Case No. D063288

IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA
FOURTH APPELLATE DISTRICT, DIVISION ONE

CLEVELAND NATIONAL FOREST FOUNDATION, et al.

Petitioners, Respondents and Cross-Appellants,

v.

SAN DIEGO ASSOCIATION OF GOVERNMENTS, et al.

Respondents and Appellants.

PEOPLE OF THE STATE OF CALIFORNIA,

Intervener, Respondent and Cross-Appellant.

Appeal from a Judgment Entered in Favor of Petitioners
San Diego County Superior Court
Case No. 37-2011-00101593-CU-TT-CTL
Consolidated with Case No. 37-2011-00101660-CU-TT-CTL
Honorable Timothy B. Taylor, Judge

APPLICATION FOR LEAVE TO FILE AMICUS BRIEF BY CENTER ON RACE, POVERTY & THE ENVIRONMENT, COMMUNITIES FOR A BETTER ENVIRONMENT, ENVIRONMENTAL HEALTH COALITION, and PHYSICIANS FOR SOCIAL RESPONSIBILITY–L.A.; BRIEF OF AMICI CURIAE IN SUPPORT OF CROSS-APPELLANTS; and DECLARATION OF JASON GEORGE

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CERTIFICATE OF INTERESTED ENTITIES OR PERSONS

There are no entities or persons that must be listed in this certificate under Rule 8.208, California Rules of Court.

Dated: February 4, 2014

Respectfully submitted,

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By:______________________________
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APPLICATION FOR LEAVE TO FILE

Pursuant to California Rule of Court 8.200(c), the Applicants listed below respectfully request permission to file the attached brief of *Amici Curiae* in support of Cross-Appellants Cleveland National Forest Foundation, Sierra Club, Center for Biological Diversity, CREED-21, and Affordable Housing Coalition of San Diego County. No party or counsel of record authored the proposed brief, in whole or in part, or contributed funds for the writing of the proposed brief. This application is timely made within 14 days of the filing of Cross-Appellants' reply brief on the merits.

INTERESTS OF POTENTIAL *AMICI*

Applicants bring an important perspective that is not represented by the parties. They represent the voices of those people least considered, but perhaps most impacted, in the analysis of highway air pollution and resulting health risks from the San Diego Association of Governments ("SANDAG") regional transportation plan ("2050 Plan"). Applicants are devoted to the protection of clean air for all people, regardless of their race or economic status. From both San Diego and across California, Applicants represent communities that live and work near major roadways and already suffer significant health risk burdens from their exposure to toxic pollutants generated by cars and trucks traveling these roadways.

Amicus Center on Race, Poverty & the Environment ("CRPE") is a national environmental justice organization providing legal, organizing, and technical assistance to grassroots groups in low-income communities and communities of color. CRPE is driven by the belief that all people have the right to live, work, play and pray in a healthy environment, regardless of their race, place or income. This case goes to the core of CRPE's mission to achieve environmental justice and healthy, sustainable communities for those low-income families of color bearing the brunt of environmental hazards.

Amicus Communities for a Better Environment ("CBE") is a California non-profit environmental health and justice organization with thousands of members throughout California. CBE works to protect the environment and public health in low-income communities of color in California's urban areas by fighting to reduce air pollution that disproportionately harms these communities. CBE also works to equip residents affected by industrial and freight pollution with information and the tools to monitor and transform their immediate environment. Many of CBE's members live near freeways and heavily traveled roads and are exposed to diesel and other toxic emissions from these sources. Many of CBE's members also rely on public transit to travel to work and school. This case is crucial to furthering CBE's goals of expanding cleaner transportation alternatives and reducing exposure to near-roadway emissions, borne most often by low-income people of color.

Amicus Environmental Health Coalition ("EHC") is a non-profit organization founded in 1980. Located in the San Diego/Tijuana border region, EHC works to improve the health of families, neighborhoods and the natural environment through leader development, organizing and advocacy. EHC's campaigns promote social and environmental justice by empowering communities to confront the unjust consequences of toxic pollution, discriminatory land use and unsustainable energy policies. Historic advances that EHC has secured to protect public health and the environment include one of the first community Right-to-Know laws in the nation (1982), the first law to ban lead-contaminated candies (2005), the first bi-national toxic waste cleanup (2008), the first general plan in the U.S. to include an environmental justice element (2011), and the first use of amortization to relocate industrial polluters (2013). EHC's local work is complemented by participation of staff and volunteer community leaders in networks and campaigns at the regional, state, national, and international levels. This case will determine the health of the San Diego families that EHC strives to protect.

Amicus Physicians for Social Responsibility-Los Angeles ("PSR-LA") is a non-profit organization founded in 1980 as a local affiliate of the national organization, Physicians for Social Responsibility. PSR-LA works to protect public health from environmental threats, and its membership includes over 5,000 physicians, health professionals, and concerned residents. PSR-LA informs the medical community and policymakers about toxic threats, promotes safer health practices, and strengthens local community organizations to engage in meaningful public health and environmental advocacy, with the goal of improving the health and environment for all Californians. This case is of particular importance to the PSR-LA medical community members who have a duty to treat the people afflicted by the many illnesses associated with traffic-related air pollution.

THE PROPOSED BRIEF

Applicants' proposed brief will assist the Court in better understanding the scientific literature showing that vehicle-generated air pollution disproportionately burdens the low-income families of color who live, work, and attend school near major roads. The California Environmental Quality Act requires that these significant impacts be disclosed so that communities can understand the consequences of living near roadways proposed for major expansion and voice their concerns about long-term public transportation planning alternatives in the appropriate public forum.

The proposed brief will also explain the documented practice of other, similarly-situated California regional planning agencies that have analyzed these very impacts when performing environmental reviews of regional transportation plans. The health risk assessment work performed by these sister agencies in Los Angeles and the San Francisco Bay Area demonstrates what can and should be done before San Diego's long-term regional transportation plan is set in concrete.

And finally, Applicants' brief will inform the Court that, regrettably, the project-level environmental analysis of air pollution impacts – to which SANDAG's programmatic Environmental Impact Report defers – is not being done. For the first significant highway project to implement the 2050 Plan, a four-lane expansion of the I-5 highway, the analysis does not address the spikes in asthma, cancer, pre-term births, and lung failure that will afflict nearby families as a result of the additional cars and trucks on the highway.

In sum, Applicants submit the proposed brief in the hope that it will assist the court in deciding this matter of utmost importance to Applicants and the people they serve – the health and welfare of the State's most vulnerable communities.

Dated: Feb. 4, 2014 Respectfully submitted,

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By: Debbie Sivas
Deborah A. Sivas

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SUMMARY OF THE ARGUMENT

In its environmental analysis, the San Diego Association of Governments ("SANDAG") overlooks those disadvantaged families most likely to live, work, and attend school along the busy roads, highways, and ports slated for expansion under its 2050 Regional Transportation Plan ("2050 Plan" or "Plan"). SANDAG's 40-year plan prioritizes highway expansion projects over public transit, both as an absolute matter and across time. The Plan contemplates that most of the scheduled highway projects will occur over the next decades, while the bulk of public transit projects will be pushed out to later decades. These planned highway projects crisscross and fragment low-income, disproportionately minority, and often public transit-dependent communities. People in these communities already are burdened with exposure to traffic-related air pollutants that cause asthma and cancer, among other illnesses. Children, the elderly, and the sick are particularly vulnerable to these pollutants. Yet SANDAG makes no meaningful attempt to assess the increased health risk that these vulnerable populations face as a result of the significant roadway expansion proposed in the 2050 Plan.

SANDAG excuses itself from this fatal omission by pointing to the regional scale of its transportation planning, as if the sheer size of the Plan exempts SANDAG from analyzing its impacts. It does not. To the contrary, the 2050 Plan is the blueprint for the region's long-range transportation infrastructure. It sets in motion, and in stone, future development of an integrated regional transit network. Down the road, as individual projects come up for approval, it will be much too late to alter the Plan in a way that meaningfully addresses air pollution impacts on families living along transportation corridors slated for expansion. Now is the appropriate time, and likely the only time, for regional planners to give serious consideration to options that reduce the pollution burden on San Diego's most vulnerable populations. But without even the basic health risk assessment and information required by California Environmental Quality Act ("CEQA"), Cal. Pub. Res. Code § 21000 *et seq.*, these vulnerable communities are effectively silenced.

Equally unavailing, SANDAG suggests that data gaps, technical obstacles, and scientific uncertainty prevent it from analyzing the public health impacts of its Plan. These excuses do not withstand scrutiny in light of the health risk assessments already being done by other agencies in the San Francisco Bay

Area and Los Angeles regions. Both the Association of Bay Area Governments and the Southern California Association of Governments, peer regional planning agencies, have successfully analyzed traffic-related air pollution impacts on families that live and work along the highways to be expanded under their equivalent regional transportation plans.

In stark contrast, SANDAG relies on later project-level analysis to assess the health impacts of traffic-related air pollution. Not only is subsequent project-level analysis much less useful – because at that level, true alternatives are virtually non-existent – but in fact project-level health risk assessments are not actually being done. The first major project to implement SANDAG's Plan is an Interstate 5 highway expansion project for which environmental review has now been completed. That project's analysis simply lists schools and parks near the freeway, along with some truck emissions data, and then tosses aside the negative health outcomes in a single sentence stating the obvious: schools are "localized CO sources, toxic air contaminants, or odors are of particular concern." Declaration of Jason S. George, Exhibit 1 at 3.14-7 (hereafter "Amici's Exhibit"). As a result, the Plan and its implementation projects are moving forward without meaningful disclosure of their public health impacts, like the rising rates of asthma, lung deficits, cancer, and pre-term births in the families that live, work and attend schools near heavily-trafficked highways.

ARGUMENT

I. SANDAG Ignores the Historically Disadvantaged Families that Live along Highways and Suffer Disproportionately from Illnesses Due to Traffic-Related Air Pollution.

Children in the San Diego region face substantial health risks from roadside air pollution. A child sitting in a classroom, playing in a park, or sleeping in his or her home within 1,000 feet of a busy road will breathe in elevated levels of vehicle-related air pollutants.[1] Heavily-trafficked roads create an air pollution corridor, essentially a strip much wider than the road itself filled with vehicle emissions. The only visible evidence of these pollutants is the haze over a busy freeway and the buildup of black soot on the sides of nearby houses. These pollutants,

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[1] Yifang Zhu et al., *Concentration and Size Distribution of Ultrafine Particles Near a Major Highway*, 52 J. AIR & WASTE MGMT. ASS'N, 1032, 1032-104 (2002), *available at* http://www.ncbi.nlm.nih.gov/pubmed/12269664 (finding that pollutant levels are elevated until 300 meters – about 1,000 feet – from the roadway).

invisible to the naked eye, "can avoid many of the human respiratory system defense mechanisms and enter deeply into the lung." AR 8a:2252, 2217. As a result, breathing this roadside air has been linked to "adverse impacts on health."[2] AR 8a:2218. These adverse health impacts include asthma, reduced lung development, "respiratory symptoms, cancer, and death."[3] *See also* AR 8a:2218 ("a growing body of scientific evidence shows that living or going to school near roadways with heavy traffic volumes is associated with a number of adverse effects," including "increased respiratory symptoms, increased risk of heart and lung disease, and elevated mortality rates").

Among these diseases, asthma perhaps best illustrates how a chronic illness can devastate a family. An asthmatic child suffers from "recurrent flares or exacerbations of breathlessness, wheezing, coughing, and chest tightness."[4] These symptoms,

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[2] CAL. AIR RES. BD., TRAFFIC POLLUTION AND CHILDREN'S HEALTH: REFINING ESTIMATES OF EXPOSURE FOR THE EAST BAY CHILDREN'S RESPIRATORY HEALTH STUDY, vii, 11 (2004), *available at* http://www.arb.ca.gov/research/apr/past/03-327.pdf.

[3] *Id.* at vii.

[4] CAL. DEP'T OF PUB. HEALTH, THE BURDEN OF ASTHMA IN CALIFORNIA: A SURVEILLANCE REPORT 7 (2007) [hereinafter "Asthma Burden"], *available at*

while generally mild, are sometimes life-threatening, leading to 1.8 million emergency room visits[5] and 3,613 deaths[6] nationwide per year. These symptoms strike more often in asthmatic people near highways, where children face a "significant increase of 5 to 8 percent in bronchitis and asthma symptoms." AR 8a:2219.[7] Roadside air pollution also intensifies the severity of asthma attacks. Hospitalization is required more often for asthmatic children living within an air pollution corridor.[8] Because of the

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http://www.cdph.ca.gov/programs/CABreathing/Documents/AsthmaBurdenReport.pdf.

[5] CTRS. FOR DISEASE CONTROL AND PREVENTION, NATIONAL HOSPITAL AMBULATORY MEDICAL CARE SURVEY: 2010 EMERGENCY DEPARTMENT SUMMARY TABLES tbl.12 (2010), *available at* http://www.cdc.gov/nchs/data/ahcd/nhamcs_emergency/2010_ed_web_tables.pdf.

[6] Melonie Heron et al., *Deaths: Final Data for 2006*, 57 NAT'L VITAL STATS. REPS. tbl.10, 11 (2009), *available at* http://www.cdc.gov/NCHS/data/nvsr/nvsr57/nvsr57_14.pdf.

[7] Other studies corroborate this finding. *See, e.g.*, Rob McConnell et al., *Traffic, Susceptibility, and Childhood Asthma*, 114 ENVTL. HEALTH PERSPS.766 (2006) (cited at AR 8a:2220), *available at* http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1459934 (finding increased risk of asthma and wheezing within 245 feet of freeway).

[8] Shao Lin et al., *Childhood Asthma Hospitalization and Residential Exposure to State Route Traffic*, 88 ENVTL. RES. 73 (2002) (cited at AR 8a:2220), *available at*

highly localized nature of this pollution problem, this corridor-specific pollution – and the ensuing frequency and severity of asthma attacks – exists even in areas with otherwise healthy air.[9] Unfortunately, asthma is a chronic disease and has no known cure. It requires a lifetime of symptom management – visiting the doctor regularly, taking costly medication, and curtailing daily activities to limit exposure to triggers like air pollution.

Yet a child cannot avoid such triggers if her family does not have the means to relocate or if she attends one of the 173 California public schools within 500 feet of busy roads.[10] Back in

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http://www.ncbi.nlm.nih.gov/pubmed/11908931 (finding increased asthma hospitalizations for children living within 650 feet of heavy traffic).

[9] Janice J. Kim et al., *Traffic-related Air Pollution Near Busy Roads: the East Bay Children's Respiratory Health Study*, 170 AM. J. RESPIRATORY & CRITICAL CARE MED. 520 (2004) (cited at AR 8a:2220), *available at* http://www.ncbi.nlm.nih.gov/pubmed/15184208 (finding that proximity to traffic was associated with increased asthma and bronchitis symptoms even though regional air quality was good overall).

[10] Rochelle S. Green et al., *Proximity of California Public Schools to Busy Roads*, 112 ENVTL. HEALTH PERSPS. 61 (2004), *available at* http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1241798.

[11] S.B. 352, 2003 Sen., Reg. Sess. (Cal. 2003).

2003, the California legislature recognized this problem and limited the siting of new schools within 500 feet of busy traffic corridors, declaring the following:

> Much of the pollution from freeways is associated with acute health effects, exacerbating asthma and negatively impacting the ability of children to learn. . . . A disproportionate number of economically disadvantaged pupils may be attending schools that are close to busy roads, putting them at an increased risk of developing bronchitis from elevated levels of several pollutants associated with traffic.[11]

For a poor family, asthma can be economically devastating. Hospital visits bring lost schooldays, not to mention medical bills. In 2005, a single asthma-related hospitalization cost, on average, $23,953.[12] That same year a four-person household at the poverty line only earned $19,350.[13] Plainly, that household could not afford a single asthma hospitalization, let alone multiple hospital visits within a year. As of 2005, over 4.5 million

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[11] S.B. 352, 2003 Sen., Reg. Sess. (Cal. 2003).

[12] Asthma Burden, *supra* note 4, at 82.

[13] The 2005 HHS Poverty Guidelines, U.S. Dep't of Health & Human Services, http://aspe.hhs.gov/poverty/05poverty.shtml (last visited Jan. 31, 2014).

Californians, or 13.3 percent of the state population, lived below the poverty line.[14] Hospital visits also bring lost work days for a parent caring for the child. And a staggering one-third of asthmatic adults in California miss work due to their own symptoms.[15] Lost wages alone can push families even deeper into poverty.

The burden of air pollution-triggered asthma disproportionately falls on children in low-income communities and communities of color because "racial segregation, concentrated poverty, and uneven land use development" route traffic through these communities.[16] In California, children living in low-income households (median income less than $30,000) are three times more likely to live near busy roads than are occupants of other households (median income more than

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14 BRUCE H. WEBSTER JR. & ALEMAYEHU BISHAW, U.S. CENSUS BUREAU, INCOME, EARNINGS, AND POVERTY DATA FROM THE 2005 AMERICAN COMMUNITY SURVEY 9 tbl.4 (2006), *available at* https://www.census.gov/prod/2006pubs/acs-02.pdf.

15 Asthma Burden, *supra* note 4, at 30.

16 Douglas Houston et al., *Structural Disparities of Urban Traffic in Southern California: Implications for Vehicle-Related Air Pollution Exposure in Minority and High-Poverty Neighborhoods*, 26 J. URBAN AFFAIRS 565, 566 (2004), *available at* http://www.environment.ucla.edu/media/files/doug_Urban_Traffic.pdf.

$54,000).[17] Similarly, minority children are three times more likely to live near busy roads.[18] As a consequence, children living in these disadvantaged neighborhoods are at far greater risk of health-related roadside pollution impacts than the general population.

Public health statistics confirm this link between poverty, race and asthma, with three times more asthma hospitalizations for poor people (median income less than $20,000) as compared to those in or above the middle class (median income greater than $50,000). Even more grim, "poor and minority individuals tend to have higher rates of asthma prevalence, hospitalization, and mortality."[19]

This bleak picture extends to other illnesses as well. Traffic-related pollutants stunt lung development in children,

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[17] Robert B. Gunier et al., *Traffic density in California: Socioeconomic and Ethnic Differences Among Potentially Exposed Children*, 13 J. EXPOSURE ANALYSIS & ENVTL. EPIDEMIOLOGY 240 (2003), *available at* http://www.ncbi.nlm.nih.gov/pubmed/12743618.

[18] *Id.*

[19] Houston, *supra* note 16, at 568.

decreasing lung function and the ability to breathe.[20] Such compromised lung function is permanent; a child living in a traffic pollution corridor will likely "continue to have less than healthy lung function for the remainder of his or her life." AR 8a:2220. Long-term exposure to traffic-related air pollution can also shorten life expectancy due to heart disease.[21]

These impacts even extend *in utero*. A pregnant woman living near a busy roadway is more likely to give birth to a premature or low-birth weight baby.[22] The medical cost for pre-term baby's initial hospitalization averaged $15,100 dollars in

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[20] B. Brunekreef et al., *Air Pollution From Truck Traffic and Lung Function in Children Living Near Motorways*, 8 EPIDEMIOLOGY 298 (1997) (cited at AR 8a:2220), *available at* http://www.ncbi.nlm.nih.gov/pubmed/9115026; W.J. Gauderman et al., *Effect of Exposure to Traffic on Lung Development from 10 to 18 Years of Age: A Cohort Study*, 369 LANCET 571 (2007) (described in detail at AR 8a:2220), *available at* http://www.ncbi.nlm.nih.gov/pubmed/17307103.

[21] G. Hoek et al., *Association Between Mortality and Indicators of Traffic-Related Air Pollution in the Netherlands: A Cohort Study*, 360 LANCET 1203 (2002), *available at* http://www.ncbi.nlm.nih.gov/pubmed/12401246.

[22] Michelle Wilhelm & Beate Ritz, *Residential Proximity to Traffic and Adverse Birth Outcomes in Los Angeles County, California, 1994-1996*, 111 ENVTL. HEALTH PERSPS. 207 (2003), *available at* http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1241352.

2001,[23] and more hospital visits could follow. Children living near pollution corridors also face higher rates of leukemia and other cancers.[24] Diesel vehicle emissions alone caused 2,200 of the cancer cases in the San Diego air basin in 2000.[25] And like the race-correlated asthma statistics, a person of color is more than twice as likely as a white person to live in a high cancer-risk neighborhood.[26]

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[23] Rebecca B. Russel et al., *Cost of Hospitalization for Preterm and Low Birth Weight Infants in the United States*, 120 PEDIATRICS e1 (2007), *available at* http://pediatrics.aappublications.org/content/120/1/e1.long.

[24] R.L. Pearson et al., *Distance-weighted traffic density in proximity to a home is a risk factor for leukemia and other childhood cancers*, 50 J. AIR & WASTE MGMT. ASS'N 175 (2000), *available at* http://www.researchgate.net/publication/12635811_Distance-weighted_traffic_density_in_proximity_to_a_home_is_a_risk_factor_for_leukemia_and_other_childhood_cancers (finding that children living within 750 feet of highways with over 20,000 vehicles per day are six times more likely to develop cancer and eight times more likely to develop leukemia).

[25] The ARB calculated individual risk at 720 cases of cancer per million caused by diesel exhaust multiplied by approximately 3 million people living in the San Diego air basin. AR 8a:2218.

[26] Rachel Morello-Frosch et al., *Environmental Justice and Southern California's "Riskscape": The Distribution of Air Toxics Exposures and Health Risks among Diverse Communities*, 36 URBAN AFFAIRS REV. 551, 564-65 (2001), *available at* http://uar.sagepub.com/content/36/4/551.abstract (analyzing air pollutant concentrations throughout southern California and comparing demographics to cancer risk of pollutants in the area).

Against the backdrop of this well-established scientific consensus, SANDAG, in its Environmental Impact Report ("EIR") for the 2050 Plan, claims that low-income families of color experience the *same* traffic-related health impacts as the rest of the population. AR 8a:2255. Yet SANDAG provides no further information or analysis of air pollution impacts in the "Environmental Justice" chapter of the EIR to support this conclusion. AR 8a:2442-85, 3342-43. As we explain in Section III below, there is no supporting analysis in the "Air Quality" chapter either.[27]

II. Planning Agencies Similar to SANDAG Have Addressed Public Health Impacts on Vulnerable Communities in Their Regional Transportation Plans.

While SANDAG was developing its Plan, other regional planning agencies in California were also creating comparable long-term regional transportation plans. Declaration of Janill L.

[27] The 2050 Plan EIR includes regional maps that show anticipated roadway expansions over the next 40 years. AR 8a:2256, 2257, 2260, 2263. Apparently because highway projects ultimately will blanket the region, SANDAG believes that all communities, regardless of socioeconomic status or ethnicity, will be equally affected by air pollution impacts – and equally benefited by transportation improvements. Neither belief is justified by such a superficial approach.

Richards in Support of People's Conditional Motion for Judicial Notice ("Richards Decl.") ¶¶ 4,7. Two of these sister agencies have planning authority over greater geographic areas, larger populations, and more complex transportation systems – the Metropolitan Transportation Commission and the Association of Bay Area Governments (collectively referred to as "ABAG") and the Southern California Association of Governments ("SCAG"). Unlike SANDAG, both ABAG and SCAG meaningfully assessed health risks in their respective plan-level EIRs, specifically addressing impacts on communities living near busy roads and highways. *See* Richards Decl., Exhibit C (EIR for ABAG), Exhibit A and B (EIR for SCAG) (hereinafter "People's Exhibits"). Both agencies studied heavily-trafficked corridors and relied on other agencies' data and modeling to disclose and communicate the impacts of localized traffic-related air pollution on roadside communities. *See* People's Exhibit A at 3.2-27 to -30; People's Exhibit C at 2.2-26 to -27. Their analyses demonstrate the feasibility of addressing health impacts from traffic-related air pollution in regional transportation plans.

ABAG's plan EIR focused on, and helpfully designated on a map, those corridors near major transit stops throughout the Bay

Area where ABAG anticipated the lion's share of housing and job growth. People's Exhibit C at 2.2-19 to -22. ABAG relied on the Bay Area Air Quality Management District for its emissions data as well as cancer risk and particulate matter estimates within 1,000 feet of high development corridors. *Id*. at 2.2-22. ABAG also included its own data from a travel forecasting model for heavily-trafficked roads within 1,000 feet of schools and day care facilities. *Id*. at 2.2-26. ABAG fed that information into a geospatial software mapping tool, identifying precisely *where* the cumulative cancer risks and particulate matter concentrations exceeded its air quality significance criteria. *Id*. at 2.2-22 to -23. ABAG then took the additional step of correlating those areas of concentrated pollution to six vulnerable "CARE" communities, defined as heavily polluted areas where sensitive receptors like youth and seniors live and where over 40 percent of the population lives below the federal poverty line. *Id*. at 2.2-24 to -26.

Altogether, ABAG determined that its plan will result in an increase to sensitive receptors in cancer-risk zones. *Id*. at 2.2-26. ABAG also disclosed that CARE communities will "experience an increase in emissions while non-CARE communities will experience either a smaller increase or a decrease in those emissions. This disproportionate effect in CARE communities would result in a potentially significant impact." *Id.* at 2.2-26 to -27.

In its plan EIR, SCAG employed a similar approach, studying several of its busiest freeway corridors as representative of worst case scenarios. People's Exhibit A at 3.2-26. SCAG analyzed a total of eight segments and quantitatively modeled increased cancer risk from exposure to transportation-related air pollution for each of the segments. *Id.* at 3.2-26 to -27. SCAG forecasted traffic volumes and used modeling systems from the U.S. Environmental Protection Agency and the California Air Resources Board, among others, to analyze hot spots for cancer risk. *Id.* at 3.2-27.

SCAG then synthesized and translated this information into public health impacts and determined the actual cancer risk and chronic and acute non-cancer health risks from exposure to vehicle emissions. *Id.* at 3.2-27 to -29, People's Exhibit B at 4-47 to -49. And it did so for each segment. SCAG also provided meaningful distance markers from the roadway at which cancer risks are reduced by 50 and 90 percent. People's Exhibit A at 3.2-30.

ABAG's and SCAG's analyses put any feasibility questions to rest. Faced with the same or larger sprawling urban regions, both agencies successfully linked forecasted emissions to localized community health impacts, and they did so at the program planning stage. The refreshing candor of these two agencies throws SANDAG's elusiveness into sharp relief.

III. SANDAG Fails to Analyze its Plan's Significant Health Impacts on the Vulnerable Communities Living Near Highways.

In contrast to the accomplishments of its peer agencies, SANDAG fails to meaningfully analyze the 2050 Plan's human health impacts on those living in the San Diego region, on sensitive receptors (*e.g.*, schools, hospitals, etc.), on minority or low-income communities, or on any other vulnerable populations. While SANDAG does conclude that the Plan will have significant air quality impacts, it never links that significant impact finding to any health effect like cancer or respiratory risks. In so doing, SANDAG abandons its duty to provide clear information to decision-makers and those community members most vulnerable to the Plan's impacts.

Unlike the very localized and specific analysis performed by ABAG and SCAG, SANDAG provides unhelpful generalized information. The draft EIR contained only vague, conclusory statements like "[l]ocalized concentrations of some criteria pollutants and toxics would result in a significant impact if receptors sensitive to these pollutants (i.e., children and the elderly) are exposed to (i.e., in proximity to) substantial concentrations of these pollutants" and "CO hotspots may occur on major roadways at severely congested intersections." AR 8a:2249. In response to substantial public comment about the paucity of air pollution-related health impact analysis in the draft EIR, SANDAG attempted to "beef up" the document by reciting the known science. For instance the final EIR recognizes that toxic air pollutants "may pose a threat to public health even at low concentrations due to their high toxicity," AR 8a:2251, that "there are no exposure levels that are considered safe," *id.*, and that "[d]iesel exhaust causes health effects from both short-term or acute exposures, and long-term exposures." AR 8a:2252. Such non-specific statements provide little meaningful information to the public or local decision-makers.

The one-page "Localized Air Quality Index Analysis" added to the final report does nothing to address these disclosure defects and, despite its label, provides neither localized, corridor-specific information nor air quality information. At best, this "analysis" amounts to a traffic index, with daily traffic volumes, truck numbers, and gridlock data used to loosely rank the risk associated with (unspecified) freeway segments as high, medium or low. AR 8a:2253. The analysis provides no air pollutant levels and does not even explain how its high/medium/low rankings correlate to any particular location or community. Thus, the EIR does not disclose localized air pollution impacts or associated public health risks. It is hardly surprising that SANDAG concludes each scenario section (2020, 2035, and 2050) with a variant of: "the level of exposure of sensitive receptors to localized pollutant concentrations, including diesel particulates, can only be determined through project-level analysis." AR 8a:2258, 2261, 2264.

The EIR's discussion of impacts on low income and minority neigborhoods is even more superficial and problematic. At a generalized level, the EIR concludes that over time, more communities will move into the "high" risk category from the "low" and "medium" risk categories due to the completion of highway projects during the first few decades of the Plan. AR 8a:2255. The document then purports to compare impacts on Low Income and Minority ("LIM") communities against impacts on other communities, concluding that "this analysis generally suggests that both LIM and non-LIM communities will potentially be exposed to increases in localized CO and PM concentrations" and that "the potential for increased impacts to both LIM and non-LIM communities over time is similar and there is not a disparate impact on LIM communities when compared to non-LIM communities." *Id.* But the EIR contains absolutely no comparative analysis of localized impacts to support this sweeping conclusion. The fact that all residents of San Diego will face a higher air pollution burden over time due to the expansion of highways across the region tells us nothing about the increased health risk faced by those disproportionately exposed (and historically disadvantaged) populations living within 1,000 feet of highway corridors.

Indeed, SANDAG's "fact-less" analysis of comparative impacts is contradicted by myriad scientific studies, a handful of which are discussed above. SANDAG has neither addressed this overwhelming evidence nor offered specific regional data to refute it. Then, to add insult to injury, the Environmental Justice chapter of the EIR ignores air pollution-related health impacts entirely. AR 8a:2442-44, 2450-55, 2583-85 (excerpts from environmental justice chapter in EIR).[28]

SANDAG's peer agencies did not defer their analyses to later projects. Both ABAG and SCAG dealt with regional plans, data gaps, over-prediction problems, and scientific uncertainty. They overcame these hurdles by taking a corridor-specific approach and leaning on the data and expertise of sister agencies. Unlike SANDAG, neither agency asserted that the size of their regional plan precluded an analysis of health impacts. Even a report for the American Association of State Highway and Transportation Officials remarked that "[m]odeling tools are

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[28] In addition to ignoring air pollution-related impacts on disadvantaged communities, the EIR's assessment of "mobility benefits" here was flawed because it focused on the distribution of transportation spending across geographically disbursed neighborhoods, not on the key question of whether these expenditures would actually benefit members of disadvantaged communities or would merely fund projects that pass through their neighborhoods. *See* ELLIOT ROSE, AUTUMN BERNSTEIN & STUART COHEN, SAN DIEGO AND SB 375: LESSONS FROM CALIFORNIA'S FIRST SUSTAINABLE COMMUNITIES STRATEGY 18 (Dec. 1, 2011), *available at* http://www.climateplan.org/wp-content/uploads/2011/12/SD-Report-FINAL-12-14-11-lowres.pdf.

widely available that are capable of predicting [transportation-related toxic air pollutant] impacts from transportation projects."[29] Not only is a meaningful assessment of air pollution-related health risks feasible at a plan-level EIR, it is essential to informed decision-making.

IV. SANDAG Must Analyze and Disclose the Link Between Air Pollution and Public Health Impacts at the Plan Level.

A. SANDAG Must Assess Plan-Level Health Risks in Order to Inform the Design of Plan-Level Alternatives.

Plan-level review allows an agency a "more exhaustive consideration of effects and alternatives than would be practical" in a project EIR and "at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts." Cal. Code Regs., tit. 14, § 15168(b). As this provision of the CEQA Guidelines recognizes, mitigation for and alternatives

[29] EDWARD L. CARR ET. AL., ICF INTERNATIONAL, ANALYZING, DOCUMENTING, AND COMMUNICATING THE IMPACTS OF MOBILE SOURCE AIR TOXIC EMISSIONS IN THE NEPA PROCESS, *prepared for* AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS 1, 2, 4, 7-11 (2007), *available at* http://onlinepubs.trb.org/onlinepubs/archive/NotesDocs/25-25(18)_FR.pdf (providing recommendations to state transportation departments on analyses of transportation-related toxic air pollutants' impacts in the NEPA context).

to a regional plan for the entire San Diego air basin can only be meaningfully evaluated at the plan level. SANDAG's 2050 Plan contemplates hundreds of projects implemented over 40 years by multiple agencies and local governments. Developing such a plan requires "integrating land use, housing, and transportation planning," AR 190a:13064, as does the creation of an alternative with fewer environmental impacts. Only the plan level, not individual project review, provides a context where this integration is possible.

Once a regional plan is approved, a later project EIR cannot realistically consider alternatives. That is, the Plan's preference for highway expansion over public transit options will not be reevaluated at the individual project level, where the focus of environmental review is on the project's direct impacts and on potential measures for lessening those impacts. When Caltrans or the Federal Highway Administration considers funding for a highway expansion project, for example, it simply will not seriously consider constructing a light rail system instead. Not only would it be practically impossible, but later implementing projects must be consistent with an adopted regional transportation plan. *See* AR 8a:2995 ("Any transportation projects funded with federal, state funds or by [a SANDAG operated] Ordinance must be included in an approved [regional plan]."); 23 U.S.C. § 134(j)(1)(A)(i) (projects must be consistent with the larger plan for the area). Once a community is slated for a highway expansion, the increased air pollution and related health risks are inevitable. Thus, full disclosure of those impacts, and their distribution across historically disadvantaged and disenfranchised communities, must occur at the regional plan level if decision-makers and the public are to make informed choices.

SANDAG's EIR does not provide enough analysis to inform its decision-makers about alternatives that could avoid impacts on the low-income families of color most at risk from a highway-dependent plan. As one commenter observes, the Plan "extensively relies on increases in highway capacity," AR 320:27700-01, and "continues the region's long-term dependence on the automobile," AR 296:19678. At the later project level, it will be too late. By then, the Plan's expanded system of highways will be set in stone.

B. SANDAG Defers the Plan's Health Risk Assessment to the Project Level, but that Project Assessment is Not Being Done.

SANDAG's justification for (improperly, under CEQA) deferring analysis of pollutant levels and related health risks in its programmatic EIR turns on its claim that such impacts "would be addressed at the project level" and that the exposure of sensitive receptors "can only be determined through project-level analysis." AR 8a:2254-55, 2258; *see also* AR 8a:2259, 2262. However, the deferred analysis has not been performed as promised.

The first major project implementing SANDAG's 2050 Plan, a multi-lane expansion of Interstate 5 along the San Diego coast, was recently approved without the promised site-specific analysis. The project EIR does several things. It illustrates average daily traffic patterns along various segments of the project and estimates truck traffic. Amici's Exhibit 1 at 3.14-16 to -17. It identifies the daily and peak period vehicle miles traveled in the project area. *Id.* at 3.14-21. It also provides the change in particulate pollution, and other toxic emissions, resulting from the project. *Id.* at 3.14-18; 3.14-21.

More important, though, is what the project EIR does not do. The project EIR does not take that traffic and emissions data and measure the actual levels of pollution and their health effects on sensitive receptors and vulnerable communities. The closest the project EIR comes is its list of schools, hospitals, parks, and nursing homes near Interstate 5. Amici's Exhibit at 3.14-8 to -12. While the list was a promising first step, the project EIR stops there, conceding what is already apparent – that the potential impacts on these schools and parks "are of particular concern." *Id.* at 3.14-7.

Just expressing concern, however, does not constitute a public health impact analysis or risk assessment. Nowhere is there mention, let alone analysis, of known health risks like asthma and cancer; the reader learns only that there are sensitive receptors in harm's way, not what health impacts they may suffer as a result of their proximity to Interstate 5. A number of vulnerable communities are identified in the environmental justice section, Amici's Exhibit at 3.4-21 to -36, but again, identification of vulnerable populations is just the first step. A project EIR must, and here failed to, map likely health effects onto the identified vulnerable communities.

The Interstate 5 project EIR, in fact, echoes SANDAG's justifications for its failure to provide a public health risk assessment, pointing to "uncertainties associated with predicting impacts," Amici's Exhibit at 3.14-28, and noting that "many questions remain unanswered," *id.* at 3.14-25. Ironically, like SANDAG's claim that its Plan is too big to analyze, this first major project EIR claims that its project is too small to analyze. *Id.* at 3.14-18, 3.14-28 (refusing to do a hot spots analysis because ratio of diesel trucks is not increased and refusing to predict health impacts of other pollutants because difference between alternatives may be small). This claim is untrue on its face. *See, e.g.*, *id.* at 3.14-21 (showing increases in unsafe-at-any-level toxic pollutants over the "No Build" scenario).

In any event, whatever the merits of the Interstate 5 expansion project, its environmental review documents reveal two truths. First, the kind of localized health risk assessment required to truly understand impacts on the most directly affected, and often most vulnerable, neighborhoods will not necessarily be done. And second, even if that assessment is completed at the project level, it is much too late by then for the agencies funding and implementing such major transportation projects to meaningfully consider public transit or other alternatives. The kind of comprehensive public health and distributional justice analysis necessary for the public and decision agencies to make fully informed choices among alternatives can only happen – and must happen – in the plan-level EIR.

CONCLUSION

For the foregoing reasons, Amici respectfully request that this Court direct the trial court to enter a revised judgment and writ in light of the EIR's failure to adequately analyze the Plan's air quality impacts on the families who live along the highways.

Dated: Feb. 4, 2014 Respectfully submitted,

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CERTIFICATE OF WORD COUNT

Pursuant to California Rules of Court 8.204(c), I certify that the text of this brief consists of 5,191 words, not including tables of contents and authorities, signature block, and this certificate of word count as counted by Microsoft Word, the computer program used to prepare this brief.

Dated: February 4, 2014 By: ____________________________

Deborah A. Sivas

Case No. D063288

IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA
FOURTH APPELLATE DISTRICT, DIVISION ONE

CLEVELAND NATIONAL FOREST FOUNDATION, et al.

Petitioners, Respondents and Cross-Appellants,

v.

SAN DIEGO ASSOCIATION OF GOVERNMENTS, et al.

Respondents and Appellants.

PEOPLE OF THE STATE OF CALIFORNIA,

Intervener, Respondent and Cross-Appellant.

Appeal from a Judgment Entered in Favor of Petitioners
San Diego County Superior Court
Case No. 37-2011-00101593-CU-TT-CTL
Consolidated with Case No. 37-2011-00101660-CU-TT-CTL
Honorable Timothy B. Taylor, Judge

DECLARATION OF JASON S. GEORGE IN SUPPORT OF BRIEF OF AMICI CURIAE CENTER ON RACE, POVERTY & THE ENVIRONMENT, COMMUNITIES FOR A BETTER ENVIRONMENT, ENVIRONMENTAL HEALTH COALITION, and PHYSICIANS FOR SOCIAL RESPONSIBILITY–L.A. IN SUPPORT OF CROSS-APPELLANTS

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DECLARATION OF JASON S. GEORGE

I, Jason S. George, declare:

1. I am a certified law student pursuant to California's Rules Governing the Practical Training of Law Students Title 3, Rule 3.4, under the supervision of Deborah A. Sivas, Professor of Law at Stanford Law School, and a licensed attorney in the State of California. I will remain certified through July 31, 2015. I am representing the interests of Amici Curiae Center on Race, Poverty & the Environment, Communities for a Better Environment, Environmental Health Coalition, and Physicians for Social Responsibility – Los Angeles in support of Cross-Appellants.

2. I have personal knowledge of the matters set forth in this declaration, and if called upon these matters, I could and would testify.

3. Attached hereto as Exhibit 1 is a true and correct copy of relevant excerpts from the Final Environmental Impact Report ("EIR") for the Interstate 5 North Corridor Project dated October 2013, prepared by the U.S. Department of Transportation Federal Highway Administration and the State of California Department of Transportation.

4. I obtained these documents by accessing the State of California Department of Transportation website at http://www.dot.ca.gov/dist11/Env_docs/I-5NCCFinal.html.

5. The EIR's purpose is to analyze the environmental impacts of the first project to be implemented from the San Diego Association of Governments 40-year Regional Transportation Plan ("Plan"). It provides relevant information for what environmental impact analysis has actually been performed in a project implementing the Plan.

I declare under penalty of perjury that the foregoing is true and correct and that I executed this declaration on February 4, 2014, in Stanford, California.

By: Jason George

Jason S. George

EXHIBIT 1

Interstate 5 North Coast Corridor Project

SAN DIEGO COUNTY, CALIFORNIA
DISTRICT 11–SD –5 (PM R28.4/R55.4)
EA 235800 (P ID 1100000159)

Final
Environmental Impact Report/
Environmental Impact Statement
and Section 4(f) Evaluation

N·O·R·T·H C·O·A·S·T
INTERSTATE 5 CORRIDOR

Prepared by
U.S. Department of Transportation
Federal Highway Administration
and
State of California Department of Transportation

October 2013

3.14 Air Quality

The 8+4 Buffer alternative has been refined since the Draft EIR/EIS was publically circulated in 2010. This alternative was presented as the locally preferred alternative (LPA) in the August 2012 Supplemental Draft EIR/EIS, and has now been identified as the Preferred Alternative. The refined 8+4 Buffer alternative has the least amount of impact of any build alternative and also meets purpose and need.

3.14.1 Regulatory Setting

The federal Clean Air Act (FCAA), as amended in 1990, is the federal law that governs air quality while the California Clean Air Act of 1988 is its companion State law. These laws, and related regulations by the U.S. Environmental Protection Agency (USEPA) and California Air Resources Board (CARB), set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and State ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns. The criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM) broken down for regulatory purposes into particles of 10 micrometers or smaller(PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$), lead (Pb), and sulfur dioxide (SO_2). In addition, State standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and State standards are set at a level that protects public health with a margin of safety, and are subject to periodic review and revision. Both State and federal regulatory schemes also cover toxic air contaminants (air toxics). Some criteria pollutants are also air toxics or may include certain air toxics within their general definition.

Federal and State air quality standards and regulations provide the basic scheme for project-level air quality analysis under NEPA and CEQA. In addition to this type of environmental analysis, a parallel “Conformity” requirement under the FCAA also applies.

The FCAA Section 176(c) prohibits the USDOT and other federal agencies from funding, authorizing, or approving plans, programs, or projects that are not first found to conform to the State Implementation Plan (SIP) for achieving the FCAA requirements related to the NAAQS. “Transportation Conformity” Act takes place on two levels: the regional—or planning and programming—level and the project level. The proposed project must conform at both levels to be approved. Conformity requirements apply only in nonattainment and “maintenance” (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. USEPA regulations at 40 CFR 93 govern the conformity process.

Regional level conformity is concerned with how well the regional transportation system supports plans for attaining the standards set for CO, NO_2, O_3, $PM_{10,}$ and $PM_{2.5}$, and in some areas, SO_2. California has nonattainment or maintenance areas for all of these transportation-related “criteria pollutants” except $SO_{2;}$ the State also has a nonattainment area for Pb. However, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on Regional Transportation Plans (RTPs) and federal Transportation Improvement Programs (TIPs) that include all of the transportation projects planned for a region over a period of at least 20 years for the RTP, and 4 years for the TIP. RTP and TIP conformity is based on use of travel demand and air quality models to determine whether or not the implementation of those projects would conform to emission budgets or other tests showing that requirements of the Clean Air Act and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway Administration (FHWA), and Federal Transit Administration (FTA), make determinations that the RTP and TIP are in conformity with the SIP for achieving the goals of the Clean Air Act. Otherwise, projects in the RTP and/or TIP must be modified until conformity is attained. If the design, scope, and open to traffic schedule of a proposed transportation project are the same as described in the RTP, then the proposed project is deemed to meet regional conformity requirements for purposes of project-level analysis.

As noted in Chapter 1 of this Final EIR/EIS, SANDAG has approved the 2050 RTP, although on December 20, 2012, the San Diego Superior Court entered a judgment finding that the EIR for the 2050 RTP is legally inadequate in certain limited respects. The EIR for the 2050 RTP was invalidated mainly because it allegedly: (1) failed to adequately analyze greenhouse gas (GHG) emissions against Executive Order S-03-05 requirements to reduce GHG emissions 80 percent below 1990 levels by 2050; and (2) failed to identify sufficient legally enforceable mitigation measures for GHG emissions. SANDAG has appealed the judgment to the Court of Appeal. This Final EIR/EIS has been drafted to avoid the narrow alleged deficiencies the Court found in the EIR for the 2050 RTP.

FHWA and Caltrans' environmental analysis for the *I-5 NCC Project* EIR/EIS may draw on facts from the EIR for the 2050 RTP; but it does not tier from the 2050 RTP EIR or rely on the EIR's certification. The project would be constructed by 2035 and includes specific, enforceable mitigation measures for GHG emissions.

Conformity at the project-level also requires "hot spot" analysis if an area is designated as "nonattainment" or "maintenance" for CO and/or PM_{10} or $PM_{2.5}$. A region is "nonattainment" if one or more monitoring stations in the region fail to attain the relevant standard, and USEPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially redesignated to attainment by the USEPA, and are then called "maintenance" areas. "Hot spot" analysis is essentially the same, for technical purposes, as a CO or PM analysis performed for NEPA purposes. Conformity does include some specific procedural and documentation standards for projects that require a "hot spot" analysis. In general, projects must not cause the "hot spot"-related standard to be violated, and must not cause any increase in the number and severity of violations. If a known CO or PM violation is located in the project vicinity, the project must include measures to reduce or eliminate the existing violation(s) as well.

It should also be noted that new federal standards include a one-hour NAAQS for NO_2 of 100 parts per billion (ppb), while retaining the existing annual standard of 53 ppb. The new one-hour standard was based on observations by USEPA that roadway-associated exposures account for a majority of ambient exposures to peak NO_2 concentrations. Associated monitoring is required to be implemented and operational by January 1, 2013. After three years of monitoring are completed, the USEPA will evaluate the associated data and redesignate individual areas as appropriate for NAAQS attainment or non-attainment status.

3.14.2 Affected Environment

This section is based on the Air Quality Analysis for the I-5 North Coast Project, prepared in August 2007.

The proposed project is located in the San Diego Air Basin (SDAB), which is within San Diego County. The climate of San Diego County is characterized by warm, dry summers and mild, wet winters. One of the main determinants of the climatology is a semi permanent high-pressure area (the Pacific High) in the eastern Pacific Ocean. In the summer, this pressure center is located well to the north, causing storm tracks to be directed north of California. This high-pressure cell maintains clear skies for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low-pressure storms are brought into the region, causing widespread precipitation. In San Diego County, the months of heaviest precipitation are November through April, averaging about 9 to 14 in annually. The mean temperature is 62.2°F, and the mean maximum and mean minimum temperatures are 75.7°F and 48.5°F, respectively.

The Pacific High also influences the wind patterns of California. The predominant wind directions are westerly and west-southwesterly during all four seasons, and the average annual wind speed is 5.6 mph.

A common atmospheric condition known as a temperature inversion affects air quality in San Diego. During an inversion, air temperatures get warmer rather than cooler with increasing height. Subsidence inversions occur during the warmer months (May through October) as descending air associated with the Pacific High comes into contact with cooler marine air. The boundary between the layers of air represents a temperature inversion that traps pollutants below it. The inversion layer is approximately 2000 ft AMSL during the months of May through October. However, during the remaining months (November through April), the temperature inversion is approximately 3000 ft AMSL. Inversion layers are important elements of local air quality because they inhibit the dispersion of pollutants, thus resulting in a temporary degradation of air quality.

3.14.3 Environmental Consequences

Regional Air Quality Conformity

The proposed project is fully funded in the 2030 RTP. The proposed project is also listed in the 2050 financially constrained RTP, which was found to conform by SANDAG on October 28, 2011. The FHWA and FTA made a regional conformity determination on December 2, 2011. The project is included in SANDAG's financially constrained 2012 RTIP, page 33. The SANDAG 2012 RTIP was adopted by the SANDAG Board on September 28, 2012, and was determined to conform by FHWA and FTA on December 14, 2012. The design concept and scope of the proposed project is also generally consistent with the project description in the 2030 RTP, and the 2010 RTIP, and the "open to traffic" assumptions of the SANDAG's regional emissions analysis. Therefore, the project is assumed to conform to the SIP and no adverse regional air quality impact would occur as a result of the project.

Project Level Conformity

The FCAA requires the adoption of NAAQS to protect public health and welfare from the effects of air pollution. Current standards are set for SO_2, CO, NO_2, O_3, PM_{10}, fine $PM_{2.5}$, and Pb. State standards have been established by the CARB, and these are generally more stringent than the NAAQS counterparts. Federal and State standards are depicted in *Table 3.14.1*.

Areas are classified by the FCAA as either "attainment" or "nonattainment" for each of the criteria pollutants, based on whether the NAAQS have been met.

The proposed project site is located in the SDAB, which currently meets the federal air quality standards for all of the criteria air pollutants except O_3, as shown in the *Table 3.14.2*. The SDAB was designated as a marginal nonattainment area for the eight-hour O_3 standard in July 2012. The SDAB is designated as a federal maintenance area for CO following its redesignation from the non-attainment to a CO attainment area. *Table 3.14.3* shows the pollutants for which the area has been classified as a federal nonattainment or maintenance area and the number of associated violations within the past three years. State standards currently classify the SDAB area as a "serious-nonattainment" for O_3, and a nonattainment area for $PM_{2.5}$ and PM_{10}.

Ambient air pollutant concentrations in the SDAB are measured at 10 air quality monitoring stations operated by the Air Pollution Control District (APCD). The APCD air quality monitoring station that represents the project area, climate, and topography in the SDAB is the Del Mar-Mira Costa College Monitoring Station. However, the Del Mar-Mira Costa College Monitoring Station only monitors O_3. The next nearest monitoring station is San Diego Beardsley, 1110A Beardsley Street, San Diego, CA 92112. This station monitors CO, NO_X, O_3, PM_{10}, and $PM_{2.5}$. *Table 3.14.4* summarizes the excess of standards and the highest pollutant levels recorded at these stations for the years 2010 and 2012.

Table 3.14.1: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	Federal Standards[2]	
		Concentration[3]	Primary[3,4]	Secondary[3,5]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	–	Same as Primary Standard
	8-Hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	
Respirable Particulate Matter (PM_{10})[6]	24-Hour	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m^3	–	
Fine Particulate Matter ($PM_{2.5}$)[6]	24-Hour	–	35 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	None
	1-Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
Nitrogen Dioxide (NO_2)[7]	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary Standard
	1-Hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	None

Table 3.14.1 (cont.): Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]	Federal Standards[2]	
		Concentration[3]	Primary[3,4]	Secondary[3,5]
Sulfur Dioxide (SO_2)[8]	Annual Arithmetic Mean	–	0.030 ppm (80 µg/m^3) (for certain areas)[8]	–
	24-Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3) (for certain areas)[8]	–
	3-Hour	–	–	0.5 ppm (1300 µg/m^3)
	1-Hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	–
Lead (Pb)[9,10]	30-Day Average	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary Standard
	Rolling 3-Month Average	–	0.15 µg/m^3	
Hydrogen Sulfide (H_2S)	1-Hour	0.03 ppm (42 µg/m^3)	No Federal Standards	
Sulfates (SO_4)	24-Hour	25 µg/m^3		
Visibility Reducing Particles[11]	8-Hour	See footnote 11		
Vinyl Chloride[9]	24-Hour	0.01 ppm (26 µg/m^3)		

1. California standards for O_3, CO (except Lake Tahoe), SO_2 (1 and 24 hour), NO_2, PM_{10}, $PM_{2.5}$, and visibility reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest eight-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact USEPA for further clarification and current federal policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 77°F and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 77°F and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
5. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
6. On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
7. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
8. On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of ppb. California standards are in units of ppm. To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
9. The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
10. National lead standard, rolling 3-month average: final rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
11. In 1989, the CARB converted the general Statewide 10-mile visibility standard to an instrumental equivalent, which is "extinction of 0.23 per kilometer" when the relative humidity is less than 70 percent.

Source: CARB (June 4, 2013)

Table 3.14.2: Federal and State Criteria Pollutant Attainment Status for the San Diego Air Basin

Pollutant	SDAB Attainment Status	
	Federal	State
O_3 – 1 hour	–	Nonattainment
O_3 – 8 hour	Nonattainment - Marginal	Nonattainment
CO	Maintenance	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
PM_{10}	Attainment	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2 –1 hour	Under Evaluation	–

Table 3.14.3: Federal Nonattainment and Attainment/Maintenance Pollutants in the San Diego Air Basin

Pollutant	Federal Attainment Status	Exceedances in the Last 3 Years
O_3 – 8-hour	Nonattainment, Marginal*	none in 2010, none in 2011, and 2 in 2012
CO	Maintenance	None

*In March 2013, the EPA approved CARB's request to redesignate the SDAB to an attainment/maintenance area for the 1997 8-hour ozone federal standard. Under the new 2008 8-hour federal standard, however, EPA designated the SDAB as a marginal non-attainment area (effective July 2012).

Source: CARB 2013a, USEPA 2013d

Note: CARB indicates that exceedances are not necessarily violations

Table 3.14.4: Ambient Air Quality Summary – San Diego-Beardsley

Pollutant Standards	2010	2011	2012
Carbon Monoxide (CO)			
Maximum National 8-hour concentration (ppm)	2.17	2.44	1.81
Maximum California 8-hour concentration (ppm)	2.17	2.44	1.81
Number of Days Standard Exceeded			
NAAQS 1-hour (>35 ppm)	0	0	0
CAAQS 8-hour (>20 ppm)	0	0	0
NAAQS 8-hour (>9 ppm)	0	0	0
CAAQS 8-hour (>9 ppm)	0	0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.077	0.067	0.065
Annual Average (ppm)	0.015	0.014	0.013
Number of Days Standard Exceeded			
CAAQS 1-hour	0	0	0
Sulfur Dioxide (SO_X)[a]			
Maximum National 1-hour concentration (ppm)	0.008	0.001	0.002
Maximum California 24-hour concentration (ppm)	0.0025	0.0005	0.0005
Number of Days Standard Exceeded			
NAAQS 1-hour (>0.075 ppm)	0	0	0
CAAQS 24-hour (>0.04 ppm)	0	0	0

Table 3.14.4 (cont.): Ambient Air Quality Summary – San Diego-Beardsley

Pollutant Standards	2010	2011	2012
Ozone (O_3)[b]			
Maximum 1-hour concentration (ppm)	0.085	0.091	0.088
Maximum 8-hour concentration (ppm)	0.072	0.075	0.079
Number of Days Standard Exceeded			
CAAQS 8-hour (>0.070 ppm)	2	1	2
CAAQS 1-hour (>0.09 ppm)	2	1	3
NAAQS 8-hour (>0.075 ppm)	0	0	2
Particulate Matter (PM_{10})			
National maximum 24-hour concentration (µg/m^3)	40.0	48.0	45.0
National second highest 24-hour concentration (µg/m^3)	38.0	47.0	43.0
State maximum 24-hour concentration (µg/m^3)	40.0	49.0	47.0
State second highest 24-hour concentration (µg/m^3)	39.0	48.0	45.0
National[c] annual average concentration (µg/m^3)	22.8	23.3	21.8
State[d] annual average concentration (µg/m^3)	23.4	24.0	22.2
Number of Days Standard Exceeded			
NAAQS 24-hour (>150 µg/m^3)	0	0	0
CAAQS 24-hour (>50 µg/m^3)	0	0	0
Particulate Matter ($PM_{2.5}$)			
Maximum 24-hour concentration (µg/m^3)	29.7	34.7	39.8
Second highest 24-hour concentration (µg/m^3)	26.2	33.9	34.7
Third highest 24-hour concentration (µg/m^3)	25.3	33.2	32.4
Fourth highest 24-hour concentration (µg/m^3)	24.3	25.4	31.8
National[c] annual average concentration (µg/m^3)	10.4	10.8	11.3
State[d] annual average concentration (µg/m^3)	*	10.9	*
Number of Days Standard Exceeded			
NAAQS 24-hour (>65 µg/m^3)	0	0	1

Notes
* Data Unavailable
[a] Sulfur dioxide readings for 2011 and 2012 taken from the El Cajon-Redwood Avenue Monitoring Station. National 24-hour and Annual Arithmetic Mean revoked in June 2010.
[b] Ozone readings taken at Del Mar-Mira Costa Monitoring Station.
[c] National annual average based on arithmetic mean.
[d] State annual average based on geometric mean.
Source: CARB 2013b,c

Some locations are considered more sensitive to adverse effects from air pollution than others. These locations are commonly termed sensitive receptors and they include hospitals, schools, day care centers, nursing homes, and parks/playgrounds. Sensitive receptors in proximity to localized CO sources, toxic air contaminants, or odors are of particular concern. Sensitive receptors closest to I-5 are presented in *Table 3.14.5*.

Table 3.14.5: Sensitive Receptors

School	District	Street Address	City	Distance (ft)
Preuss School UCSD	San Diego Unified	9500 Gilman Drive, Dept. 0536	La Jolla	1708
Laurel Elementary	Oceanside Unified	1410 Laurel Street	Oceanside	2131
Oceanside High	Oceanside Unified	1 Pirates Cove	Oceanside	1151
Palmquist Elementary	Oceanside Unified	1999 California Street	Oceanside	2280
South Oceanside Elementary	Oceanside Unified	1806 South Horne Street	Oceanside	1512
Buena Vista Elementary	Carlsbad Unified	1330 Buena Vista Way	Carlsbad	800
Jefferson Elementary	Carlsbad Unified	3743 Jefferson Street	Carlsbad	743
Pacific Rim Elementary	Carlsbad Unified	1100 Camino De Las Ondas	Carlsbad	2558
Capri Elementary	Encinitas Union Elementary	941 Capri Road	Encinitas	2025
Paul Ecke-Central Elementary	Encinitas Union Elementary	185 Union Street	Encinitas	1992
North Coast Alternative High	San Dieguito Union High	684 Requeza Street	Encinitas	2445
Sunset High (Continuation)	San Dieguito Union High	684 Requeza Street	Encinitas	2483
San Dieguito High Academy	San Dieguito Union High	800 Santa Fe Drive	Encinitas	1830
Solana Vista Elementary	Solana Beach Elementary	780 Santa Victoria Avenue	Solana Beach	2203
Skyline Elementary	Solana Beach Elementary	606 Lomas Santa Fe Drive	Solana Beach	1388
Earl Warren Middle	San Dieguito Union High	155 Stevens Street	Solana Beach	1931
Solana Highlands Elementary	Solana Beach Elementary	3520 Long Run Drive	San Diego	1462
Del Mar Hills Elementary	Del Mar Union Elementary	14085 Mango Drive	Del Mar	431
Del Mar Heights Elementary	Del Mar Union Elementary	13555 Boquita Drive	Del Mar	1826
Torrey Hills	Del Mar Union Elementary	10830 Calle Mar De Mariposa	San Diego	1481
Ada W. Harris Elementary	Cardiff Elementary	1508 Windsor Road	Cardiff-by-the-Sea	1066
Cardiff School District	Cardiff Elementary	1888 Montgomery Avenue	Cardiff-by-the-Sea	2435
Cardiff Elementary	Cardiff Elementary	1888 Montgomery Avenue	Cardiff-by-the-Sea	2592
Montessori Arts And Sciences Elementary	Carlsbad Unified	3016 Highland Drive	Carlsbad	1764
St. Patrick	Carlsbad Unified	3820 Pio Pico Drive	Carlsbad	187
Discovery Isle Child Development	Carlsbad Unified	6130 Paseo Del Norte	Carlsbad	556

Table 3.14.5 (cont.): Sensitive Receptors

School (cont.)	District	Street Address	City	Distance (ft)
Santa Fe Christian Schools	San Dieguito Union High	838 Academy Drive	Solana Beach	777
Santa Fe Montessori School	Solana Beach Elementary	1010 Solana Drive	Solana Beach	352
St. Mary Star Of The Sea Elementary	Oceanside Unified	515 Wisconsin Avenue	Oceanside	2613
Sanderling School	Cardiff Elementary	1401 Windsor Road	Cardiff-by-the-Sea	1673
Casa Montessori De Carlsbad	Carlsbad Unified	3470 Madison Street	Carlsbad	982
Cal Coast Academy	San Dieguito Union High	983 Lomas Santa Fe Drive, Suite F/G	Solana Beach	1173
Preschool	**Capacity**	**Street Address**	**City**	**Distance (ft)**
A Brighter Future Preschool & Child Development Center	136	3422 Tripp Court	San Diego	577
A Children's Garden – Leucadia	30	1421 Burgundy Road	Encinitas	1618
Back To The Basics Preschool	48	1759 Oceanside Boulevard	Oceanside	887
Balderrama Child Development Center	84	709 San Diego Street	Oceanside	1491
Bright Horizons Family Solutions	151	3720 Arroyo Sorrento Road	San Diego	947
Carlsbad Children's Garden	38	2518 Jefferson Street	Carlsbad	848
Carlsbad Children's House	24	2606 Jefferson Street	Carlsbad	1130
Carlsbad Montessori School	71	740 Pine Avenue	Carlsbad	1197
Casa De Niños Child Development Center	119	1718 Mission Avenue	Oceanside	1577
Casa Montessori De Carlsbad	49	3470 Madison Street	Carlsbad	1104
Childrens Learning Center	73	139 Canyon Drive	Oceanside	2633
Encinitas Migrant Child Development Center	52	1508 Windsor Road	Cardiff-by-the-Sea	1179
Family Recovery Center - Child Development Center	15	1100 Sportfisher Drive	Oceanside	332
Friendly Daycare & Preschool Center	30	1836 Dixie Street	Oceanside	1720
Great Beginnings Preschool	87	511 Encinitas Boulevard #110	Encinitas	1415
Immanuel Lutheran Children's Learning Center	35	1900 South Nevada Street	Oceanside	1937

Table 3.14.5 (cont.): Sensitive Receptors

Preschool (cont.)	Capacity	Street Address	City	Distance (ft)
International Cooperative Nursery School	24	9500 Gilman Drive, Dept. 18	La Jolla	2189
Little Bears Tender Care	75	1828 Oceanside Boulevard	Oceanside	1462
Maac Project Head Start North Coast	60	1501 Kelly Street	Oceanside	150
Maac Project Head Start Oceanside 3	18	509 Sports Fisher	Oceanside	1672
Magdalena Ecke YMCA	128	200 Saxony Road	Encinitas	635
Megastar Children's Christian Academy	27	3780 Pio Pico Drive	Carlsbad	98
Neighborhood House Association (NHA) - Carlsbad Head Start	82	3368 Eureka Place	Carlsbad	216
NHA - Head Start By The Sea	80	777 Santa Fe Drive	Encinitas	1528
NHA - Leucadia Head Start Center	60	616 Old Highway 101	Leucadia	2214
NHA - St. Leo's Head Start Center	74	936 Genevieve Street	Solana Beach	226
Oceanside Child Development Center	136	Corner of Horne Street & Center Avenue	Oceanside	1610
Oceanside Unified School District (OUSD) - Ditmar Elementary	26	1125 South Ditmar	Oceanside	2276
OUSD - Laurel Elementary	30	1410 Laurel Street	Oceanside	2050
San Dieguito United Methodist Pre-School	67	170 Calle Magdalena	Encinitas	759
Sanderling School	18	1401 Windsor Road	Cardiff-by-the-Sea	1518
Sandy Hill Nursery School	34	1036 Solana Drive	Solana Beach	835
Santa Fe Christian Preschool	64	845 Santa Fe Drive	Encinitas	1912
Santa Fe Montessori School	144	1010 Solana Drive	Solana Beach	420
Smart Start Preschool	75	240 Birmingham Drive	Cardiff-by-the-Sea	2269
Solana Beach Community Preschool	28	524 Stevens Avenue	Solana Beach	1600
Solana Beach Presbyterian Preschool	135	120 Stevens Avenue	Solana Beach	1778
Sorrento Valley Children's Center	84	4050-A Sorrento Valley Boulevard	San Diego	1424
Torrey Pines Montessori Center	12	2596 Carmel Valley Road	Del Mar	1919
Trump's Del Mar Hills Nursery School, Inc.	60	13692 Mango Drive	Del Mar	1259

Table 3.14.5 (cont.): Sensitive Receptors

Hospital	Street Address	City	Distance (ft)
Thornton-Perlman Hospital	9300 Campus Point Drive	La Jolla	1105
Veterans Administration Hospital	3350 La Jolla Village Drive	San Diego	859
Scripps Memorial Hospital - La Jolla	9888 Genesee Avenue	La Jolla	858
Scripps Memorial Hospital - Encinitas	354 Santa Fe Drive	Encinitas	203
College/University	**Street Address**	**City**	**Distance (ft)**
University Of California San Diego	La Jolla Village Drive & Gilman Drive	San Diego	895
National University-Carlsbad	705 Palomar Airport Road	Carlsbad	759
Park	**Park Type**	**City**	**Distance (ft)**
Los Peñasquitos Canyon Preserve	Preserve	San Diego	949
Quail Botanical Gardens	Botanical Garden	Encinitas	1489
San Elijo Lagoon Ecological Reserve	Ecological Reserve	Solana Beach/ Encinitas	79
UCSD Park	Passive Open Space	San Diego	160
Los Peñasquitos Canyon Reserve Trail	Trail	San Diego	50
Torrey Hills Neighborhood Park	Community Park	San Diego	2110
Torrey Pines State Reserve	Open Space	San Diego	0-50
Solana Highlands Elementary School & Park	Community Park	San Diego	1160
San Dieguito River Park	Open Space Preserve	San Diego	0
Surf and Turf Recreation Park (a.k.a. Del Mar Golf Center)	Golf and Tennis	San Diego	50
La Colonia Park	Community Park	Solana Beach	960
Glen Park	Community Park	Encinitas	1890
George Berkich Park	Community Park	Encinitas	2490
Cardiff Sports Park	Sports Fields	Encinitas	2320
Hall Property Community Park	Community Park	Encinitas	0
Ada Harris Elementary School & Park	Community Park	Encinitas	740
Mildred MacPherson Park	Community Park	Encinitas	2020
Encinitas Viewpoint Park	Community Park	Encinitas	930
Cottonwood Creek Park	Community Park	Encinitas	20
Paul Ecke Sports Park	Sports Fields	Encinitas	0
Magdalena Ecke Family YMCA	Gym, Pool, Skate Park, and Indoor Soccer Fields	Encinitas	140
Orpheus Park	Community Park	Encinitas	1210
James MacPherson Park	Park	Encinitas	15
Batiquitos Lagoon	Open Space	Carlsbad	0
Aviara Trails	Trail	Carlsbad	720

Table 3.14.5 (cont.): Sensitive Receptors

Park (cont.)	Park Type		City	Distance (ft)
South Carlsbad State Beach	Beach, Open Space		Carlsbad	1740
Poinsettia Park	Community Park		Carlsbad	1850
Car Country Park	Community Park		Carlsbad	50
Cannon Park	Community Park		Carlsbad	1690
Agua Hedionda Lagoon and CDFW Reserve	Open Space and Reserve		Carlsbad	0
Carlsbad State Beach	Beach and Open Space		Carlsbad	2110
Coastal Rail Trail - Carlsbad	Trail		Carlsbad	110
Chase Field and Pine Avenue Park	Sports Fields and Community Park		Carlsbad	360
Oak Park	Picnic Area		Carlsbad	50
Pio Pico Park	Picnic Area		Carlsbad	50
Holiday Park	Community Park		Carlsbad	0
Rotary Park	Community Park		Carlsbad	2530
Maxton Brown Park	Passive Recreation		Carlsbad	2320
Hosp Grove Park	Community Park		Carlsbad	1930
Buena Vista Lagoon	Open Space		Carlsbad & Oceanside	0
South Oceanside Elementary School and Park	Community Park		Oceanside	840
Marshall Street Swim Center and Park	Community Park		Oceanside	1320
Center City Golf Course	Golf Course		Oceanside	0
Ron Ortega Recreation Park	Sports Fields		Oceanside	100
Joe Balderrama Park & Center	Community Park		Oceanside	790
San Luis Rey River Trail	Trail / Bike Path		Oceanside	0
Capistrano Park	Community Park		Oceanside	1110
Nursing Homes	**Capacity**	**Street Address**	**City**	**Distance (ft)**
George G. Glenner Family Center - Encinitas	30	335 Saxony Road	Encinitas	961
Aviara Healthcare Center	119	944 Regal Road	Encinitas	130

Carbon Monoxide (CO)

For the CO hot spot analysis, the procedure outlined in the Transportation Project-Level Carbon Monoxide Protocol, 1997 (CO Protocol) (Institute of Transportation Studies UC Davis 1997) was used to perform a microscale air quality modeling using EMFAC2002 and CALINE4 (Caltrans 1989). EMFAC2002 (CARB 2007) was used to calculate the CO emission factors required for modeling. CALINE4 included in the CL4 software package was used to predict the maximum one-hour average CO concentrations at selected intersections in the proposed project limits (*Table 3.14.6*).

The composite CO emission factors were calculated for the years 2015 and 2030 for the SDAB. The EMFAC2002 SDAB default data were used for most variables including: model years; vehicle classes; inspection and maintenance program schedule; control technology; vehicle population and odometer accrual rates; vehicle miles traveled (VMT) and vehicle trips; and profiles of Reid Vapor Pressure, temperature, humidity, speed fractions, and idle times.

The ambient temperature used in EMFAC modeling was the lowest mean minimum temperature over a representative period of at least three years, adjusted by +5°F for both the morning and evening peak hours as recommended by the CO protocol. The temperature was determined to be 44.0°F (NWS 2009).

The average free flow speeds for the selected links were obtained from the project traffic study. These speeds were then used to determine the average cruise speed based on the arterial classifications. The links' average approach and departure speeds were also determined based on traffic volume, average cruise speed, and percentage of red time.

The eight-hour maximum CO concentration was calculated by applying a persistence factor of 0.7 to the predicted maximum one-hour average CO concentrations obtained from each modeling run. The background concentrations were then added to the predicted concentrations to calculate the modeled maximum concentrations, which were then compared to the CAAQS and NAAQS to determine if the proposed project results in exceedances.

Table 3.14.6: Estimated CO Concentration Hot Spot Modeling Results

Intersection	Existing		2030 No Build		2015 10+4 Scenarios		2030 10+4 Scenarios	
	AM	PM	AM	PM	AM	PM	AM	PM
One-Hour CO Concentrations								
Palomar Airport Road and I-5 access ramps	11.1	10.8	6.6	7.0	7.7	8.2	6.6	7.1
Genesee Avenue and I-5 access ramps	12.1	13.2	6.5	6.7	7.3	7.0	6.5	6.7
Del Mar Heights Road and I-5 access ramps	10.2	11.3	6.7	6.8	7.5	7.9	6.4	6.8
Federal standard	35							
State standard	20							
Eight-Hour CO Concentrations								
Palomar Airport Road and I-5 access ramps	7.8	7.6	4.6	4.9	5.4	5.7	4.6	5.0
Genesee Avenue and I-5 access ramps	7.8	8.7	4.6	4.7	5.1	4.9	4.6	4.7
Del Mar Heights Road and I-5 access ramps	7.1	7.9	4.7	4.8	5.3	5.5	4.5	4.8
Federal standard	9.0							
State standard	9.0							

Ambient one-hour concentrations are based on maximum CO levels for the Beardsley Street (Downtown San Diego) Monitoring Station.
Eight-hour concentrations are estimated from one-hour concentrations using an urban location persistence factor of 0.7.

Based on the results obtained from a detailed analysis, it has been concluded that the proposed project's future traffic conditions would not exceed federal and State one-hour or eight-hour standards during the a.m. or p.m. peak periods at any of the analyzed intersections. All other intersections in the project area are predicted to experience less delay time and improved operating conditions. The results of the quantitative CO hot spot analysis show that the proposed project would not adversely impact the local air quality.

The Carbon Monoxide (CO) "Hot Spot" analysis that was performed in the August 2007 Air Quality Analysis, was performed using the most current protocol (Transportation Project-Level Carbon Monoxide Protocol [CO Protocol], University of California Davis, December 1997, Caline 4, dispersion modeling software, in conjunction with CT-EMFAC 2002). While there have been recent updates to the CT-EMFAC version, the CO Protocol is still the same as is the traffic information used for modeling input. Any new analysis would result in similar or additionally improved findings due to improvements in vehicle emissions technology and vehicle fleet turnover.

PM_{10} and $PM_{2.5}$

On March 10, 2006, the USEPA published a final rule that establishes the transportation conformity criteria and procedures for determining which transportation projects must be analyzed from local air quality impacts in PM_{10} and $PM_{2.5}$ nonattainment and maintenance areas. Based on that rule, the USEPA and FHWA published the Transportation Conformity Guidance for Qualitative Hot-Spot Analysis in PM_{10} and $PM_{2.5}$ Nonattainment and Maintenance Areas (PM guidance) (FHWA 2006b). While the SDAB is not a federally designated PM_{10} and $PM_{2.5}$ nonattainment or maintenance area, it is designated as a State nonattainment area for both pollutants. Thus, to meet State requirements, the proposed project is assessed using the procedure outlined in the PM Guidance.

A hot spot analysis is defined in 40 CFR 93.101 as an estimation of likely future localized $PM_{2.5}$ or PM_{10} pollutant concentrations and a comparison of those concentrations to the relevant air quality standards. A hot spot analysis assesses the air quality impacts on a scale smaller than an entire nonattainment or maintenance area, including, for example, congested roadway intersections and highways or transit terminals. Such an analysis is a means of demonstrating that a transportation project meets CAA conformity requirements to support state and local air quality goals with respect to potential localized air quality impacts. When a hot spot analysis is required, it is included within the project-level conformity determination that is made by the FHWA or FTA.

The PM Guidance describes qualitative hot spot analyses. Qualitative hot spot analyses methods involve more streamlined reviews of local factors such as local monitoring data near a proposed project location.

Projects of Air Quality Concern

To meet statutory requirements, the March 10, 2006, final rule requires $PM_{2.5}$ and PM_{10} hot spot analyses to be performed for "projects of air quality concern." Qualitative hot spot analyses would be done for these projects. Projects not identified as projects of air quality concern (POAQC) are considered to meet statutory requirements without any further hot spot analyses.

The PM Guidance defines POAQC as projects within a federally designated $PM_{2.5}$ or PM_{10} nonattainment or maintenance area, funded or approved by the FHWA or FTA, and one of the following types of projects:

- New or expanded highway projects that have a significant number of or significant increase in diesel vehicles
- Projects affecting intersections that are LOS D, E, or F with a significant number of diesel vehicles, or those that would change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project

- New bus and rail terminals, and transfer points, that have a significant number of diesel vehicles congregating at a single location
- Expanded bus and rail terminals, and transfer points, that significantly increase the number of diesel vehicles congregating at a single location
- Projects in, or affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$ applicable implementation plan, or implementation plan submittal, as appropriate, as sites of violation or possible violation

Appendix A of the PM Guidance contains examples of POAQC and examples of projects that are not an air quality concern. Under the example of POAQC, a significant volume for a new highway or expressway is defined as facilities with an annual average daily traffic (AADT) volume of 125,000 or more, and a significant number of diesel vehicles is defined as diesel truck traffic representing eight percent or more of the total AADT.

The proposed project is not located in a federally designated $PM_{2.5}$ or PM_{10} nonattainment or maintenance area. Therefore, the proposed project does not meet the criteria of a POAQC as defined in the PM Guidance. PM_{10} and $PM_{2.5}$ hot spot analyses are required by the USEPA Transportation Conformity Rule (40 CFR § 93.116 and 40 CFR § 93.123) to determine project-level conformity in PM_{10} and $PM_{2.5}$ nonattainment or maintenance areas (FHWA 2006a).

The SDAB is not a federally designated PM_{10} or $PM_{2.5}$ nonattainment or maintenance area; thus, the project does not require PM_{10} or $PM_{2.5}$ hot spot analyses. However, the SDAB is in nonattainment for PM_{10} and $PM_{2.5}$ State standards as stated above.

Following the PM Guidance, the project does not meet the requirement set forth as a POAQC. As defined above, the project would expand the I-5 corridor but would not have a significant increase in diesel truck traffic, only six percent diesel trucks. The project would not affect intersections that are LOS D, E, or F with a significant number of diesel vehicles, or change those to LOS D, E, or F, because of increased traffic volumes from a significant number of diesel vehicles related to the project. The project would not create new bus and rail terminals, and transfer points, that have a significant number of diesel vehicles congregating at a single location. The project would not expand bus and rail terminals, and transfer points, that significantly increase the number of diesel vehicles congregating at a single location. The project would not significantly increase the number of diesel vehicles congregating at a single location affecting locations, areas, or categories of sites that are identified in the $PM_{2.5}$ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation. The project does not meet the criteria of a POAQC as defined in the PM Guidance and therefore does not require PM_{10} or $PM_{2.5}$ hot spot analyses.

There has also been practical advice established, based on the California conformity working group practices, to help identify a POAQC. This advice lists three types of projects:

1. Likely a POAQC
   a. Project services 10,000+ AADT of diesel trucks
   b. Project substantially affects truck traffic by means of congestion reduction, capacity expansion or realignment
2. Could be a POAQC
   a. Project moves diesel emissions closer to sensitive receptors, somewhat independent of volume

   b. Project increases truck volume 5 to 10 percent, even if volume falls short of USEPA criteria
3. Not likely a POAQC
   a. Project has essentially the same build and no build truck volume

Using this advisory analysis and the PM "Hot Spot" methodology of localized analysis, the project was broken up into 22 segments to determine the worst-case scenario of diesel truck AADT. According to *Table 3.14.7*, the worst-case AADT of diesel trucks, for the 2030 8+4 Buffer alternative (Preferred Alternative), is located at Segment 5, southbound. This segment has an AADT of 7,434 trucks, which is well below the 10,000+ advisory limit and it is during off-peak hours. The highest peak hour AADT truck traffic is only 1,790 at Segment 2 in the southbound direction.

Table 3.14.7: 2030 Worst-case Diesel Trucks AADT for the Preferred Alternative

Segment	2030 Preferred Alternative							
	AADT by Segment							
	SB General Purpose				NB General Purpose			
	Peak	Trucks (6%)	OP	Trucks (6%)	Peak	Trucks (6%)	OP	Trucks (6%)
1	14,994	**900**	85,072	**5,104**	25,101	**1,506**	83,571	**5,014**
2	15,570	**934**	71,706	**4,302**	18,611	**1,117**	67,516	**4,051**
3	17,494	**1,050**	71,044	**4,263**	17,900	**1,074**	89,371	**5,362**
4	29,832	**1,790**	115,943	**6,957**	28,372	**1,702**	112,486	**6,749**
5	27,417	**1,645**	123,893	**7,434**	26,304	**1,578**	110,616	**6,637**
6	24,501	**1,470**	112,262	**6,736**	23,776	**1,427**	104,788	**6,287**
7	22,618	**1,357**	111,630	**6,698**	23,768	**1,426**	107,615	**6,457**
8	20,051	**1,203**	101,623	**6,097**	20,563	**1,234**	97,923	**5,875**
9	19,303	**1,158**	97,345	**5,841**	19,460	**1,168**	94,890	**5,693**
10	18,608	**1,116**	95,765	**5,746**	19,731	**1,184**	93,338	**5,600**
11	18,234	**1,094**	94,648	**5,679**	18,803	**1,128**	91,168	**5,470**
12	17,494	**1,050**	94,224	**5,653**	19,623	**1,177**	91,887	**5,513**
13	16,970	**1,018**	92,111	**5,527**	19,389	**1,163**	89,671	**5,380**
14	17,430	**1,046**	89,804	**5,388**	18,146	**1,089**	85,906	**5,154**
15	20,442	**1,227**	87,813	**5,269**	19,036	**1,142**	80,967	**4,858**
16	22,264	**1,336**	91,709	**5,503**	20,720	**1,243**	82,189	**4,931**
17	22,615	**1,357**	92,816	**5,569**	20,257	**1,215**	81,876	**4,913**
18	19,040	**1,142**	85,541	**5,132**	19,640	**1,178**	80,209	**4,813**
19	13,935	**836**	88,601	**5,316**	21,114	**1,267**	86,567	**5,194**
20	14,454	**867**	86,762	**5,206**	21,006	**1,260**	82,998	**4,980**
21	13,687	**821**	82,277	**4,937**	21,158	**1,269**	79,727	**4,784**
22	13,692	**822**	86,688	**5,201**	19,274	**1,156**	77,175	**4,631**

Note: Peak hours are 6 a.m. to 9 a.m. and 3 p.m. to 6 p.m., total of six hours. Off peak hours are all others, total of 18 hours. This is why off peak AADT is greater than peak AADT.

Table 3.14.8 depicts the AADT truck traffic for the 2030 No Build alternative and shows the same segment with an increased AADT for trucks at 8,398. This project actually reduces the amount of AADT truck traffic, for this worst-case scenario, by 964. Therefore, the proposed project would not affect truck traffic by means of congestion reduction, capacity expansion or realignment and does not fall under category 1 of this advisory analysis.

Table 3.14.8: 2030 Worst-case Diesel Trucks AADT for the No Build Alternative

Segment	2030 No Build							
	AADT by Segment							
	SB General Purpose				NB General Purpose			
	Peak	Trucks (6%)	OP	Trucks (6%)	Peak	Trucks (6%)	OP	Trucks (6%)
1	8,016	**481**	91,605	**5,496**	17,373	**1,042**	90,671	**5,440**
2	7,937	**476**	80,002	**4,800**	11,078	**665**	70,375	**4,223**
3	7,864	**472**	74,161	**4,450**	12,853	**771**	69,676	**4,181**
4	11,258	**675**	131,291	**7,877**	17,497	**1,050**	117,112	**7,027**
5	11,509	**691**	139,969	**8,398**	17,038	**1,022**	119,890	**7,193**
6	9,462	**568**	122,045	**7,323**	16,118	**967**	111,906	**6,714**
7	9,299	**558**	127,372	**7,642**	16,644	**999**	115,077	**6,905**
8	8,385	**503**	124,849	**7,491**	15,888	**953**	119,633	**7,178**
9	8,066	**484**	121,113	**7,267**	15,500	**930**	112,189	**6,731**
10	7,899	**474**	118,107	**7,086**	15,113	**907**	110,148	**6,609**
11	7,829	**470**	116,478	**6,989**	14,868	**892**	108,843	**6,531**
12	7,571	**454**	115,547	**6,933**	14,904	**894**	106,842	**6,411**
13	7,675	**461**	113,796	**6,828**	14,763	**886**	105,048	**6,303**
14	7,501	**450**	113,235	**6,794**	14,399	**864**	100,265	**6,016**
15	8,432	**506**	114,634	**6,878**	13,196	**792**	103,319	**6,199**
16	9,058	**543**	120,565	**7,234**	13,024	**781**	107,515	**6,451**
17	9,171	**550**	121,165	**7,270**	12,945	**777**	105,246	**6,315**
18	8,701	**522**	114,861	**6,892**	12,610	**757**	101,140	**6,068**
19	6,871	**412**	113,456	**6,807**	16,264	**976**	107,313	**6,439**
20	7,313	**439**	114,974	**6,898**	15,980	**959**	99,229	**5,954**
21	6,878	**413**	104,160	**6,250**	16,042	**963**	88,730	**5,324**
22	6,986	**419**	105,012	**6,301**	15,577	**935**	83,426	**5,006**

Note: Peak hours are 6 a.m. to 9 a.m. and 3 p.m. to 6 p.m., total of six hours. Off peak hours are all others, total of 18 hours. This is why off peak AADT is greater than peak AADT.

The Preferred Alternative would only construct HOV lanes in the center of the alignment and would not add additional general purpose lanes. However, there would be some areas throughout the corridor that require additional right-of-way to accommodate the HOV lanes, which would translate into some minor shifting of the number four lane ranging from 3 to 25 ft. As stated above, the project would not increase truck volumes 5 to 10 percent. In the worst case, the project would actually reduce truck AADT by 13 percent.

The third criterion in the advisory analysis is a project that is not likely a POAQC. This describes a project as one that has essentially the same build and no build truck volume. The combined northbound and southbound truck volume for the Preferred Alternative is 294,848 ADT. However, the combined northbound and southbound truck volume for the No Build alternative is 315,921. Not only does the project meet the third criterion, but it exceeds it because there would be a seven percent reduction in diesel truck traffic.

As stated above, the SDAB is not a federally designated PM_{10} or $PM_{2.5}$ nonattainment or maintenance area; thus, the project does not require PM_{10} or $PM_{2.5}$ hot spot analyses. Emissions burdens for these pollutants have been calculated in *Table 3.14.9* for CEQA purposes, which requires that the future build project be compared with the existing conditions. While PM_{10} would experience a slight increase due to increased volumes, diesel truck emissions, which are directly related to the pollutant, $PM_{2.5}$ would experience a five percent decrease for the 2030 Preferred Alternative when compared with existing conditions.

Table 3.14.9: 2030 Changes (Δ) in Total Project PM Emission Rates

Toxic Air Contaminant	Emissions		Δ % from Existing
	Existing (g/day)	8+4 Alternative (g/day)	
PM_{10} (fugitive dust)	329,920	368,236	12
$PM_{2.5}$ (diesel)	164,147	156,741	-5
Average Percent Change			4

The proposed project does not meet the criteria of a POAQC as defined in the PM Guidance and falls under category 3 of the advisory analysis, not likely a POAQC, and emissions show a reduction of five percent in the diesel-related pollutant $PM_{2.5}$, therefore it does not require a quantitative PM_{10} or $PM_{2.5}$ hot spot analyses.

The proposed improvements to the I-5 North Coast Corridor would increase capacity. The existing diesel fuel truck percentage within the project limits is six percent of AADT, however, which is below the threshold of eight percent. Accordingly, the proposed project would not result in an increase in the ratio of trucks to the overall traffic volumes. Estimated horizon year (2030, equivalent to 2035) truck AADT would remain at six percent. In addition, the proposed project would relieve congestion, improve operations, and provide better circulation.

The nearest air quality monitoring site located in a downwind direction from the project site that provides PM_{10} and $PM_{2.5}$ background information is the Beardsley Monitoring Station. Data from the Beardsley Monitoring Station indicate that the project area meets the current federal PM_{10} and $PM_{2.5}$ standards of 150 ug/m3 (PM_{10}, 24 hours), 35 ug/m^3 ($PM_{2.5}$, 24 hours), and 15 ug/m^3 ($PM_{2.5}$, annual).

Over the past 20 years the SDAB has experienced a decline in the number of days with unhealthy levels of pollutants including PM_{10} and $PM_{2.5}$, despite the region's growth in population and VMT (which both contribute to air pollution problems). Based on the APCD 2009 Annual Report, there has been a general downward trend in the concentration of particulates over that time. *Table 3.14.4* shows the PM_{10} and $PM_{2.5}$ concentrations observed at the Beardsley Monitoring Station from 2010 to 2012, in comparison with federal and State standards.

The proposed project is located in an attainment area for federal PM_{10} and $PM_{2.5}$ standards, and in a nonattainment area for State PM_{10} and $PM_{2.5}$ standards. Based on screening using USEPA PM Guidance, the proposed project is not a Project of Air Quality Concern because it does not meet the criteria due to relatively low truck AADT, truck percentage, and increase in truck volumes comparing the build alternatives and No Build alternative. The proposed project would improve traffic operations by smoothing traffic flow and would contribute to lower PM emissions as compared to the No Build alternative. The proposed project, therefore, is in conformance for federal PM_{10} and $PM_{2.5}$ standards and is unlikely to increase the frequency or severity of any existing exceedances regarding the nonattainment of State PM_{10} and $PM_{2.5}$ standards.

Naturally Occurring Asbestos (NOA)

The FCAA requires the USEPA to develop and enforce regulations to protect the general public from exposure to airborne contaminants that are known to be hazardous to human health. In accordance with FCAA Section 112, the USEPA established National Emissions Standards for Hazardous Air Pollutants (NESHAP) to protect the public. Asbestos was one of the first hazardous air pollutants regulated under this section. On March 31, 1971, the USEPA identified asbestos as a hazardous pollutant, and on April 6, 1973, first published the asbestos NESHAP in 40 CFR 61. In 1990, a revised NESHAP regulation was published by the USEPA.

The asbestos NESHAP regulations protect the public by minimizing the release of asbestos fibers during activities involving the processing, handling, and disposal of asbestos-containing material. Accordingly, the asbestos NESHAP specifies work practices to be followed during demolitions and renovations of all structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units). In addition, the regulations require the project applicant to notify applicable State and local agencies and/or USEPA regional offices before all demolitions or before construction that contains a certain threshold amount of asbestos.

Naturally Occurring Asbestos (NOA)-bearing Serpentine

Serpentine is a mineral commonly found in seismically active regions of California, usually in association with ultramafic rocks and along associated faults. Certain types of serpentine occur naturally in a fibrous form known generically as asbestos. Asbestos is a known carcinogen and inhalation of asbestos may result in the development of lung cancer or mesothelioma. The CARB has regulated the amount of asbestos in crushed serpentinite used in surfacing applications, such as for gravel on unpaved roads, since 1990. In 1998, new concerns were raised about health hazards from activities that disturb asbestos-bearing rocks and soil. In response, the CARB revised its asbestos limit for crushed serpentines and ultramafic rock in surfacing applications from 5 percent to less than 0.25 percent and adopted a new rule requiring best practices dust control measures for activities that disturb rock and soil containing NOA (CDC 2000a).

According to the report A General Location Guide for Ultramafic Rocks in California-Area Likely to Contain Naturally Occurring Asbestos (CDC 2000b), the coastal portion of San Diego County NOA is not typically found in the geological formations present on the proposed project site (CDC 2000a, b). Thus, hazardous exposure to asbestos-containing serpentine materials would not be a concern with the proposed project.

Mobile Source Air Toxics (MSAT)

For the Mobile Source Air Toxics (MSAT) analysis, the FHWA's Interim Guidance on Air Toxic Analysis for NEPA Documents (MSAT Guidance), December 6, 2012, was used, updated from the previous 2006 and 2009 guidance. The proposed project would add or create new significant capacity to the I-5 North Coast Corridor, which has an AADT level of greater than 150,000. Furthermore, the proposed project is located in proximity to populated areas and sensitive receptors. Consequently, as outlined in the MSAT guidance, a quantitative MSAT analysis is required.

There are no established regulatory concentration targets for the priority MSATs, which include acrolein, benzene, 1,3 butadiene, diesel particulate matter (DPM), diesel exhaust organic gases (DEOG), formaldehyde, naphthalene, and polycyclic organic matter (POM). Therefore, the impacts of these MSATs were assessed through a quantitative alternative analysis in which MSAT emissions are compared among proposed project scenarios for build alternatives in 2015 and 2030, No Build 2015 and 2030, and the existing conditions (2006) to determine if meaningful differences in the levels of MSAT emissions exist. Appropriate mitigation measures should be identified and considered if meaningful differences exist.

Twenty-two segments of the corridor were determined and selected for the analyses. The segment boundaries do not change with the different scenarios. Each segment runs from the middle of each existing interchange to the next interchange and consists of all main lanes, connectors, and HOV lanes, included within the segment for each scenario. Northbound and southbound lanes are included together in each segment. The discrete traffic data for each link contained within a segment are summed up to obtain daily peak and off-peak totals for that segment.

In order to perform the quantitative emissions analysis, CT-EMFAC, which is a California specific transportation project-level analysis tool, was used. This modeling software was designed to model criteria pollutants, MSATs, and carbon dioxide using the latest version of the California Mobile Source Emission Inventory and Emission Factors.

The Caltrans CT-EMFAC tool has been available for several years, with the existing version of CT-EMFAC (version 4.1) being based on data derived from EMFAC 2007. In 2011, CARB released a new version of EMFAC (EMFAC 2011) that includes updated emissions information and travel activity data for car and truck fleets (CARB 2011). Until an updated CT-EMFAC tool is available that incorporates EMFAC 2011 data, the Project-Level Emissions Estimation – Interim Template (Interim Tool) is being used. This Interim Tool combines the existing CT-EMFAC and CARB's EMFAC 2011 online databases to analyze the priority MSATs listed above.

MSAT Analysis

Traffic activity data have been utilized in performing the MSAT analysis, with these data supplemented by available Caltrans data inventory systems for the base year values, as well as by Caltrans forecast modeling of the corridor for future year values (*Table 3.14.10*). Emission factors for the priority MSATs have been obtained for the SDAB portion of San Diego County using the Interim Tool.

The Draft EIR/EIS analyzed the build alternatives. The emissions analysis corresponded with traffic volumes that identified that the MSAT analysis for the 10+4 alternatives would be slightly greater than the 8+4 alternatives. This was not, however, found to be substantive. FHWA-issued Interim Guidance on December 6, 2012 added three pollutants (napthalene, POM and DEOG) and removed one pollutant (acetaldehyde). Because there would be no substantial differences, an updated MSA analysis was only performed for the refined 8+4 Buffer alternative (Preferred Alternative). The results of the MSAT analysis are tabulated in *Tables 3.14.11* and *3.14.12*.

Table 3.14.10: Traffic Activity Data for *I-5 NCC Project*

Year	Scenario	Peak Period (VMT)			Daily Total (VMT)			Average Speed (mph)
		LDV	Trucks	Total	LDV	Trucks	Total	Peak
Existing (2006)	Existing	1,069,290	68,253	1,137,543	5,228,788	333,752	5,562,540	50.5
Operational	No Build	889,325	56,765	946,091	5,926,505	378,288	6,304,793	32.7
Year (2015)	10+4 Scenarios	1,268,670	80,979	1,349,649	6,203,569	395,972	6,599,541	66.5
	8+4 Scenarios	1,241,187	79,225	1,320,411	6,064,769	387,113	6,451,882	60.5
Horizon	No Build	709,360	45,278	754,638	6,624,221	422,823	7,047,044	19.5
Year (2030)	10+4 Scenarios	1,468,049	93,705	1,561,754	7,178,348	458,192	7,636,540	54.7
	8+4 Scenarios	1,313,047	83,812	1,396,859	6,890,497	439,819	7,330,316	39.3

Source: Caltrans Traffic Data, LDV – light duty vehicle, VMT – vehicle miles traveled, mph – miles per hour

Table 3.14.11: 2015 Changes (Δ) in Total Project MSAT Emission Rates

Toxic Air Contaminant	Existing Emissions	No Build Alternative	8+4 Scenarios (8 MF + 2 HOV/ML)			10+4 Scenarios (10 MF + 2 HOV/ML)		
	(g/day)	(g/day)	(g/day)	Δ% from Existing	Δ % from No Build	(g/day)	Δ% from Existing	Δ% from No Build
Diesel PM	59,722	39,411	37,481	-37	-5	32,925	-26	+14
Benzene	28,530	12,974	12,886	-55	-1	24,340	-42	+10
1,3-Butadiene	6,444	2,875	2,865	-56	0	4,234	-46	+17
DEOG	55,035	29,204	26,001	-53	-11	These constituents did not require documentation when the 10+4 MSAT analysis was performed.		
Naphthalene	29,050	31,481	30,199	+4	-4			
Polycyclic organic matter	4,050	4,429	4,314	+7	-3			
Acrolein	1,500	684	688	-54	+1	960	-46	+17
Formaldehyde	24,695	10,781	10,548	-57	-2	19,767		+14
Average Percent Change				-38	-3	–	-40.5	+14

MF – mixed-flow lane, ML – Managed Lane, g/day – grams per day (based on vehicle miles traveled)

Table 3.14.12: 2030 Changes (Δ) in Total Project MSAT Emission Rates

Toxic Air Contaminant	Existing Emissions	No Build Alternative	8+4 Scenarios (8 MF + 2 HOV)			10+4 Scenarios (10 MF + 2 HOV)		
	(g/day)	(g/day)	(g/day)	Δ% from Existing	Δ% from No Build	(g/day)	Δ% from Existing	Δ% from No Build
Diesel PM	59,722	34,013	34,343	-42	+1	24,898	-44	+18
Benzene	28,530	6,626	7,286	-74	+10	17,105	-59	+17
1,3-Butadiene	6,444	1,450	1,603	-75	+11	3,001	-62	+25
DEOG	55,035	20,424	17,927	-67	-12	These constituents were not required documentation when the 10+4 MSAT analysis was performed.		
Naphthalene	29,050	30,907	32,109	+11	+4			
Polycyclic organic matter	4,050	4,362	4,523	+12	+4			

Table 3.14.12 (cont.): 2030 Changes (Δ) in Total Project MSAT Emission Rates

Toxic Air Contaminant	Existing Emissions	No Build Alternative	8+4 Scenarios (8 MF + 2 HOV)			10+4 Scenarios (10 MF + 2 HOV)		
	(g/day)	(g/day)	(g/day)	Δ% from Existing	Δ% from No Build	(g/day)	Δ% from Existing	Δ% from No Build
Acrolein	1,500	348	379	-75	+9	680	-62	+26
Formaldehyde	24,695	5,056	5,466	-78	+8	4,255	-61	+19
Average Percent Change				**-49**	**+4**	--	--	--

Caltrans began air quality technical studies for the proposed project in 2006, basing those studies on the most current traffic projections then available, which were SANDAG's Series 10 projected traffic volumes for year 2030 for the 10+4 build alternatives. During the course of the project development process, SANDAG released both the Series 11 forecasts and model that were based upon the 8+4 build alternatives and are within one percent of the Series 10 forecasts. More recently, the Series 12 forecasts and model was released that included forecasts for years 2035 and 2050. Review of these different data sets indicated that the initial Series 10 2030 daily traffic volumes, which were used for the basis of the original traffic studies, were equivalent to the Series 12 2035 daily traffic demand volumes to within an average of 3.5 percent. These demand volumes differences are minimal and a revision at this time would not alter the results of the associated studies. Because the difference between Series 10 and Series 12 decreases to almost zero over time, it does not represent a substantial change and would not impact the alternatives studied or the impacts of those alternatives. Therefore, forecasts presented in this Final EIR/EIS and the associated technical studies are based on the Region's Series 10 model and that analysis is indicative of what is expected to occur in year 2035.

The analysis was refined to determine MSAT emission rates by segments of the I-5 corridor. *Table 3.14.13* shows the approximate segments for the northbound and southbound sides of the freeway. The segments are not of equal length, varying from 0.37 mi to 2.35 mi. *Table 3.14.13* also lists the segment extents and principal land uses near the freeway along each segment.

Table 3.14.13: Land Uses within I-5 Segments

Segment No.	I-5 Segment	Principal Land Use Along Segment
1	La Jolla Village Drive to Genesee Avenue	Residential, Retail & Commercial
2	Genesee Avenue to Carmel Mountain Road	Residential, Retail & Commercial
3	Carmel Mountain Road to Carmel Valley Road	Residential, Retail & Commercial
4	Carmel Valley Road to Del Mar Heights Road	Residential, Retail & Commercial
5	Del Mar Heights Road to Via de la Valle	Residential, Retail & Commercial
6	Via de la Valle to Lomas Santa Fe Drive	Residential, Commercial, & Industrial
7	Lomas Santa Fe Drive to Manchester Avenue	Residential, Commercial, & Industrial
8	Manchester Avenue to Birmingham Drive	Residential & Retail
9	Birmingham Drive to Santa Fe Drive	Residential & Retail
10	Santa Fe Drive to Encinitas Boulevard	Residential & Retail

Table 3.14.13 (cont.): Land Uses within I-5 Segments

Segment No.	I-5 Segment	Principal Land Use Along Segment
11	Encinitas Boulevard to Leucadia Boulevard	Residential & Retail
12	Leucadia Boulevard to La Costa Avenue	Residential & Retail
13	La Costa Avenue to Poinsettia Lane	Residential & Retail
14	Poinsettia Lane to Palomar Airport Road	Residential & Commercial
15	Palomar Airport Road to Cannon Road	Residential & Commercial
16	Cannon Road to Tamarack Avenue	Residential & Commercial
17	Tamarack Avenue to Carlsbad Village Drive	Residential & Commercial
18	Carlsbad Village Drive to Vista Way	Residential & Commercial
19	Vista Way to Oceanside Boulevard	Residential & Commercial
20	Oceanside Boulevard to Mission Avenue	Residential & Commercial
21	Mission Avenue to SR-76	Residential & Commercial
22	SR-76 to Wire Mountain Road	Residential & Commercial

MSAT Discussion of Results

As discussed in the Draft EIR/EIS, the prior MSAT analysis indicated that a substantial decrease in MSAT emissions would be expected for the build alternatives from the base year (2006) levels through future year levels. This decrease was shown to be prevalent throughout the highest-priority MSATs and the analyzed alternatives, regardless of the difference in mainline configurations. This decrease was also consistent with the aforementioned USEPA study that projects a substantial reduction in on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde between 2000 and 2020. Based on the analysis in the Draft EIR/EIS *Table 3.14.12*, reductions in existing MSAT levels expected by 2030 were: between 44 and 48 percent of DPM, 59 and 62 percent of benzene, 62 and 65 percent of 1,3-butadiene, 62 and 64 percent of acetaldehyde, 62 and 65 percent of acrolein, and 61 and 64 percent of formaldehyde, depending on the alternative. These reductions were projected to be achieved while the total VMT for the alternatives would increase by approximately 32 to 37 percent in 2030 from the base year value depending on the alternative (refer to *Table 3.14.10*).

Prior to preparation of this Final EIR/EIS, Caltrans recalculated MSAT analyses for the refined 8+4 Buffer (Preferred Alternative). This analysis indicates that a substantial decrease in most of the MSAT emissions can be expected for the Preferred Alternative from the base year through future year levels. *Figures 3-14.1* through *3-14.8* illustrate these decreases. This decrease is consistent with the aforementioned USEPA study projections of a substantial reduction in on-highway emissions of benzene, formaldehyde, and 1,3-butadiene prior to 2020. Based on the analysis for this project as shown in *Table 3.14.12*, reductions in existing MSAT levels expected by 2030 are: 42 percent of DPM, 74 percent of benzene, 75 percent of 1,3-butadiene, 67 percent of DEOG, 75 percent of acrolein, and 78 percent of formaldehyde. Comparing the 2030 Preferred Alternative with the No Build alternative shows that MSAT levels would increase by 11 percent, in the worst case, for 1,3 Butadiene, and by 1 percent for Diesel Particulate Matter (DPM), while the emissions for Diesel Exhaust Organic Gases (DEOG) would decrease by 12 percent. MSAT levels would increase slightly for naphthalene and POM by 11 percent and 12 percent, respectively. MSAT priority pollutant levels for the Preferred Alternative would also decrease by an average of three percent (2015) and increase by an average of four percent (2030) compared to the No Build alternative, with the 2030 increase due to the higher projected traffic volumes shown on *Table 3.14.11*. It should be noted that the pollutants directly

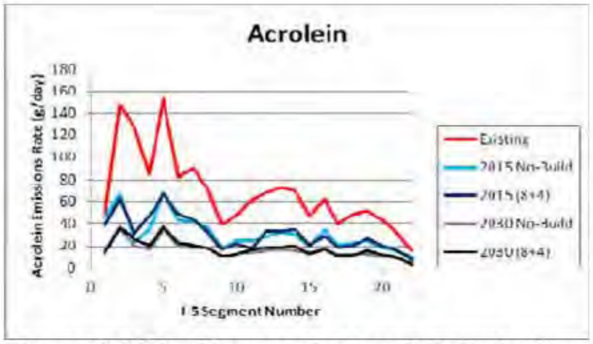

Figure 3-14.1: Changes in Acrolein Emission

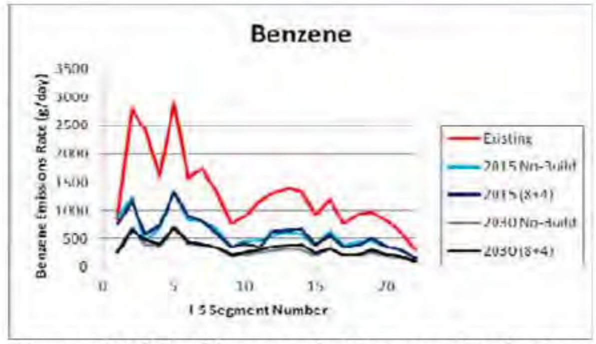

Figure 3-14.2: Changes in Benzene Emission

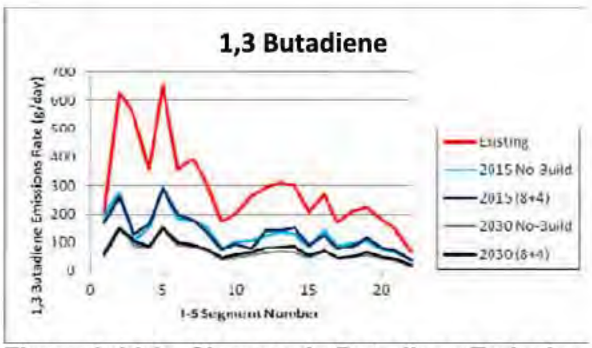

Figure 3-14.3: Changes in Butadiene Emission

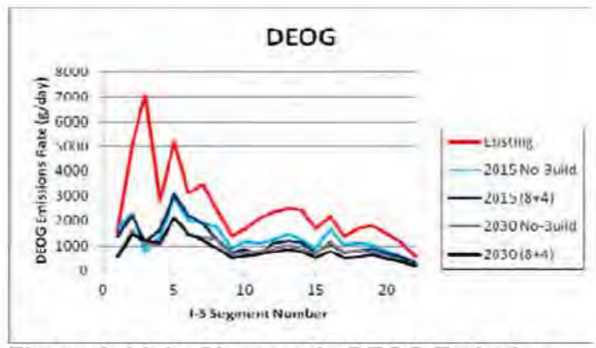

Figure 3-14.4: Changes in DEOG Emission

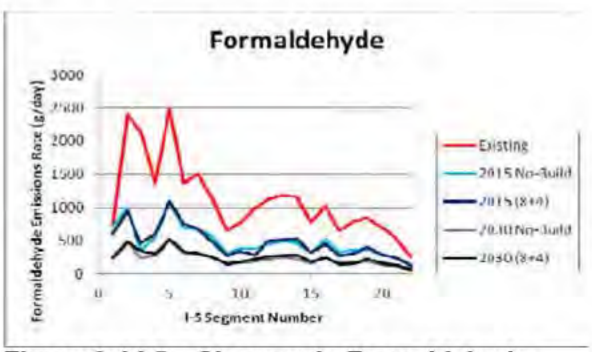

Figure 3-14.5: Changes in Formaldehyde Emission

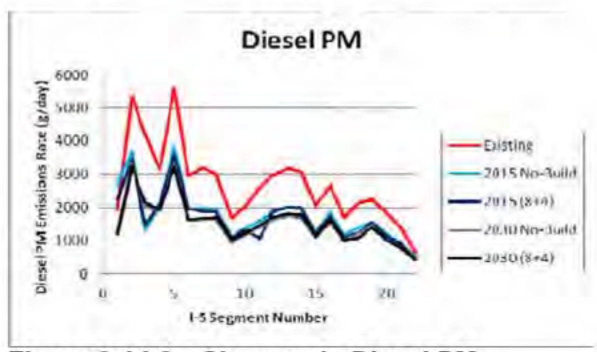

Figure 3-14.6: Changes in Diesel PM Emission

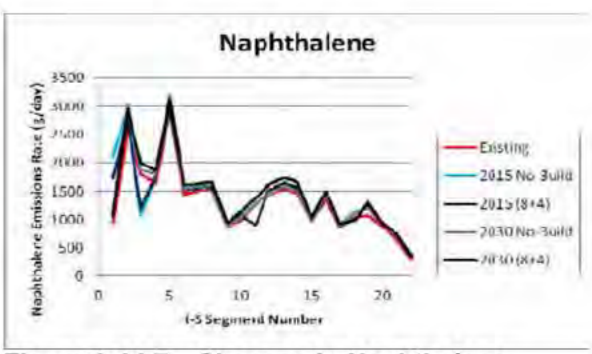

Figure 3-14.7: Changes in Naphthalene Emission

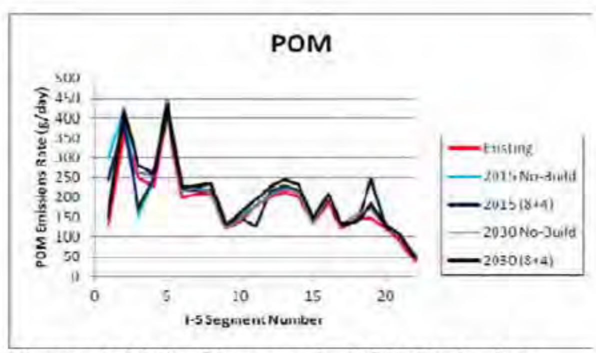

Figure 3-14.8: Changes in POM Emission

related to diesel trucks, DPM and DEOG, would experience almost no change and even a decrease in MSAT emissions, +1 percent and -12 percent respectively, when comparing the 2030 Preferred Alternative to the No Build alternative. In addition, the 2030 Preferred Alternative would experience reduced MSAT emissions levels when compared to the 2030 10+4 Alternative, with DPM being the largest at a 17 percent reduction.

Summary of Existing Credible Scientific Evidence Relevant to Evaluating Impacts of MSATs

Controlling air toxic emissions became a national priority with the passage of the FCAA Amendments (CAAA) of 1990, whereby Congress mandated that the USEPA regulate 188 air toxics, also known as hazardous air pollutants. The USEPA has assessed this expansive list in its latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in its Integrated Risk Information System (IRIS) (http://www.epa.gov/iris/). In addition, the USEPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from its 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are acrolein, benzene, 1,3-butadiene, DPM plus DEOG (diesel PM), formaldehyde, naphthalene, and POM. While the FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future USEPA rules. The 2007 USEPA rule mentioned above requires controls that will dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using USEPA's MOBILE6.2 model, even if vehicle activity (VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050, as shown in *Figure 3.14.9*.

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how potential public health risks posed by MSAT exposure should be factored into project-level decision making within the context of NEPA.

Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, Caltrans is duly expected by the public and other agencies to address MSAT impacts in environmental documents. The FHWA, USEPA, the Health Effects Institute (HEI), and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this field.

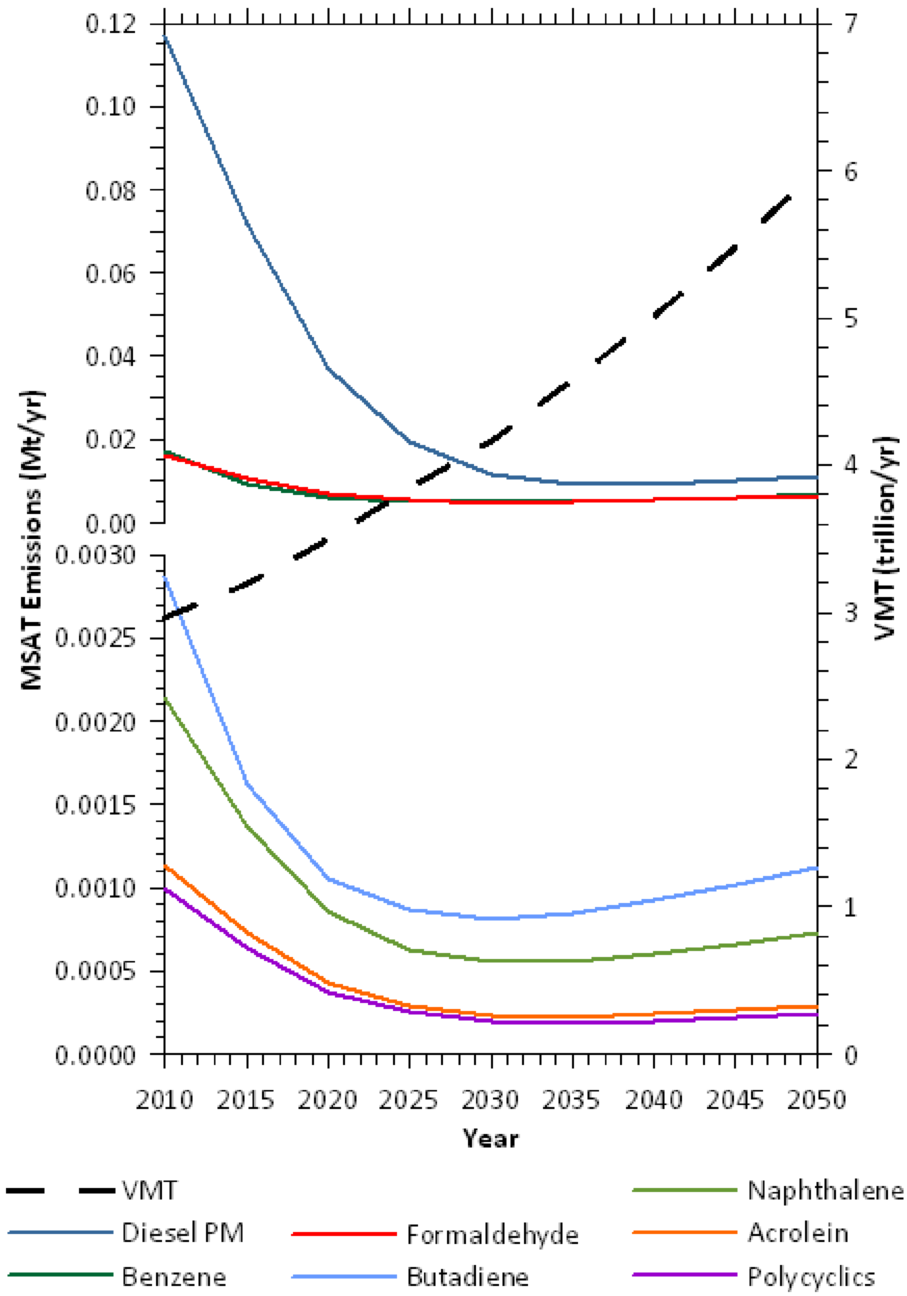

Figure 3-14.9: National MSAT Emission Trends 1999 – 2050 for Vehicles Operating on Roadways Using USEPA's MOVES2010b Model

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

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

Incomplete or Unavailable Information for Project-Specific MSAT Health Impacts Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The USEPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. The agency is the lead authority for administering the FCAA and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The USEPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. The agency maintains the IRIS, which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (USEPA, http://www.epa.gov/iris/). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations also are active in the research and analyses of the human health effects of MSAT, including the HEI. Two HEI studies are summarized in Appendix D of FHWA's Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA Documents. Adverse health effects linked to MSAT compounds at high exposures include: cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI, http://pubs.healtheffects.org/view.php?id=282) or in the future as vehicle emissions substantially decrease (HEI, http://pubs.healtheffects.org/view.php?id=306).

The methodologies for forecasting health impacts include emissions modeling, dispersion modeling, exposure modeling, and then final determination of health impacts, with each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) MSAT assessments, particularly because assumptions have to be made regarding changes in travel patterns and vehicle technology (both of which affect emissions rates) over that timeframe, and such information is generally unavailable. It is also particularly difficult to reliably forecast 70-year lifetime concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, with such information being similarly unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (http://pubs.healtheffects.org/view.php?id=282). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The USEPA (http://www.epa.gov/risk/basicinformation.htm#g) and the HEI (http://pubs.healtheffects.org/getfile.php?u=395) have not established a basis for quantitative risk assessment of diesel PM in ambient settings.

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the USEPA as provided by the FCAA to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries.

The decision framework is a two-step process. The first step requires the USEPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than one in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld the USEPA's approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable.

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits. These benefits include reducing traffic congestion, accident rates, and fatalities, as well as improved access for emergency response, each of which is better suited for quantitative analysis.

In conclusion, Caltrans has provided a quantitative analysis of MSAT emissions relative to the various alternatives, and has acknowledged that some alternatives may result in increased MSAT emissions in certain locations. However, no meaningful differences in MSAT emissions were observed amongst alternatives and thus no mitigation measures are required. In addition, due to the described uncertainties regarding concentrations and the duration of exposures, the health effects from these emissions have not been estimated.

Construction Impacts

I-5 construction would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. Specifically, construction activities associated with segment widening, mainline bridge construction, and overcrossing/undercrossing construction would generate air pollutants. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions.

The principal criteria pollutants emitted during construction would be PM_{10} and $PM_{2.5}$. The source of these pollutants would be fugitive dust, created during clearing, grubbing, excavation, and grading; demolition of structures and pavement; vehicle travel on paved and unpaved roads; and material blown from unprotected graded areas, stockpiles, and haul trucks.

A secondary source of pollutants during construction would be the engine exhaust from construction equipment. The principal pollutants of concern would be nitrogen oxides (NO_X) reactive organic gases (ROGs), and volatile organic compounds (VOCs) emissions that would contribute to the formation of O_3, a regional nonattainment pollutant.

Site preparation and roadway construction typically involve clearing, cut-and-fill activities, grading, removal of or improvement to existing roadways, and paving of roadway surfaces. Construction-related effects on air quality from proposed highway improvements would be greatest during the site preparation and demolition phases, which involve excavation, handling, and transport of soils to and from the site. These activities could temporarily generate PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site could deposit mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions also would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Construction activities for large development projects are estimated by the USEPA to add 1.2 tons of fugitive dust per acre of soil disturbed per month of activity. If water or other soil stabilizers are used to control dust, the emissions can be reduced by up to 50 percent. Caltrans' Standard Specifications (Section 14-9.02) pertaining to dust minimization requirements require use of water or dust palliative compounds and would reduce potential fugitive dust emissions during construction.

In addition to dust-related PM_{10} emissions, heavy-duty trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_X, VOCs, and some soot particulate (PM_{10} and $PM_{2.5}$) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Federal conformity regulations require analysis of construction impacts for projects when construction activities will last for more than five years. The proposed project would be broken into separate contracts of construction each lasting less than five years; therefore, no quantitative estimates of regional construction emissions are required. However, the Air Quality Analysis, dated August 2007, did perform a construction emissions analysis and found that activities limited to 6.6 miles of roadway and bridge construction working simultaneously in the region would not have a significant impact on air quality. For further analysis related to this topic, please review the noted Air Quality Analysis. In addition, it is recommended that specific measures to control dust and particulates be incorporated into project specifications. These measures are identified in *Section 3.14.4*.

Minimal air quality impacts could also occur from construction of the proposed community enhancement projects. Construction of the majority of the community enhancements would occur within the project's construction footprint and these were accounted for within the construction emissions budget. Grading, paving, and landscaping for these features would be accomplished in conjunction with the freeway project, as described in *Section 2.3* and demonstrated on *Tables ES.12* and *ES.13* of this Final EIR/EIS.

Emissions from the construction phase of the project were estimated through the use of emission factors from the Sacramento Metropolitan Air Quality Management District's

(SMAQMD) Road Construction Model Version 6.3.2,[1] which was released in July 2009 and was the most recent version when the analysis was performed.[2] Assumptions from the 2007 Air Quality Report were used when running the current Road Construction Model Version 6.3.2, with the exception of start date. The modeled bridge construction scenario assumed a project length of 0.036 mi and an area of 4.3 ac, constructed during a 12-month period. Daily maximum area disturbed was assumed to be 0.9 ac per day, and no soil import or export haul trucks trips would be made. The modeled roadway widening scenario assumed a project length of 1.3 mi and an area of 28 ac, also constructed within a 12-month period. For this scenario, daily maximum area disturbed was assumed to be 4.6 ac per day and 4,000 cubic yards (cy) of soil import was assumed per day, resulting in 200 round-trip haul truck trips per day. For the purposes of estimating emissions, construction phasing for both the bridge construction and roadway widening model scenarios included the following assumptions:

- Grading/land clearing (1.2 months)
- Grading/excavation (5.4 months)
- Drainage/utilities/sub-grade (3.6 months)
- Paving (1.8 months)

Estimated maximum annual construction emissions of VOC, NO_X, CO, and PM_{10} generated during construction of the bridge construction scenario and the roadway widening scenario are presented in *Table 3.14.14.*

Table 3.14.14: Estimated Construction Emissions (tons/year)

Construction Phase	VOC	NO_X	CO	PM_{10}
Grubbing/Land Clearing	0.2	1.1	1.3	0.4
Grading/Excavation	1.7	12.1	14.2	2.2
Drainage/Utilities/Sub-Grade	0.7	3.8	4.3	1.3
Paving	0.1	0.7	1.1	0.1
Total of Construction Phases	2.7	17.7	20.9	4.0
De Minimis Limit	100	100	100	100

Source: Road Construction Model Version 5.1

Note: PM_{10} estimates assume 50 percent control of fugitive dust from watering and associated dust control measures.

Construction emissions are assessed against the federal general conformity *de minimis* thresholds, which are used to determine conformity of a federal action with existing air quality plans. The *de minimis* threshold for CO in an area under a maintenance plan is 100 tons per year. The *de minimis* thresholds for O_3 (eight-hour) moderate nonattainment are 100 tons per year for both NO_X and VOC. The *de minimis* threshold for PM_{10} nonattainment is 100 tons per

[1] The 2007 Air Quality Report for the *I-5 NCC Project* estimated potential construction air quality impacts resulting from construction activities. The report did not calculate CO_2 emissions as it was based on the SMAQMD Road Construction Emissions Model Version 5.1, which did not calculate CO_2. The SMAQMD Road Construction Emissions Model Version 6.3.2 estimates CO_2 emissions and provides more recent emission factors than Version 5.1; therefore, current criteria air pollutant emissions presented in this section are also estimated using Version 6.3.2 (i.e., EMFAC 2007 and OFFROAD 2007 emission factors).

[2] The SMAQMD released a more recent version in September 2012; however, it would tend to estimate lower air pollutant emissions because it reflects some Statewide measures that are intended to reduce off-road vehicle and heavy-duty truck emissions.

year. Although the SDAB is not a federal nonattainment or maintenance area for PM_{10}, it is a State nonattainment area; therefore, use of this limit would represent a conservative threshold. $PM_{2.5}$ is not a required pollutant to quantify according to the federal general conformity *de minimis* thresholds, and as a result, $PM_{2.5}$ is not included in this analysis.

Climate Change

Climate change is analyzed in *Chapter 4*, *California Environmental Quality Act Evaluation*. Neither the USEPA nor FHWA has published explicit guidance or methodology to conduct project-level GHG analysis. As stated on the FHWA's climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process—from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process would facilitate decision making and improve efficiency at the program level, and would inform the analysis and stewardship needs of project-level decision making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders regarding climate change, this issue is addressed in the CEQA chapter of this environmental document and may be used to inform the NEPA decision. The four strategies set forth by the FHWA to lessen climate change impacts correlate well with related efforts that the State has undertaken, and the FHWA is striving to deal with transportation and associated climate change issues. Specific strategies in these efforts include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours traveled.

3.14.4 Avoidance, Minimization, and/or Mitigation Measures

Most of the construction impacts to air quality are short-term in duration and, therefore, would not result in long-term adverse conditions. Implementation of the following measures, some of which may also be required for other purposes (such as storm water pollution control) would reduce any air quality impacts resulting from construction activities:

- The construction contractor shall comply with Caltrans' Standard Specifications in Section 14 (2010).

- Section 14-9.01 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.

- Section 14-9.02 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18.

- Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emission or at the right-of-way line, depending on local regulations.

- Spread soil binder on any unpaved roads used for construction purposes, and all project construction parking areas.

- Wash off trucks as they leave the right-of-way as necessary to control fugitive dust emissions.

- Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.

- Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.

- Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly.

- Near sensitive air receptors, establish Environmentally Sensitive Areas (ESAs) or their equivalent within which construction activities involving the extended idling of diesel equipment would be prohibited, to the extent feasible.

- Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.

- Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to minimize emission of dust (particulate matter) during transportation.

- Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.

- Route and schedule construction traffic to avoid peak travel times as much as possible, to reduce congestion and related air quality impacts caused by idling vehicles along local roads.

- Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area. Be aware that certain methods of mulch placement, such as straw blowing, may themselves cause dust and visible emission issues, and may need to use controls such as dampened straw.

- Locate construction equipment and truck staging and maintenance areas as far as feasible and nominally downwind of schools, active recreation areas, and other areas of high population density.

CERTIFICATE OF SERVICE

LYNDA F. JOHNSTON declares:

I am over the age of eighteen years and not a party to this action. My business address is 559 Nathan Abbott Way, Stanford, California 94305-8610.

On February 4, 2014, I served the foregoing **APPLICATION FOR LEAVE TO FILE AMICUS BRIEF BY CENTER ON RACE, POVERTY & THE ENVIRONMENT, COMMUNITIES FOR A BETTER ENVIRONMENT, ENVIRONMENTAL HEALTH COALITION, and PHYSICIANS FOR SOCIAL RESPONSIBILITY – L.A.; BRIEF OF AMICI CURIAE IN SUPPORT OF CROSS-APPELLANTS; and DECLARATION OF JASON S. GEORGE** on all persons identified below by placing a true and correct copy thereof in the United States Mail at Stanford, California, addressed to each recipient respectively as follows:

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On the same date, I also served a true and correct copy of the foregoing brief on the Supreme Court of California by electronic submission of a copy to the Court of Appeal.

I declare under penalty of perjury that the foregoing is true and correct, and that this declaration was executed February 4, 2014 at Stanford, California

LYNDA F. JOHNSTON