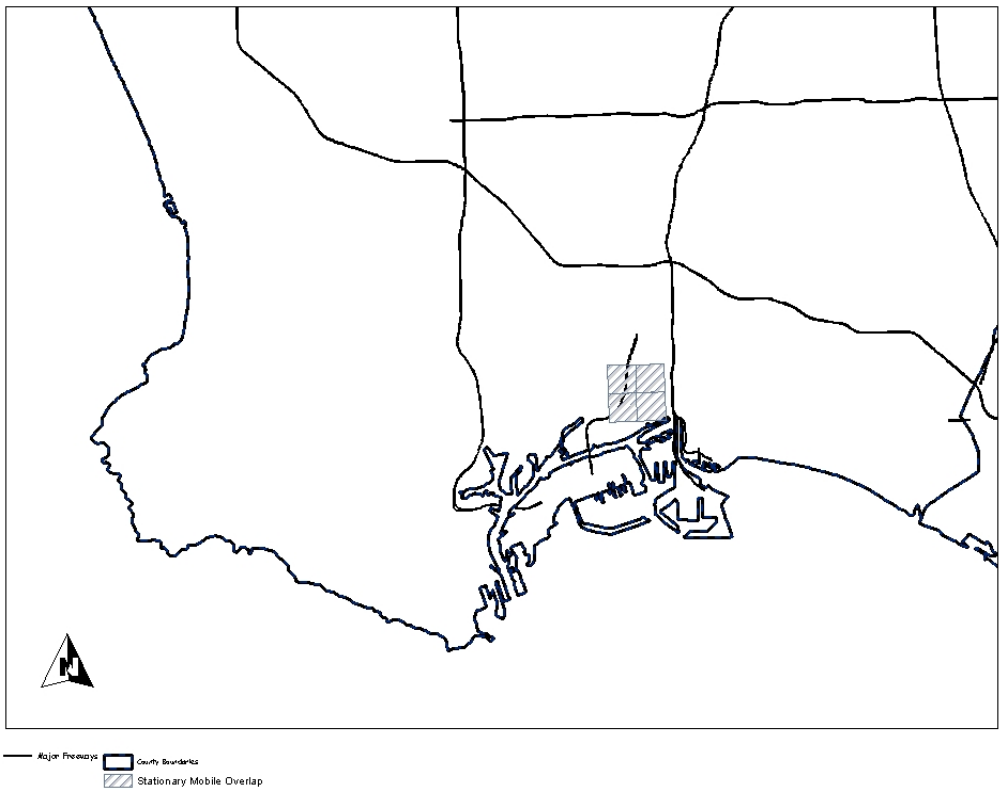
Note: The range of risks due to the mobile source contribution are 1,400 to 5,700 in a million.

Figure 7
Top 100 Grid Cells for Stationary Sources Only



Note: The range of risks due to the stationary source contribution are 160 to 660 in a million.

Figure 8
Overlap of the Top 100 Grid Cells for Both Mobile and Stationary Sources



Mobile and stationary source contributions need to be examined separately because the nature of the sources and possible solutions are different. Furthermore, the MATES II modeling technique (i.e., regional modeling rather than point source modeling) tends to underestimate the potential localized impacts. By evaluating the top mobile and stationary grid cells, cumulative impacts can be addressed for localized areas, depending on the nature of the sources in that situation. These top 100 grid cells represent the approximate top 1 percent of risks from all grid cells in the MATES II study. The top 100 grid cells should not be viewed as a cut-off point for defining high cumulative impact areas. Rather it serves as guidance to prioritize staff resources. Staff will not propose a prohibition of growth in these areas. The intent is to work through the ranking (not limited to the top 100 cells) to evaluate individual circumstances, and to develop solutions accordingly. This prioritization should be re-examined in the future ATCP updates once staff gains more experience in addressing the cumulative impact issues and when additional technical information and tools become available.

As seen in Table 1, when examining the top 100 grid cells, based on cancer risk, for mobile sources only, including diesel particulate, diesel emissions contribute the majority of risk in those cells (more than 90% in most grid cells). Relative to stationary sources, the risk within the top 100 grid cells is mostly contributed (e.g., more than 80%) by perchloroethylene, carbon tetrachloride, ethylene oxide, arsenic, chromium, cadmium, and nickel. Many of these pollutants have or will be controlled through implementation of rules or rule amendments over the last three years. Perchloroethylene and carbon tretrachloride are used as degreasers, ethylene oxide as a sterilizer, arsenic in metallurgical processes, and chromium, cadmium, and nickel in plating operations.

Table 1
Key Mobile and Stationary Source Risk Contributors
(MATES II Modeled Risk Levels)

Category	Key TACs	Range of Cancer Risk
Mobile Sources, Including Diesel Particulate Only	diesel particulate	1,400 – 5,700 in a million
Stationary Sources Only	perchloroethylene (Rules 1122, 1421, &1425) carbon tetrachloride (Rule 1122) ethylene oxide (Rule 1405) arsenic (Rule 1407) chromium (Rule 1469) cadmium (Rule 1426) nickel (Rule 1426)	160 – 660 in a million

CONTROL STRATEGIES FOR REDUCING CUMULATIVE IMPACTS FROM AIR POLLUTION

Early-Action Control Strategies

The following early action control strategies are those that staff recommends should be started immediately. Not all strategies are expected to result in a rulemaking as they may not be necessary after further evaluation or solutions may not be technically or economically feasible at this time. Any strategy that is developed into a rule will go through the full public review process, including CEQA and socioeconomic analysis and public comments, and will be developed for Governing Board consideration. Some of the strategies may already be initiated as part of AQMD's EJ program. Each of these strategies are anticipated to be developed and implemented within 2 to 3 years.

Control Strategies (Rules)

1. Approach: **Air Toxic Control for Back-Up Generators**

   Description: A key finding of MATES II was the significant contribution of cancer risk throughout the Basin by diesel sources. The current AQMD permitting rules exempt emergency engines from Rule 1401 – New Source Review of Toxic Air Contaminants. A number of these sources, such as back-up generators, are located in and around schools, as well as other sensitive receptors. This strategy would seek to reduce air toxic emissions, including diesel particulates, from back-up generators.

   Mechanism: Under this measure, staff would develop requirements to reduce emissions from back-up generators, taking into consideration state Air Toxics Control Measure (ATCM) requirements assessment for diesel particulates and Office of Environmental Health Hazard Assessment (OEHHA) updated risk procedures. Such requirements may include greater limitation on hours for maintenance

operation, designation of when maintenance may be conducted when a generator is located near a sensitive receptor, or requiring the addition of diesel particulate filters. Such requirements may be applied to both existing back-up generators and new generators. Staff has been asked to evaluate whether special consideration is needed for engines to be used under emergency situations for essential public services, such as flood control or earthquakes.

2. Approach: **More Stringent Requirements for New Sources Located Near Existing Schools and Possibly Other Sensitive Receptors**

Description: This control strategy would seek to establish requirements for new and relocated facilities near schools and possibly other sensitive receptors.

Mechanism: Staff would seek to amend Rule 1401 to establish more stringent risk limits for new and relocated facilities emitting air toxics located near existing schools and possibly other sensitive receptors for their risk levels at these receptors. Sensitive receptors include schools (kindergarten through grade 12), licensed daycare centers, hospitals, and convalescent homes. The risk assessment procedures in Rule 1401 would be used to assess the maximum individual cancer risk at the school. These requirements may include more stringent risk limits for new and relocated facilities. If the increase in risk triggers Rule 1402 applicability, this strategy may also seek to expedite Rule 1402 risk reduction. For example, a new facility being located within a specified distance from a school (e.g., within 100 meters as specified in AQMD Rule 1469) may be required to meet a risk limitation of less than 1 in a million without using BACT or less than 10 in a million using BACT for toxics, or T-BACT. It is the staff's intent to use 100 meters as the distance threshold. However, the distance threshold needs to be further discussed through the rulemaking process. In addition, a new facility being located within a certain distance of a school may also be required to reduce a facility-wide cancer risk below the action level prior to the start of operation of the new equipment. The amendment to Rule 1401 associated with this strategy would be for existing schools or sensitive receptors only and would proceed through a two-step hearing process to first identify key policy issues and seek Governing Board direction prior to the rule adoption hearing.

Since this strategy has raised a number of general questions, a summary table (Table 2) has been provided to highlight key elements.

Table 2
Summary of Key Elements of Strategy No. 2

Element	Summary
Applies to:	new and relocated facilities
Variables	• distance • impacts at specified receptors
Sensitive Receptor	• schools (kindergarten through grade 12) • licensed daycare centers • hospitals • convalescent homes
Proposed Strategy	• more stringent risk levels • or expedited Rule 1402 risk reduction, if triggered.

3. Approach: **Yard Hostlers at Ports, Rail Yards, and Distribution Centers**

Description: One source of emissions contributing to a cumulative impact is ground support operations associated with cargo sorting and transport within ports, rail yards, and distribution centers. These sources, known as yard hostlers, can cumulatively create potential increased exposures to the surrounding area due to their emissions. This strategy would seek to reduce emissions from yard hostlers at ports, rail yards, and distribution centers used in conjunction with these operations.

Mechanism: Staff would develop new requirements to control emissions from yard hostlers used at ports, rail yards, and distribution centers (e.g., warehouses). Control strategies could include lower emitting equipment either by add-on control technologies or alternative fuels.

4. Approach: **Chromium Spray Coating Operations**

Description: Emissions of hexavalent chromium have historically been a contributor to the ambient risk contributed by stationary sources throughout much of the Basin. Since 1990, a number of measures have been taken to reduce emissions of chromium from various sources, including metal finishing and coating applications. In 2000, the results of MATES II identified chromium as one of the most significant stationary source toxic air contaminants. Rule 1469 has been strengthened to significantly reduce chromium emissions from metal finishing operations. However, other operations, such as chromium-based spray coating operations have also been identified as potentially contributing to cancer risk. This strategy would investigate and potentially seek to reduce emissions of chromium from these operations.

Mechanism: Staff would conduct an investigation into the remaining risk associated with spray operations using chromium-based coatings, including a technical analysis as to alternative coating materials, or the effectiveness of add-on control equipment. An issue was raised to have staff evaluate the potential toxic characterization of chrome from paint spray operations. In addition, compliance records for metal coating operations will also be examined to determine if non-compliant sources, if any, are contributing significantly to the risk. Consideration will be given to

sources already in compliance with Rule 1402, for example. Staff has been asked to consider sources covered under other rules, such as the aerospace NESHAP and Rule 1124. The result of this effort may result in the adoption of a new or amended rule to control emissions of chromium from spray coating applications.

5. Approach: **Private Fleet Rule Development**

Description: Findings from the MATES II program showed that the largest portion of the ambient cancer risk is contributed by diesel sources throughout the Basin. As a result, the AQMD Governing Board adopted a series of fleet rules (e.g., 1190 series rules) to reduce emissions of diesel particulates from mobile sources within the agency's jurisdiction. This strategy would develop additional new rules for further emission reductions from private fleets.

Mechanism: This strategy would lead to the development of new rules for additional emission reductions from private fleets, such as fuel providers and cargo/shipment carriers. This strategy also leads to the development of the necessary infrastructure to maintain the fleets, which is an important element for sustainability.

Control Strategies (Policy)

6. Approach: **Increased Compliance Assurance for Repeat Emission Violations**

Description: At public outreach meetings, requests are often made for an increased field compliance presence, particularly in those areas consisting of a high concentration of facilities. This stems from the concerns that non-compliance or accidental release would contribute to cumulative impacts. This strategy is to develop and implement an enhanced compliance assurance program for stationary sources which receive multiple notices of violation. Such action will likely provide the greater benefit in high cumulative impact areas.

Mechanism: As an early action measure, this strategy involves the development of a program that would guarantee minimum inspections and minimum penalties for repeat emission violations to assure continuous and consistent compliance. AQMD staff would investigate data and compliance records so as to focus resources to address the more localized issues. In determining repeat emission violations, AQMD staff will take into consideration industry-specific operations and the amount of excess emissions. Thus, facilities with multiple emission-related violations would be inspected at a greater frequency. Rules will be enforced consistently, regardless of facility location. The enhancement would involve more strategic deployment of AQMD field inspections and increased deterrence for repeat emission violators. This strategy will be implemented after approval of the ATCP by the AQMD Governing Board.

7. Approach: **Prioritize Resources for CEQA Document Review in High Cumulative Impact Areas**

Description: Projects with potentially significant adverse environmental impacts require an evaluation under CEQA. AQMD regularly receives CEQA documents prepared by other lead agencies for comments. Air quality is one of the CEQA topics. Relative to air quality impacts, a thorough evaluation of project related emissions, including both mobile and stationary source emissions is needed, particularly for projects located in high cumulative impact areas. This strategy would ensure that CEQA

documents prepared in conjunction with these projects are evaluated by AQMD for potentially significant impacts and that adequate measures are taken to mitigate the impacts when required.

Mechanism: AQMD staff will prioritize resources to ensure adequate intergovernmental review of CEQA documents to ensure the accuracy and the adequacy of air quality impact analyses and the associated mitigation measures, if deemed necessary.

8. Approach: **Voluntary AQMD/Local Government/Public Agency Partnership**

Description: One of the key resources to address potential cumulative impacts associated with emissions from new, modified, and relocated facilities is local government staff such as planners, as they have the ability to control where and how facilities are located in their community. This strategy is to work with local governments and planners through a partnership to provide the necessary information and tools to minimize cumulative impacts from future potentially air toxic emitting facilities and projects in their area.

Mechanism: This strategy would be implemented through an education and outreach program to advise local governments outside the current CEQA analysis process. AQMD would partner with local governments and other public agencies. This effort is different than AQMD's role in review and comment on CEQA projects because it is a more proactive, educational effort, not related to a specific project. In conjunction with the Model Air Quality Element (an EJ enhancement), AQMD staff will offer to make presentations and to consult with City Councils and Planning Commissions regarding land use decisions, and provide them with tools to identify incompatible land uses and to identify and address projects that may have a direct or indirect affect on the health of the surrounding community due to their operations. An air quality/environmental checklist may be developed for use by any local government to aid them in their decisions.

9. Approach: **Governing Board Resolution to CARB**

Description: Mobile sources, which are regulated under CARB, are significant contributors to risk levels in the Basin (see section on MATES II). Consequently, additional controls from this sector would greatly enhance the reduction of cumulative impacts.

Mechanism: This Early Action strategy would entail a Governing Board resolution to CARB urging their partnership and timely control of mobile source emissions. AQMD wants to work with CARB to be full partners in resolving cumulative impacts in this Basin, especially where mobile sources are the key contributors to cumulative impacts. Staff recommends that the resolution include a request that CARB Board members participate in a summit with a delegation of AQMD Board members to discuss this partnership and efforts to assist in reducing cumulative impacts.

Nuisance Strategy

10. Approach: **Pilot Odor Abatement Program**

Description: Nuisance complaints, including odors, have continuously been raised by the public at outreach meetings, such as the AQMD's Town Hall and Environmental Justice (EJ) meetings, as well as Community Forums for addressing cumulative impacts. Odor complaints are a localized issue and can trigger adverse health impacts due

to the physical sensitivity of individuals located in and around the area of incidence. The presence (or absence) of odors does not always relate directly to toxics exposure. Currently, odor issues are addressed after occurrence of the incident through public nuisance complaints (i.e., AQMD Rule 402). This strategy would seek to develop proactive measures to prevent exposure to odors.

Mechanism: To address this issue staff would develop a pilot rule for one or two industries. The pilot rule would set the foundation for a process to determine and implement control requirements for odors from new sources. The selection of industries for this pilot program would be based on the historical nuisance compliant records, recent compliance actions, and input from a working group. The control technologies could include best management practices and would examine technologies used in the past resolution of Orders of Abatement or Notices of Violations (NOV).

Appendix C shows the records of the most frequent confirmed odor complaints from 1988 to 2003 along with the corresponding NOVs. These complaints and NOVs are summarized and organized by standard industrial classification (SIC) codes. The industrial classifications receiving the highest number of odor complaints include: Petroleum Refining, Refuse Systems, and Sewage Systems. The next steps needed to develop a control strategy for these sources of odors would be to analyze individual complaints received regarding facilities in these categories. Once a pattern of complaints is found (i.e., type of odor, area, time of day, weather conditions) it can then be determined if a control strategy can be used to mitigate odors in the ambient air. To accomplish this task, staff would rely on a scientific review group for developing standards, similar to that used for establishing BACT (the same group could be used) for sources of criteria air contaminants.

AIR TOXICS CONTROL PLAN (ATCP) PROCESS

Identifying and resolving cumulative impacts will be a continuous and iterative process since no single solution can adequately address the issues. Therefore, staff is proposing to integrate a cumulative impact component into the ATCP process, which will be updated periodically to incorporate the latest technical information as well as strategies to address air toxic issues (e.g., regional and localized) in the Basin. The ATCP was approved by the Governing Board in March 2000. It was designed to reduce air toxic exposure in the Basin and was envisioned to be updated following the SIP revision process.

Addendum to the Air Toxics Control Plan

An Addendum to the ATCP will be completed after the 2003 update to the Air Quality Management Plan (AQMP). It will include improved emission data and a partial inventory update using the AQMP, as well as data from the implementation of control strategies contained within the March 2000 ATCP to revise current and projected air toxic levels (see Appendix B for ATCP implementation progress). Staff anticipates that the air toxics plan update will be presented to the Governing Board for its approval by the end of 2003. Although MATES III emissions monitoring will not be completed by this time, the inventory and assessment of changes in toxic air pollution levels can proceed for the air toxics plan addendum. Future updates to the ATCP will include MATES III data.

The addendum will utilize information contained in the enhanced Toxic Emissions Inventory, described as follows. The procedure used will be similar to that used in MATES II and the March 2000 ATCP. The base calendar year used for the inventory will be 2000 with future years extending from 2010 to approximately 2020.

The inventory data used will be as follows: on-road sources will use EMFAC 2002 and CARB's most recent specification profiles; point sources not in the AB 2588 program will use calendar year 2000 Annual Emissions Report (AER) data; sources within the AB 2588 program will incorporate any changes reported up to the end of 2000; metal plating facilities, gas stations, and dry cleaners will use the most recent inventory information available; and off road sources will use the data in the 2003 AQMP for calendar years 2000, 2010, and 2020. Once the 2000 inventory is complete, appropriate emission reductions for each category will be determined and a future inventory will be created.

The ATCP Addendum will consider additional health based indicators in the development of control strategies. Consistent with MATES II, the March 2000 air toxics plan primarily focused on cancer-based risks. The air toxics plan Addendum will also consider non-cancer health risks. In addition, it will also examine asthma as a health-based indicator for potential control strategy development to the extent feasible.

The Addendum will have both mobile and stationary control strategies based on technically and economically feasible approaches. Relative to mobile strategies, the efforts will focus on the risks associated with diesel particulate emissions. Control strategies to be developed would include truck and train idling restrictions, and diesel traffic flow management. Staff will also be evaluating other control strategies. This effort will benefit mobile source risk reduction because it will use the CARB Diesel Reduction Plan (October 2000) as a baseline and seek additional reductions beyond what is called for in the state plan.

The ATCP update will include a systematic review of existing toxic rules to determine if additional reductions are technically and economically feasible for facilities located near schools and possibly other sensitive receptors. These efforts may include the addition of sensitive receptor requirements for existing sources through amendments to existing rules and consideration during future rule development.

Other potential control strategies include pollution prevention (such as technical assistance for all facilities and a focus on facilities in higher cumulative impact areas that are close to schools), and funding for localized risk reduction projects, through an abatement fund or other mechanisms.

Analysis of MATES II stationary source cancer risk indicates that perchloroethylene (a.k.a., "perc" or tetrachloroethylene), chromium, arsenic, and carbon tetrachloride were key contributors to cancer risk. Several of these TACs are or will be reduced from implementation of recently adopted and amended rules. Spray coatings containing chromium will be evaluated for further reduction. Arsenic will also be evaluated. Due to odor complaints and the large use of various TACs in paint formulations, staff proposes a two-step process for evaluating odors and potential control approaches for auto-body shops. Additional fleet rules will also be developed.

Conceptually, an outline of Addendum to the March 2000 Air Toxics Control Plan would include the following topics:

Progress in Implementing 2000 Toxics Plan
- AQMD
- State
- Federal
- Previous projections
- Revised projections

Additional Control Strategies
- Introduction, including design criteria used in first plan and any updates
- Early action measures
- Stationary source measures
- Mobile source measures

Implementation
- Time frame
- Partnerships with other agencies and stakeholders
- Environmental and socioeconomic implications
- Outreach
- Monitoring
- Future enhancement

It should be noted that MATES II and the March 2000 ATCP focused primarily on cancer risks. This update will include incremental efforts to reduce cancer risk, since most of these are on-going, long term efforts. The update will also identify high cumulative impact areas for focusing efforts relative to the control strategies.

The following control strategies, which are in addition to the Early Action Control Strategies, are staff's recommendation for further consideration and development. Development of some strategies will begin right away, others may take longer to develop. Not all strategies are expected to result in a rulemaking, as they may not be necessary or feasible upon further evaluation. For example, there were strategies identified in the March 2000 ATCP that did not result in rulemaking and were not pursued after further technical evaluation (i.e., hospital ethylene oxide sterilizers and rubber manufacturing). Any strategy that is developed into a rule will go through the full public review process, including CEQA and socioeconomic analysis, and public comments, and will be developed for Governing Board consideration. Some of the strategies may already be initiated in conjunction with the AQMD's EJ program. Each of these strategies are anticipated to be developed and fully implemented within 3 to 5 years.

Proposed Control Strategies for Addendum to the Air Toxics Control Plan

11. Approach: **Truck Idling**
Description: During many public outreach meetings, staff has heard numerous concerns about the diesel truck traffic associated with the moving of cargo to and from ports, rail yards, and distribution centers. In addition to the traffic from moving cargo, the idling of trucks waiting for loading and unloading contributes to increased ground level emissions that move into nearby areas and contribute to health and nuisance complaints. This strategy will seek to develop requirements to reduce emissions

from diesel truck idling. This control measure was identified in the March 2000 ATCP.

Mechanism: Under this strategy, staff would develop a new rule to control diesel truck idling to the extent feasible, taking into consideration operational needs for the movement of cargo and infrastructure for electrification as necessary.

12. Approach: **Train Idling**

Description: As with truck idling, staff has heard numerous complaints related to rail traffic. This traffic is associated with the moving of cargo to and from ports and rail yards. Particular focus has been on idling locomotives waiting to move cargo. This strategy would likewise seek to develop requirements to reduce emissions from train engine idling.

Mechanism: Under this strategy, staff would develop a new rule to control train idling to the extent feasible, taking into consideration operational needs for the movement of cargo and infrastructure needed to support locomotives.

13. Approach: **Marine and Airport Operations**

Description: Early-Action Strategy No. 3 addresses yard hostlers at ports, rail yards and distribution centers. This strategy would seek to address emissions from marine and airport related operations.

Mechanism: Staff would examine emission reduction options for marine and airport related operations. Staff would first conduct feasibility studies, including AQMD legal authority, control technologies, and cost effectiveness prior to developing specific regulatory programs.

14. Approach: **More Stringent Requirements for Rule 1402 Sources Near Existing Schools and Possibly Other Sensitive Receptors**

Description: As stated under early action measure No. 2, health risks associated with facilities located near existing schools and possibly other sensitive receptors are of concern. Whereas strategy No. 2 would address new and relocated equipment, and new facilities, this strategy would address existing facilities located near (e.g., within 100 meters) schools and possibly other sensitive receptors.

Mechanism: Staff would seek to amend Rule 1402 to add additional requirements for risk levels for facilities located near schools, and possibly other sensitive receptors. Sensitive receptors include schools (kindergarten through grade 12), licensed daycare centers, hospitals, and convalescent homes. The risk assessment procedures in Rule 1401 would be used to assess the maximum individual cancer risk at the school. Such requirement may include lowering the action risk level below the current 25 in a million or expediting the timeframe allowed to implement risk reduction. The amendment to Rule 1402 associated with this strategy would address schools or sensitive receptors only and would proceed through a two-step hearing process to first identify key policy issues and seek Governing Board direction prior to the rule adoption hearing. Staff will seek funding to assist facilities with cost of risk reduction or relocation. Staff's intent is that this would apply to existing facilities and existing sensitive receptors, not for a new sensitive receptor that moves near facilities. Strategy No. 8, the Voluntary AQMD/Local

Government/Public Agency Partnership, will be used to help better inform land use decisions.

Since this strategy has raised a number of general questions, a summary table (Table 3) has been provided to highlight key elements.

Table 3
Summary of Key Elements of Strategy No. 14

Element	Summary
Applies to:	• existing facilities subject to Rule 1402
Variables	• distance • impacts at specified receptors
Sensitive Receptor	• schools (kindergarten through grade 12) • licensed daycare centers • hospitals • convalescent homes
Proposed Strategy	• more stringent risk reduction action levels, or • expedited compliance schedule for risk reductions

15. Approach: **More Stringent Air Toxic Source-Specific Requirements for Sources Near Existing Schools and Possibly Other Sensitive Receptors**

Description: Early action strategy No. 2 addresses facilities located near schools and possibly other sensitive receptors through an amendment to Rule 1401. Strategy No. 14 would address existing facilities located near existing schools and possibly other sensitive receptors through an amendment to Rule 1402. This strategy would seek to amend existing toxic source-specific rules, or for consideration during development of future new toxic rules, to evaluate more stringent requirements and distance and receptor criteria.

Mechanism: Staff would investigate the feasibility of amending existing toxic source-specific rules that currently contain requirements for industries or pieces of equipment to include requirements based on distance and receptor impacts, similar to that contained in Rule 1469-Hexavalent Chromium Emissions From Chrome Plating and Chromic Acid Anodizing Operations. Consideration would also be given during future new rule development. Each source category would be evaluated individually to determine feasible and appropriate proposals.

16. Approach: **Develop and Launch Pollution Prevention Initiatives**

Description: Staff continues to identify and implement pollution prevention measures when developing regulatory and non-regulatory programs. Under this strategy, staff would seek to develop a pilot pollution prevention program that could be initiated in areas of high cumulative impact.

Mechanism: The pilot pollution prevention program would initially be focused on sources contributing to high cumulative risk and would start by concentrating on facilities located near schools. AQMD staff would provide a consultation and make

recommendations to facilities as to how they may improve operations, provide information on low-cost alternatives to lower emissions, or outline steps that can be taken to prevent nuisance complaints. According to the success of this program, it may be expanded to other sensitive receptors. Staff also recognizes that there have been concerns raised by members of the Cal EPA Environmental Justice Advisory Committee with regards to pollution prevention techniques. Such concerns will be taken into account as part of the development of this strategy. Staff's analysis will consider technical feasibility, cost-effectiveness, product quality, and other potential impacts of pollution prevention options. District staff will also work with facilities and local government to seek potential funding for implementing pollution prevention strategies.

17. Approach: **Neighborhood Air Toxics Abatement Fund**
Description: This strategy would call for the creation of a fund that can be used for local programs to reduce public exposures to air pollution and support or match funds for projects that would reduce local exposures to air pollution.
Mechanism: Staff would recommend AQMD establish a Neighborhood Air Toxics Abatement Fund for facilities from penalties and other public funding. Staff would also seek U.S. EPA/state funding designated for EJ/toxic programs for matching funds for high priority mobile source emission reduction projects. The funding mechanism is not intended to be a pay to pollute program nor a means for compliance flexibility. The fund would not be used for strategies Nos. 2 and 14. Strong concerns were raised by environmental and community representatives regarding potential toxic trading and receptors benefiting from the toxic reduction projects not being the same receptors that are affected by the facility. However, they indicated that public funding or penalty monies directed toward reducing toxic emissions would be acceptable and if residual risks cannot be mitigated in a meaningful way, potential relocation of receptors should be considered.

18. Approach: **Additional Controls for Arsenic**
Description: MATES II data indicates that arsenic is one of several compounds that contributes to the ambient risk. This strategy would evaluate and establish additional control requirements for sources of arsenic emissions.
Mechanism: Using the MATES II data, staff will examine the sources of arsenic contributing to the risk levels within the Basin. Staff will then develop technically and economically feasible requirements for the control of arsenic emissions. Such requirements may be implemented through a new or existing rule, depending on the findings of staff's assessment.

19. Approach: **Additional Controls for Auto-body Shops**
Description: During public outreach meetings, auto-body refinishing has been identified as a source of nuisance complaints. This has been verified by examining nuisance complaint records. Due to odor complaints and the variety of TACs in auto-body coatings, this strategy will examine typical causes of odors, compliance status, and evaluate control options for auto-body shops.
Mechanism: This strategy would be implemented in two steps. First, staff would work jointly with stakeholders to conduct a technical assessment of the auto-body refinishing

industry to determine what causes odor complaints. The second step would focus on developing technically and economically feasible options for the reduction of TAC emissions and odors. The options will consider compliance history and impacts on receptors. Such requirements may be implemented through amendments to Rule 1151.

20. Approach: **Diesel Traffic Flow Control**
Description: Companion to strategy No. 11, this strategy would work with local governments and planners to minimize impacts from diesel-based traffic on schools or other sensitive receptors.
Mechanism: Under this strategy, staff would work with local governments and planners to develop alternative traffic patterns for diesel traffic to minimize impacts to schools or other sensitive receptors. This strategy stems from staff's previous analysis for diesel fuel traffic from distribution centers in the Mira Loma area.

21. Approach: **Analysis and Mitigation for Sources Contributing to High Cumulative Air Pollution Impacts (Cancer and Non-Cancer)**
Description: Once the high cumulative impact areas and their key risk contributors are identified, this strategy seeks to develop mitigation measures to reduce air toxic emissions from sources contributing to the cumulative impacts.
Mechanism: Staff would identify those sources in the high ranking areas that contribute to the ambient risk and develop strategies to reduce that risk. Implementation of this strategy will be independent of other strategies contained herein, thereby eliminating duplication. Strategies for sources identified could include regulatory or policy approaches. Regulatory approaches may include, but are not limited to, more stringent new source review or risk reduction requirements for existing sources. Other enforceable legal instruments, such as memorandums of understanding (MOUs) and stipulated abatement orders, may also be used. Staff would recommend the most effective regulatory or policy tools available to reduce cumulative impacts.

Nuisance Strategy

22. Approach: **Odor Abatement Program for Existing Facilities**
Description: As mentioned in Early-Action Control Strategy No. 10, the issue of nuisance odors has continuously been raised at public meetings. This program would build on the Pilot Odor Abatement Program by extending control strategies to existing facilities.
Mechanism: This control strategy would focus on existing equipment that have been identified in the Pilot Odor Abatement Program or other efforts that require measures to prevent exposure to odors. This would include the identification and development of technically feasible and cost-effective retrofit control options.

23. Approach: **ARB Component**
Description: This strategy would consider CARB's air toxics control program to identify sources under their jurisdiction that contribute significantly to cumulative impacts.
Mechanism: Staff would work cooperatively with CARB to identify strategies under their authority for implementation that would be supported at the local level. Such strategies could include requirements for particulate traps for in-use diesel

engines. AQMD could also make recommendations to CARB based on findings from this effort.

24. Approach: **U.S. EPA Component**
Description: As with CARB, this strategy would develop strategies for sources under U.S. EPA jurisdiction that contribute significantly to cumulative impacts.
Mechanism: Staff would work cooperatively with U.S. EPA to identify strategies for mobile sources, such as diesel trucks, trains, and ships that are under U.S. EPA jurisdiction. AQMD could also make recommendations to U.S. EPA based on findings from this effort.

25. Approach: **Increased/Targeted Funding for Disproportionately Impacted Areas**
Description: Prioritize funding to disproportionately impacted areas.
Mechanism: AQMD would continue to prioritize funding for areas of higher risk, similar to the criteria set by AB 1390 (Firebaugh) applicable to the use of Moyer Funds in disproportionately impacted areas and the priority established in the AQMD's grant program for school bus funding and non-perc dry cleaners (50 percent of funding reserved for areas with greater than 1,000 in a million cancer risk or greater than 10 percent population below the poverty level). Funding could also include money from the federal government and other sources. AQMD will maintain an active role in securing continuous funding for Carl Moyer, school bus funding, and other programs where funding is essential for reducing cumulative impacts.

Periodic ATCP Revisions

Future updates to the air toxics plan will be conducted on a periodic basis, the first of which will utilize data from MATES III (discussed below). Future updates will include improved inventories, methodologies, and special studies to focus on achieving greater air toxic emission reductions from stationary and mobile source categories. Development of those plans will rely on an iterative process for prioritization. The updates will also take into consideration comments received at various Town Hall meetings, task forces, and other public meetings.

The ATCP will be subject to periodic revisions, including the following four enhancements:

1. Improve Emissions Inventories, Data and Analysis Tools

This enhancement would involve the development of better data and analytical methods with which to measure, report, and evaluate cumulative air pollution impacts, and programs to address those risks. Such improvements would be made to the AQMD's inventories, as well as the data needed to conduct analyses. This would be accomplished by using special studies (e.g., MATES III), information gained through various rule development efforts and existing efforts to update and improve emissions inventories, such as linking Annual Emission Reporting (AER) program and Air Toxics Hot Spots (AB 2588) databases. Updated inventory information from the state relative to mobiles sources (i.e., EMFAC 2002) will also be utilized for the first ATCP update. Such information will be continually updated on an ongoing basis. This will enable staff to focus and facilitate efforts relative to addressing cumulative impacts and implementing the control strategies in the most efficient manner possible.

2. Improve Modeling Tools

To assess cumulative impacts, staff would utilize improved modeling tools (e.g., 2003 AQMP modeling techniques) for evaluating air toxic impacts at the local level from all nearby sources, including mobile sources, for comparing local level exposures within the region. In the short-term, staff will conduct an assessment using the improved emission inventories associated with the 2003 AQMP to examine progress since the approval of the March 2000 ATCP. Staff would then continue to update these tools on an ongoing basis.

3. Identify and Address Non-Cancer Risks

MATES II focused on examining those TACs contributing to cancer risk throughout the Basin and did not specifically analyze non-cancer impacts associated with those chemicals. At many public outreach meetings, consistent comments were made that such studies should also address non-cancer impacts. This strategy would develop a program that not only seeks to reduce cancer risk, but also identifies ways to reduce chronic and acute non-cancer or other public health exposures. To address this issue in the short-term, staff will be examining the data collected in MATES II to estimate the non-cancer impacts throughout the Basin using the previous data. This information will be used in the ATCP Addendum and to assist in development of the strategies. MATES III will examine non-cancer and asthma impacts (to the extent possible) and staff will seek to use this information for future updates to the ATCP.

4. Evaluate High Cumulative Air Pollution Impact Areas

Using the data and information resulting from the previous three enhancements, staff will refine the approach to prioritize areas of concern based on unusually high levels of cumulative health risk and to identify sources contributing significantly to that risk. This information will be used to develop specific measures to reduce public exposures to air pollution and health risks. As previously described, the approach was developed as a tool to prioritize staff resources, not as a regulatory classification. Staff recommends using MATES II data to examine the top 100 1 km x 1 km grid cells for each mobile and stationary sources to identify sources and potential solutions. The process will then continue with the next 100 grid cells. This approach may be revised when staff gains more experience and new techniques become available. The analysis of potentially high cumulative impact areas will form the foundation to formulate control strategies.

MATES III

As directed by the Governing Board in January 2003, staff will be conducting the third MATES program. As before, AQMD will use a scientific review panel and will seek public input on the various aspects of the program, including monitoring locations and evaluation tools. The list of toxic air contaminants (TACs) will be revised from MATES II to address the risks associated with additional chemicals of concern. Some TACs may be eliminated from the analysis if they were not detected in the previous study.

A key element of MATES III will be the selection of micro-scale sites for localized monitoring. Staff has received numerous suggestions for such sites and will be further evaluating various locations. It is anticipated that monitoring, modeling, analysis, and reporting, will take approximately 1 ½ years. Monitoring is projected to start in April 2004.

V. PUBLIC PROCESS

The Working Group met seven times to discuss a program to reduce cumulative impacts from air pollution. These meetings, plus five Community Forums, helped identify issues and potential approaches.

Working Group and Public Input

Environmental/community, industry, and AQMD staff Working Group members generated separate lists of recommended cumulative impact control strategies. All three lists of suggested options were discussed, combined and narrowed down to a list of 19 options that were provided for public comment at five Community Forums. Staff conducted these forums at various locations throughout the Basin in the evenings or Saturdays (Mira Loma, Fontana, Sun Valley, Santa Ana, and Wilmington) in May and June 2003. A summary of the input received from the Community Forums is provided in Appendix F. Additional strategies were added as a direct result of comments heard at the Community Forums.

The discussion in the following sections highlights interests of the different groups represented on the working group. There were many areas of agreement among the members. First, all parties agreed that areas of high cumulative impacts need to be addressed; it is how that may be accomplished where there are differences. There was also consensus that in order to establish an effective program to reduce cumulative impacts, improvements in emission inventories, data, tools, and modeling are necessary. In addition, all parties agreed that non-cancer risks need to be identified and addressed. These areas of agreement correspond to the enhancements proposed for the periodic updates to the ATCP. There was also general agreement on other suggested control strategies to reduce air emissions from source-specific activities that are currently unregulated, such as truck and train idling (Nos. 11 and 12), yard/port activities (No. 3), chromium spray operations (No. 4), and arsenic controls (No. 18). There was support for the Voluntary AQMD/Local Government/Public Agency Partnerships.

However, there was not consensus on strategies that would result in source-specific requirements for sources, such as more stringent requirements for new or existing sources located close to schools or possibly other sensitive receptors.

Following is a summary of the key interests and recommendations by members of the working group representing industry, environmental/community, and local governments.

Industry

Industry representatives of the Cumulative Impacts Working Group felt that the most effective programs addressing air pollution have resulted from identifying the source(s) of the cumulative air pollution problem and developing strategies for reducing pollution from the sources that are creating the problem. They pointed out that California law provides clear direction in the area of Environmental Justice, defining it as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." (Government Code §65040. 12(c)), as well as highlighting AQMD's own definition. Industry also felt that the AQMD should use valid tools to identify areas that have unusually high levels of cumulative risk and exposure and develop programmatic solutions to address these areas.

Pursuant to Health and Safety Code Section 40440(c), industry representatives have pointed out AQMD's obligation to regulate in a manner that results in the most effective and least burdensome programs. They felt that this can only be done if the problem areas are clearly identified and prioritized and the sources of the problem identified. The industry representatives' key recommendations are summarized as follows:

1. Define the areas of concern based on areas which have unusually high levels of cumulative risk when compared to the region;
2. Identify the sources contributing significantly to the health risk in those areas; and
3. Develop programs targeting the sources contributing to the problem.

Environmental/Community

Environmental/community representatives agree that high risk areas should be addressed. In addition, they site the need for better tools and data for analyzing cumulative risks and they suggest a program that is broad and more encompassing. The environmental/community representatives are also interested in:

1. Further developing and implementing methods of pollution prevention;
2. Developing additional mitigation requirements for all facilities, including both existing and future proposed facilities that are located in heavily impacted areas;
3. Establishing emission reduction goals for industry-wide reductions for certain heavy polluting sectors (e.g., refineries, auto body/paint shops, printers, and nail salons);
4. Adoption of specific goals for Hazardous Air Pollutants (HAPs) emission reductions from both the stationary and mobile sources under AQMD's authority. Success would be measured by decreased TAC emissions and increased number of permits denied or not renewed; and
5. Developing and incorporating into source-specific rules health-based and distance-based siting criteria for residential and sensitive receptors, and requiring applicants for new, modified, or renewed permits in heavily impacted areas to verify the underlying assumptions and assertions about emissions and impacts of the proposed equipment and processes.

The environmental and community representatives feel strongly that Rules 1401 and 1402 should be strengthened and applied to all permitted sources, regardless of their contribution to cumulative impacts. They also do not want the Neighborhood Toxic Abatement Fund to be used by facilities to meet more stringent standards.

Local Government

Local government representatives commented that a program to mitigate cumulative risk should only proceed once the highest risk areas and the contributors to those highest risks are identified. In general, across-the-board programs that target risk reduction within the stationary source category while disregarding the large contribution from mobile sources are undesirable. Stationary source risk reduction is appropriate where it has been clearly shown that the stationary source contributes the major portion of the risk. In general local government representatives desire a cumulative impacts program that:

1. Identifies high risk areas from all contributors;
2. Analyzes the risk contributors for those high risk areas;
3. Identifies agencies with authority/jurisdiction;
4. Minimizes disproportionate risk through existing programs if possible, such as expanded fleet rules, AB 2588 etc.; and
5. Creates incentive programs secondly to target under-regulated/unregulated problem source.

VI. RECOMMENDATIONS

Staff recommends the approach outlined within this White Paper, which calls for immediate work to develop the Early-Action Control Strategies and an Addendum to the March 2000 Air Toxics Control Plan, a commitment for future periodic updates to the ATCP, and completion of MATES III.

VII. PROPOSED SCHEDULE

Staff proposes the following schedule:

1. White Paper presented to the Governing Board: September 2003.
2. Addendum to the March 2000 Air Toxics Control Plan: December 2003.
3. Report to the Stationary Source Committee every 6 months.
4. Report to Board once per year as part of the EJ Enhancements.
5. Early-Action Control Strategies developed and implemented within 3 years.
6. Remaining Control Strategies developed and implemented within 3 to 5 years.
7. Working Group meetings, as necessary, to receive input on proposals being developed.

Table 4A presents the proposed schedule for each of the control strategies, sorted by strategy number, addressed in this paper. Table 4B presents the strategies sorted by proposed adoption date.

Table 4A
Control Strategy Schedule
(Sorted by Strategy Number)

No.	Title	Date of Proposed Adoption
Early-Action Control Strategies (Rules)		
1	Air Toxic Control for Back-up Generators	1st Quarter 2004
2	More Stringent Requirements for New Sources Located Near Existing Schools and Possibly Other Sensitive Receptors	2004
3	Yard Hostlers at Ports, Rail Yards, and Distribution Centers	2004-2005
4	Chromium Spray Coating Operations	4th Quarter 2004
5	Private Fleet Rule Development	2004-2005
Early-Action Control Strategies (Policy)		
6	Increased Compliance Assurance for Repeat Emission Violations	2004-2005
7	Prioritize Resources for CEQA Document Review in High Cumulative Impact Areas	2004
8	Voluntary AQMD/Local Government/Public Agency Partnership	2004
9	Governing Board Resolution to CARB	2003
Early-Action Nuisance Strategy		
10	Pilot Odor Abatement Program	2004-2006
Additional Recommended Strategies for the ATCP		
11	Truck Idling	2005
12	Train Idling	2005
13	Marine and Airport Operations	2005-2008
14	More Stringent Requirements for Rule 1402 Sources Near Existing Schools and Possibly Other Sensitive Receptors	2004-2005
15	More Stringent Air Toxic Source-Specific Requirements for Sources Near Existing Schools and Possibly Other Sensitive Receptors	2005-2008
16	Develop and Launch Pollution Prevention Initiatives	Ongoing
17	Neighborhood Air Toxic Abatement Fund	2004 & Ongoing
18	Additional Controls for Arsenic	2005
19	Additional Control for Auto-body Shops	2005
20	Diesel Traffic Flow Control	Ongoing
21	Analysis and Mitigation for Sources Contributing to High Cumulative Air Pollution Impacts (Cancer and Non-Cancer)	2004 & Ongoing
22	Odor Abatement Program for Existing Facilities (Nuisance Strategy)	2005 & Ongoing
23	ARB Component	Ongoing
24	U.S. EPA Component	Ongoing
25	Increased/Targeted Funding for Disproportionate Impacted Areas	Ongoing

*Initial development will commence upon the ATCP Addendum approval by the AQMD Governing Board. Updates will be made in conjunction with future updates to the AQMP and ATCP, as well as using the results derived from the MATES III effort.

Table 4B
Control Strategy Schedule
(Sorted by Date)

No.	Title	Date of Proposed Adoption
9	Governing Board Resolution to CARB	2003
1	Air Toxic Control for Back-up Generators	1st Quarter 2004
2	More Stringent Requirements for New Sources Located Near Existing Schools and Possibly Other Sensitive Receptors	2004
7	Prioritize Resources for CEQA Document Review in High Cumulative Impact Areas	2004
8	Voluntary AQMD/Local Government/Public Agency Partnership	2004
4	Chromium Spray Coating Operations	4th Quarter 2004
3	Yard Hostlers at Ports, Rail Yards, and Distribution Centers	2004-2005
5	Private Fleet Rule Development	2004-2005
6	Increased Compliance Assurance for Repeat Emission Violations	2004-2005
14	More Stringent Requirements for Rule 1402 Sources Near Existing Schools and Possibly Other Sensitive Receptors	2004-2005
10	Pilot Odor Abatement Program	2004-2006
17	Neighborhood Air Toxic Abatement Fund	2004 & Ongoing
21	Analysis and Mitigation for Sources Contributing to High Cumulative Air Pollution Impacts (Cancer and Non-Cancer)	2004 & Ongoing
11	Truck Idling	2005
12	Train Idling	2005
18	Additional Controls for Arsenic	2005
19	Additional Control for Auto-body Shops	2005
13	Marine and Airport Operations	2005-2008
15	More Stringent Air Toxic Source-Specific Requirements for Sources Near Existing Schools and Possibly Other Sensitive Receptors	2005-2008
22	Odor Abatement Program for Existing Facilities (Nuisance Strategy)	2005 & Ongoing
16	Develop and Launch Pollution Prevention Initiatives	Ongoing
20	Diesel Traffic Flow Control	Ongoing
23	ARB Component	Ongoing
24	U.S. EPA Component	Ongoing
25	Increased/Targeted Funding for Disproportionate Impacted Areas	Ongoing

Appendix C Summary Table of Arsenic in Soil

Appendix

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Table 1
SUMMARY TABLE OF ARSENIC IN SOIL
Chaffey Community College Campus Expansion
Chaffey Community College District
Fontana, California

	Concentration (milligrams per kilogram [mg/kg])	
Sample Number	**Sample Date**	**Arsenic**
SS-4-0.0	2/13/2020	4.4
SS-8-0.0	2/13/2020	5.1
SS-12-0.0	2/13/2020	6.0
SS-16-0.0	2/13/2020	5.6
SS-20-0.0	2/13/2020	6.3
SS-24-0.0	2/13/2020	8.1
SS-28-0.0	2/13/2020	6.8

Background Data From The Proposed High School No. 5 Site in Fontana

	Concentration (milligrams per kilogram [mg/kg])	
Sample Number	**Sample Date**	**Arsenic**
B-4B@4.0	7/23/2003	11.5
B-9@0.5	2/26/2003	5.18
B-11B@2.5	7/23/2003	11.8
B-12@0.5	2/26/2003	5.16
B-15@0.5	2/26/2003	4.62
B-18B@2.5	7/23/2003	9.3
B-28B@2.5	7/23/2003	11.1
B-30@0.5	2/26/2003	6.07

Notes:
EPA= Environmental Protection Agency
Samples analyzed by EPA Method 6010B
Project Site Arsenic Data Source: Geocon West, Inc., 2020, Limited Pesticide Assessment Report, Chaffey Community College, Land Acquisition for Future Campus Expansion, Sierra Avenue and Under Wood Drive, Fontana, California, dated February 21.
Background concentrations from Proposed High School No. 5 Site in Fontana
Background Source: Haley & Aldrich, 2004, Preliminary Environmental Assessment Report, Proposed Continuation High School Site, Near Southeast Corner of Santa Ana Avenue and Cypress Avenue, Fontana, California, dated October 6.

Site data

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.2 4/20/2023 10:20:55 AM
From File	Arsenic_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

arsenic

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	0
Minimum	4.4	Mean	6.043
Maximum	8.1	Median	6
SD	1.201	Std. Error of Mean	0.454
Coefficient of Variation	0.199	Skewness	0.511

Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,
refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,
but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).
The Chebyshev UCL often results in gross overestimates of the mean.
Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.

Normal GOF Test

Shapiro Wilk Test Statistic	0.985	Shapiro Wilk GOF Test
1% Shapiro Wilk Critical Value	0.73	Data appear Normal at 1% Significance Level
Lilliefors Test Statistic	0.13	Lilliefors GOF Test
1% Lilliefors Critical Value	0.35	Data appear Normal at 1% Significance Level

Data appear Normal at 1% Significance Level
Note GOF tests may be unreliable for small sample sizes

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	6.925	95% Adjusted-CLT UCL (Chen-1995)	6.883
		95% Modified-t UCL (Johnson-1978)	6.94

Gamma GOF Test

A-D Test Statistic	0.133	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.707	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.102	Kolmogorov-Smirnov Gamma GOF Test
5% K-S Critical Value	0.311	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level
Note GOF tests may be unreliable for small sample sizes

Gamma Statistics

k hat (MLE)	29.97	k star (bias corrected MLE)	17.22
Theta hat (MLE)	0.202	Theta star (bias corrected MLE)	0.351
nu hat (MLE)	419.6	nu star (bias corrected)	241.1
MLE Mean (bias corrected)	6.043	MLE Sd (bias corrected)	1.456

53						Approximate Chi Square Value (0.05)					206.1
54			Adjusted Level of Significance		0.0158	Adjusted Chi Square Value					196.4
55											
56					Assuming Gamma Distribution						
57			95% Approximate Gamma UCL		7.067	95% Adjusted Gamma UCL					7.42
58											
59					Lognormal GOF Test						
60			Shapiro Wilk Test Statistic		0.998	Shapiro Wilk Lognormal GOF Test					
61			10% Shapiro Wilk Critical Value		0.838	Data appear Lognormal at 10% Significance Level					
62			Lilliefors Test Statistic		0.105	Lilliefors Lognormal GOF Test					
63			10% Lilliefors Critical Value		0.28	Data appear Lognormal at 10% Significance Level					
64					Data appear Lognormal at 10% Significance Level						
65					Note GOF tests may be unreliable for small sample sizes						
66											
67					Lognormal Statistics						
68			Minimum of Logged Data		1.482	Mean of logged Data					1.782
69			Maximum of Logged Data		2.092	SD of logged Data					0.198
70											
71					Assuming Lognormal Distribution						
72			95% H-UCL		7.115	90% Chebyshev (MVUE) UCL					7.399
73			95% Chebyshev (MVUE) UCL		8.014	97.5% Chebyshev (MVUE) UCL					8.867
74			99% Chebyshev (MVUE) UCL		10.54						
75											
76					Nonparametric Distribution Free UCL Statistics						
77					Data appear to follow a Discernible Distribution						
78											
79					Nonparametric Distribution Free UCLs						
80			95% CLT UCL		6.79	95% BCA Bootstrap UCL					6.771
81			95% Standard Bootstrap UCL		6.735	95% Bootstrap-t UCL					7.106
82			95% Hall's Bootstrap UCL		7.236	95% Percentile Bootstrap UCL					6.757
83			90% Chebyshev(Mean, Sd) UCL		7.405	95% Chebyshev(Mean, Sd) UCL					8.022
84			97.5% Chebyshev(Mean, Sd) UCL		8.878	99% Chebyshev(Mean, Sd) UCL					10.56
85											
86					Suggested UCL to Use						
87			95% Student's-t UCL		6.925						
88											
89					Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.						
90					Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.						
91					However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.						
92											

Background data - Surfa Hills HS

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for Uncensored Full Data Sets											
2												
3	User Selected Options											
4	Date/Time of Computation	ProUCL 5.2 4/20/2023 10:22:04 AM										
5	From File	Arsenic_b.xls										
6	Full Precision	OFF										
7	Confidence Coefficient	95%										
8	Number of Bootstrap Operations	2000										
9												
10												
11	arsenic											
12												
13	General Statistics											
14	Total Number of Observations					8			Number of Distinct Observations			8
15									Number of Missing Observations			0
16	Minimum					4.62			Mean			8.091
17	Maximum					11.8			Median			7.685
18	SD					3.142			Std. Error of Mean			1.111
19	Coefficient of Variation					0.388			Skewness			0.121
20												
21	Note: Sample size is small (e.g., <10), if data are collected using incremental sampling methodology (ISM) approach,											
22	refer also to ITRC Tech Reg Guide on ISM (ITRC 2020 and ITRC 2012) for additional guidance,											
23	but note that ITRC may recommend the t-UCL or the Chebyshev UCL for small sample sizes (n < 7).											
24	The Chebyshev UCL often results in gross overestimates of the mean.											
25	Refer to the ProUCL 5.2 Technical Guide for a discussion of the Chebyshev UCL.											
26												
27	Normal GOF Test											
28	Shapiro Wilk Test Statistic					0.828			Shapiro Wilk GOF Test			
29	1% Shapiro Wilk Critical Value					0.749			Data appear Normal at 1% Significance Level			
30	Lilliefors Test Statistic					0.24			Lilliefors GOF Test			
31	1% Lilliefors Critical Value					0.333			Data appear Normal at 1% Significance Level			
32	Data appear Normal at 1% Significance Level											
33	Note GOF tests may be unreliable for small sample sizes											
34												
35	Assuming Normal Distribution											
36	95% Normal UCL								95% UCLs (Adjusted for Skewness)			
37	95% Student's-t UCL					10.2			95% Adjusted-CLT UCL (Chen-1995)			9.969
38									95% Modified-t UCL (Johnson-1978)			10.2
39												
40	Gamma GOF Test											
41	A-D Test Statistic					0.686			Anderson-Darling Gamma GOF Test			
42	5% A-D Critical Value					0.717			Detected data appear Gamma Distributed at 5% Significance Level			
43	K-S Test Statistic					0.231			Kolmogorov-Smirnov Gamma GOF Test			
44	5% K-S Critical Value					0.295			Detected data appear Gamma Distributed at 5% Significance Level			
45	Detected data appear Gamma Distributed at 5% Significance Level											
46	Note GOF tests may be unreliable for small sample sizes											
47												
48	Gamma Statistics											
49	k hat (MLE)					7.314			k star (bias corrected MLE)			4.654
50	Theta hat (MLE)					1.106			Theta star (bias corrected MLE)			1.738
51	nu hat (MLE)					117			nu star (bias corrected)			74.47
52	MLE Mean (bias corrected)					8.091			MLE Sd (bias corrected)			3.75

53							Approximate Chi Square Value (0.05)					55.6
54				Adjusted Level of Significance		0.0195				Adjusted Chi Square Value		51.49
55												
56						Assuming Gamma Distribution						
57				95% Approximate Gamma UCL		10.84				95% Adjusted Gamma UCL		11.7
58												
59						Lognormal GOF Test						
60				Shapiro Wilk Test Statistic		0.836			Shapiro Wilk Lognormal GOF Test			
61				10% Shapiro Wilk Critical Value		0.851			Data Not Lognormal at 10% Significance Level			
62				Lilliefors Test Statistic		0.205			Lilliefors Lognormal GOF Test			
63				10% Lilliefors Critical Value		0.265			Data appear Lognormal at 10% Significance Level			
64						Data appear Approximate Lognormal at 10% Significance Level						
65						Note GOF tests may be unreliable for small sample sizes						
66												
67						Lognormal Statistics						
68				Minimum of Logged Data		1.53				Mean of logged Data		2.021
69				Maximum of Logged Data		2.468				SD of logged Data		0.404
70												
71						Assuming Lognormal Distribution						
72				95% H-UCL		11.46				90% Chebyshev (MVUE) UCL		11.6
73				95% Chebyshev (MVUE) UCL		13.18				97.5% Chebyshev (MVUE) UCL		15.38
74				99% Chebyshev (MVUE) UCL		19.7						
75												
76						Nonparametric Distribution Free UCL Statistics						
77						Data appear to follow a Discernible Distribution						
78												
79						Nonparametric Distribution Free UCLs						
80				95% CLT UCL		9.918				95% BCA Bootstrap UCL		9.873
81				95% Standard Bootstrap UCL		9.805				95% Bootstrap-t UCL		10.12
82				95% Hall's Bootstrap UCL		9.351				95% Percentile Bootstrap UCL		9.873
83				90% Chebyshev(Mean, Sd) UCL		11.42				95% Chebyshev(Mean, Sd) UCL		12.93
84				97.5% Chebyshev(Mean, Sd) UCL		15.03				99% Chebyshev(Mean, Sd) UCL		19.14
85												
86						Suggested UCL to Use						
87				95% Student's-t UCL		10.2						
88												
89	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
90	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.											
91	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
92												

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Arsenic Strategies
Determination of Arsenic Remediation
Development of Arsenic Cleanup Goals
January 16, 2009

The Department of Toxic Substances Control (DTSC) oversees the environmental assessments of hazardous waste sites and proposed and existing schools. During the Preliminary Environmental Assessment (PEA) or Remedial Investigation (RI) for sites, arsenic may be identified as a chemical of concern based on comparisons to naturally occurring background concentrations. Once arsenic has been identified as a chemical of concern, a standard approach is needed to determine if remedial action is warranted and, if so, how to develop appropriate cleanup goals. The following is the suggested approach from the DTSC Human and Ecological Risk Division (HERD) for arsenic remediation on sites.

Determination of Necessity for Remedial Action
Once arsenic concentrations have been identified to be above background levels, additional characterization may be required to determine the lateral and vertical extent of contamination. This information should be used in the decision making process for the necessity of a removal action. For the areas with elevated arsenic concentrations, if the data from the step out samples indicate that they are isolated areas (i.e., no real extent of contamination), no remedial action may be an option. For areas with high levels of arsenic concentrations, this approach may not be applicable. The complete data set for arsenic should be considered in the determination, including background, onsite ambient levels, and potential contamination.

Development of Cleanup Goals
The following are two options for developing a cleanup goal for arsenic.

Option 1
The upper limit of the background data set can be selected as the cleanup goal.
Option 2
Cleanup goals may be developed using the site specific data set for the project. This data set may include both the data from the site as well as background values from the immediate area. The approach uses both visual evaluation of the data plots (graphical evaluation) and statistical calculations (statistical evaluation).

Graphical Evaluation

Step 1: Create normality plots. The plot should be completed using both log transformed and non-transformed data.

Step 2: For limited data sets, visually determine the inflection point in the distribution. This inflection point can in some cases be used as the approximation for a cleanup goal.

Statistical Evaluation

Step 1: After entering the data into an Excel spreadsheet, calculate summary statistics for the data set (e.g., mean, standard deviation, first quartile and third quartile). If the data set is sufficiently large, evaluate outliers in the data set. Suggested techniques include the ***fourth spread***, or other comparable techniques. Remove outliers from data set and estimate the Upper 95% Limit for the 0.99 Quartile $\boldsymbol{UL_{0.95}(X_{0.99})}$ as described by Gilbert (1987).

Step 2: Recalculate summary statistics, including 95% Upper Confidence Limit (UCL) using modified data set.

Step 3 (optional): Comparisons of arsenic concentrations corresponding to the approximated inflection point with the summary statistics from data set excluding outliers.

Discussion of Uncertainties

- The incremental cancer risk difference between background levels and proposed cleanup goals will be very small or insignificant in most cases.

- Soil cleanup goals do not take into consideration potentially limited bioavailability of arsenic in soil. Most toxicology studies were based on arsenic in water, which is considerably more bioavailable.

Examples of Derivation of Arsenic Cleanup Goals

Example 1: Simple, Graphical Determination of the Arsenic Clean-up Goal

The following example utilizes an actual data set from a school site in southern California. This example represents a rather large data set with 651 sample values. Table 1 summarizes the data set statistics.

Table 1
Arsenic Data Set Summary Statistics

DESCRIPTIVE STATISTIC	VALUE
Number of Samples	651
Minimum Concentration	0.27
Maximum Concentration	33
Mean Concentration	6.9
Median Concentration	6.7
Standard Deviation	4.02

Figure 1 presents the normality plot of the raw arsenic data. As can be seen from the plot, the data appears to be normally distributed and linear in the range from 1.0 up to about 12 mg/kg, where a distinct change in slope can be seen. This linear portion of the curve would be representative of ambient arsenic in this typical, urban environment. The inflection point where the slope changes is indicative of a population different from ambient arsenic, i.e., site contamination. For this example, 12 mg/kg would represent the upper-bound of ambient arsenic in soil at this site and would serve as the clean-up goal for arsenic.

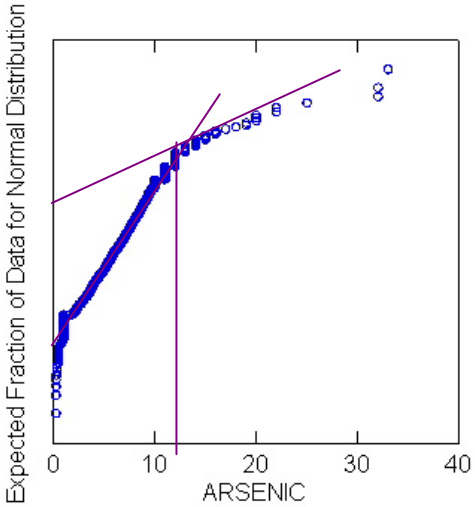

Figure 1
Normality Plot of the Arsenic Data Set

Example 2: Statistical Determination of the Arsenic Clean-up Goal

The following example utilizes a combined data set made up of 19 sites in southern California in order to exemplify the statistical determination of an arsenic clean-up goal. Figure 2 presents a plot of the frequency verses arsenic concentration, also known as a histogram. The shape of the histogram clearly demonstrates a classical, lognormal distribution. The descriptive statistics for the "Log-Transformed" combined arsenic data set of 1097 samples are summarized in Table 2.

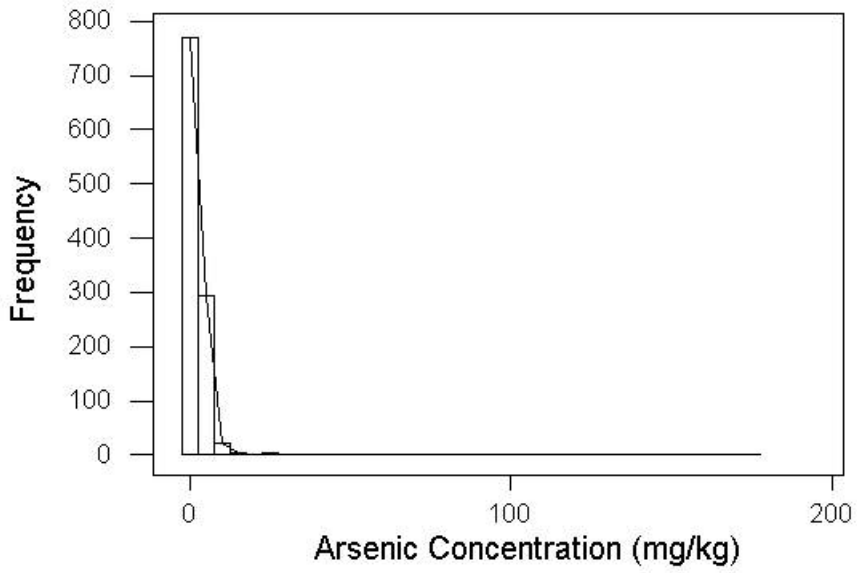

Figure 2
Histogram of the Arsenic Data

Table 2
Descriptive Statistics of the Combined Arsenic Data Set

DESCRIPTIVE STATISTIC	VALUE
Sample Size (n)	1097
Mean (μ)	0.1873 (1.54 mg/kg)
Median	0.1761 (1.50 mg/kg)
Standard Deviation	0.3916
Standard Error of the Mean[1]	0.0118
Minimum Concentration	-1.7620 (0.02 mg/kg)
Maximum Concentration	2.2480 (177 mg/kg)
Lower Quartile (Q_1)	-0.1249
Upper Quartile (Q_3)	0.4502

[1] The *Standard Error of the Mean* = $\frac{Std.Dev.}{\sqrt{n}}$

Because of the large sample size, wide range of arsenic concentrations and obvious extremes of the distribution, the data were analyzed for values that do not conform to

the pattern established by the majority of values in the data set, e.g., ***outliers***. To determine the outliers in the arsenic data set, a pictorial summary called the box plot was utilized. A box plot describes the most prominent features of a data set, including 1) center, 2) spread, 3) extent and nature of any departure from symmetry and 4) identification of any outliers or observations that lie unusually far from the main body of data. A box plot is based on measures that are unaffected by the presence of a few outliers, also known as the ***fourth spread***, f_s. The fourth spread, f_s, is defined as the measure of spread in a data set that is resistant to outliers and is calculated according to the following equation.

$$f_s = Q_3 - Q_1 \qquad \textbf{(Equation 1)}$$

$$= (0.4502 - (-0.1249))$$

$$= 0.5751$$

By definition, any observation farther than $1.5f_s$ from the closest fourth is considered an outlier. For the combined arsenic data set, $1.5f_s$ is equal to 0.8627 and any observation below $Q_1 - 1.5f_s$ or above $Q_3 + 1.5f_s$ would be considered an outlier. For the combined arsenic data set, outliers were defined as all observations:

$< Q1 - 1.5f_s$	and	$> Q3 + 1.5f_s$
$< (-0.1249 - 0.8627)$	and	$> (0.4502 + 0.8627)$
< -0.9876 (0.103 mg/kg)	and	> 1.3129 (20.55 mg/kg)

Therefore, the following arsenic concentrations were determined to be outliers: 177, 61.4, 49.2, 31.0, 27.6, 26.5, 24.0, 23.3, 22.7, 0.067 and 0.0173 mg/kg. These results are consistent with the box plot of the combined arsenic data set (Figure 3), which indicates that the nine largest and two lowest values are outliers.

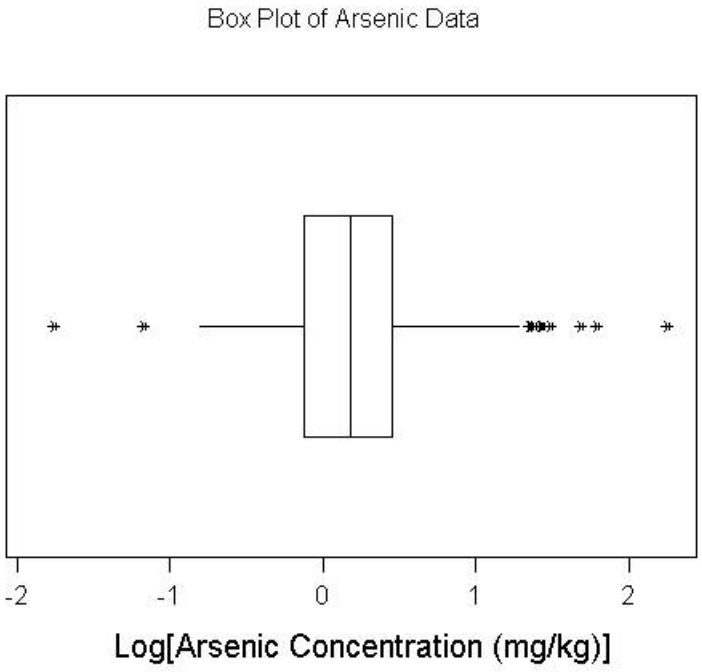

Figure 3

The large number of data points well characterizes the extremes of the distribution, thereby making it possible to use an estimate of an upper percentile of background concentrations as the value to be compared with the onsite C_{max}.

For this analysis, the 95% Upper Confidence Limit on the 99th-Percentile was chosen as the upper limit concentration. An upper 100(1 - α)% confidence limit for the true *p*th quantile, x_p, can be calculated if the underlying distribution is normal. As shown in Figure 4, the normal probability plot of arsenic data, excluding the outliers, clearly shows that the arsenic data is not normally distributed. However, as shown in Figure 5, the log-transformed arsenic data is normally distributed (i.e., the arsenic data fits a lognormal distribution). The descriptive statistics for the log-transformed arsenic data set, excluding the outliers previously established, are summarized in Table 3.

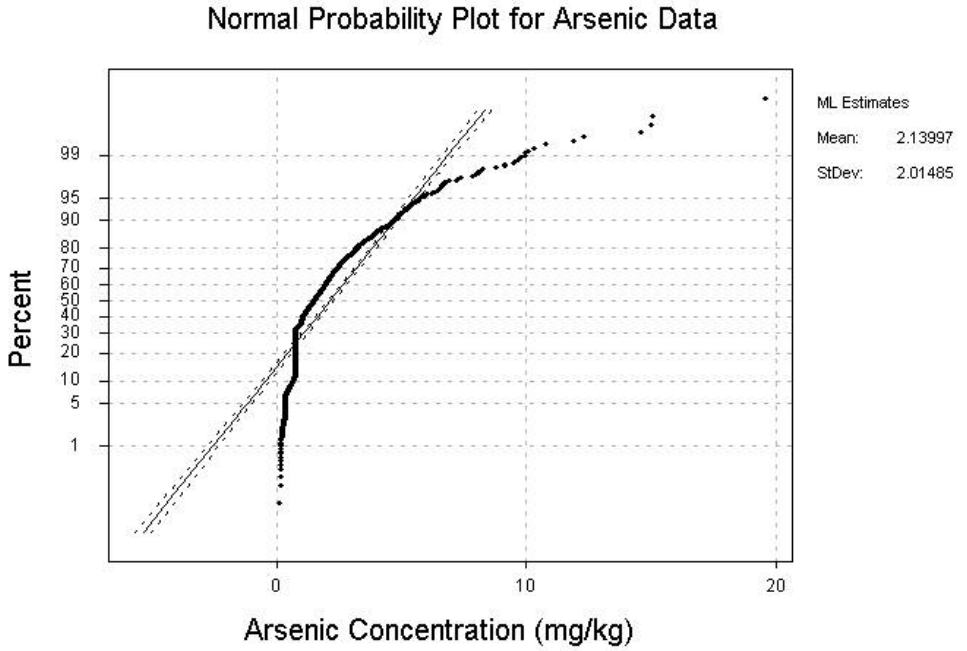

Figure 4

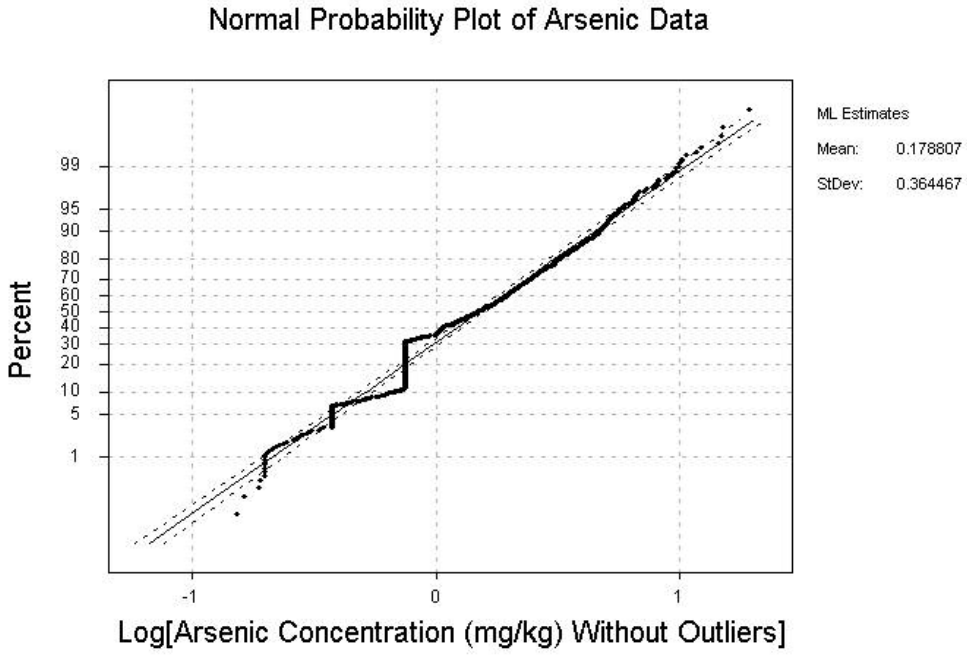

Figure 5

Table 3

Descriptive Statistics of the Combined Arsenic Data Set Without Outliers

DESCRIPTIVE STATISTIC	VALUE
Sample Size (n)	1086
Mean (μ)	0.1788 (1.51 mg/kg)
Median	0.1761 (1.50 mg/kg)
Standard Deviation	0.3646
Standard Error of the Mean[1]	0.0111
Minimum Concentration	-0.8125 (0.15 mg/kg)
Maximum Concentration	1.2930 (19.63 mg/kg)
Lower Quartile (Q_1)	-0.1249
Upper Quartile (Q_3)	0.4472

[1] The *Standard Error of the Mean* = $\frac{Std.Dev.}{\sqrt{n}}$

The upper limit of the data set can be estimated according to the following equation:

$$UL_{1-\alpha}\left(x_p\right) = \bar{x} + sK_{1-\alpha,p} \qquad \textbf{(Equation 2)}$$

Where,

$UL_{1-\alpha}\left(x_p\right) = The\ Upper\ Limit\ of\ the\ data\ set$

$\bar{x} = Mean\ \ of\ the\ data\ set$

$s = Std.\ Dev.\ of\ the\ mean$

$K_{1-\alpha,p} = Statistical\ tolerance\ \ factor\ \ for\ estimating\ an\ Upper\ 100(1-\alpha)$
$Confidence\ Limit\ on\ the\ \ pth\ Quantile$

For calculating the 95% confidence limit of the 99th quantile of the arsenic data set, excluding outliers, $\boldsymbol{K_{0.95,\ 0.99}}$ **= 2.40** (from Table A3, Gilbert 1987). Using the mean and standard deviation of the arsenic data set (Table 2), the $\boldsymbol{UL_{0.95}(X_{0.99})}$ can be calculated as follows:

$$UL_{0.95}(X_{0.99}) = 0.1788 + (2.40)(0.3646)$$
$$= 1.054$$

Since the arsenic data is log-transformed, the Upper Limit Concentration is the antilogarithm of this value.

$$UL_{0.95}(X_{0.99}) = 10^{1.054}$$

= 11.32 mg/kg

A distribution-free, non-parametric analysis was also conducted to estimate the theoretical ***$UL_{0.95}(X_{0.99})$*** as described by Gilbert (1987). This method, also known as the distribution-free technique, is used when the underlying distribution is either unknown or non-normal. This method was employed using the following equation:

$$The\ Rank\ of\ the\ UL_{0.95}(X_{0.99}) = p(n+1) + Z_{1-\alpha}[np(1-p)]^{1/2}$$ **(Equation 3)**

Where,

$$p = 99th Quantile = 0.99$$
$$Z_{1-\alpha} = Z\ Value\ for\ the\ 95\%\ Confidence\ Interval$$
$$= Z_{0.95}$$
$$= 1.645$$
$$n = Number\ of\ samples, excluding\ outliers$$
$$= 1086$$

For the arsenic data set, the Rank of the Upper 95% Limit for the 0.99 Quantile (***Rank of $UL_{0.95}(X_{0.99})$***) can be calculated as follows:

$$Rank\ of\ UL_{0.95}(X_{0.99}) = 0.99(1087) + 1.645[1086(0.99)(0.01)]^{1/2}$$
$$= 1081.524$$

Then, the ***$UL_{0.95}(X_{0.99})$*** would be the arsenic concentration that is 52.4% of the way between the 1081st and the 1082nd largest values. Since the 1081st value is 11.9 mg/kg and the 1082nd value is 12.3 mg/kg, the ***$UL_{0.95}(X_{0.99})$*** would be approximately **12 mg/kg**.

Example 3: Determination of the Arsenic Clean-up Goal

Examples 1 and 2 represent very large, ideal arsenic data sets used to demonstrate the graphical and statistical approaches to setting clean-up goals. The following example utilizes a much smaller and typical arsenic data set from a site in Southern California and demonstrates several methods for determination of arsenic cleanup goals.

Method 1. Graphical Evaluation

Step 1. Graphical representations of arsenic data set.

Create Normality plots using both raw and log transformed data as shown in Figures 6 and 7. The arsenic concentration can be plotted as a function of the expected value for a normal distribution or alternatively, the data set can be plotted from least value to highest value as the cumulative percent of samples. Either graphical treatment results in a curve representing the distribution of the data set.

Step 2. Visual inspection of the curves

Visual inspection of the curve may yield a determination of an inflection point which represents a break between the ambient level of arsenic for the site and the portion of the curve that represents a separate, higher population which may be a consequence of a release to the environment. For the example shown below it can be determined that an inflection point in the distribution of samples occurs at an approximate arsenic concentration of 10 mg/kg (Figure 6) or at the Log_{10}[arsenic concentration] value of 1 which corresponds to 10 mg/kg (Figure 7).

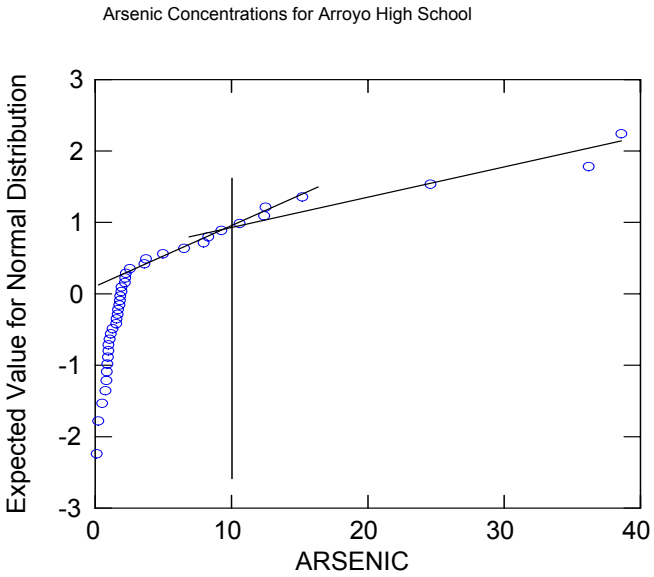

Figure 6
Distribution of arsenic concentrations in mg/kg

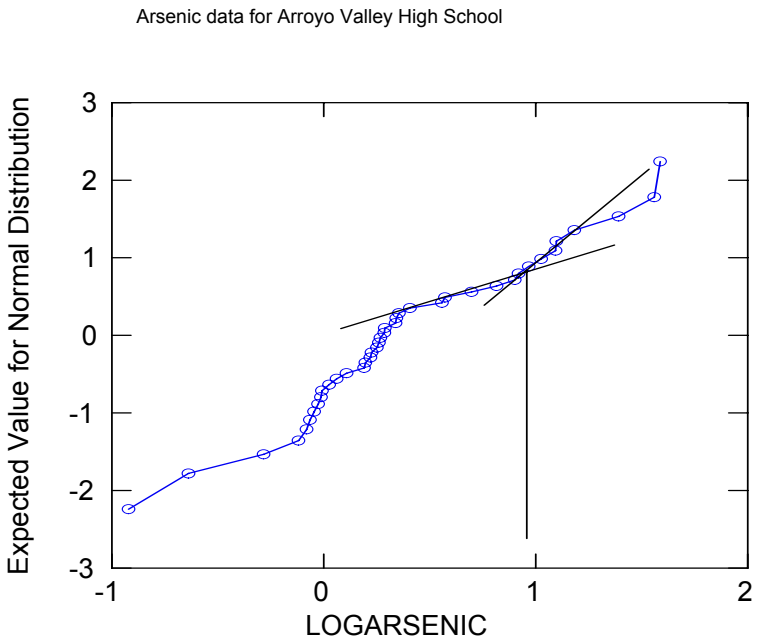

Figure 7
Distribution of arsenic in a log transformed representation

Method 2. Statistical Evaluation: Quartile Analysis ("Fourth Spread")

A statistical approach may be used that identifies upper-bound outliers which can then be removed from the data set to generate a new data set for which an upper confidence limit (UCL) can be defined and utilized as the cleanup goal.

Step 1. Derivation of Descriptive Statistics:

Descriptive statistics as shown in Table 4 were calculated for this site based on the site-specific arsenic data set. These statistics included: number of samples, minimum and maximum site concentration, mean, standard deviation, sample distribution, median and quartiles, 95th and 98th percentile and 95% UCL.

Table 4
Descriptive Statistics

DESCRIPTIVE STATISTIC	VALUE
Number of samples	40
Minimum detected value	0.12
Maximum detected value	38.6
Mean	5.75
First quartile (Q1)	0.98
Median	1.85
Third quartile (Q3)	4.98
95^{th} percentile	25.18
98^{th} percentile	36.73
95%UCL of mean	8.61
Standard deviation	8.93

Values listed in mg/kg

Step 2. Determine upper-bound outliers:

The quartile analysis to determine upper-bound outliers in the data set may be conducted as in the following example: The median and first and third quartiles from the data set shown in Table 4 were determined and a fourth spread (*Fs*) was generated.

First quartile (Q1) = 0.98
Median (second quartile, Q2) = 1.89
Third quartile (Q3) = 4.98

Fs = (Q3 –Q1) = 4.0

Outliers for the upper bound of the site-specific arsenic concentrations are defined as:

All data points greater than Q3 + [1.5 x *Fs*]: 4.98 + 6.0 = 10.98.

Therefore, any value higher than 10.98 mg/kg is considered an outlier (contaminated soil sample) and is eliminated from the data set because it is higher than the ambient level.

Step 3. Statistical re-evaluation of the data set.

The site-specific data set is then re-evaluated with outliers removed to create the adjusted site ambient data set. The statistical evaluation of the adjusted ambient data set yields the following values:

Table 5
Arsenic data set statistics with upper-bound outliers removed

Number of samples	35
Minimum detected value	0.12
Maximum detected value	10.6
Mean	3.74
Std deviation	6.49
98th percentile	9.72

Values listed in mg/kg

An appropriate cleanup goal for this site is the 98th percentile of the adjusted arsenic data set, which is approximately 10 mg/kg. Note that the 98th-percentile was used as an upper-bound for this data set due to the smaller number of samples (N = 40).