City Council Regular Meeting

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CITY OF FRESNO
CITY CLERK'S OFFICE

December 5, 2024

FRESNO CITY COUNCIL

City of
FRESNO

Public Comment Packet

ITEM(S)

9:20 A.M. #1 (ID 24-1571) HEARING to consider the adoption of the South Central Specific Plan and related Final Environmental Impact Report (Final EIR), State Clearinghouse (SHC) No. 2019079022. The following applications have been filed by the Planning and Development Director and pertain to approximately 5,567 acres in the South Industrial Priority Area:

[TITLE TRUNCATED FOR SUPPLEMENTAL PACKET COVER PAGE]

Contents of Supplement: Public comment received

Item(s)

Supplemental Information:
Any agenda related public documents received and distributed to a majority of the City Council after the Agenda Packet is printed are included in Supplemental Packets. Supplemental Packets are produced as needed. The Supplemental Packet is available for public inspection in the City Clerk's Office, 2600 Fresno Street, during normal business hours (main location pursuant to the Brown Act, G.C. 54957.5(2). In addition, Supplemental Packets are available for public review at the City Council meeting in the City Council Chambers, 2600 Fresno Street. Supplemental Packets are also available on-line on the City Clerk's website.
Americans with Disabilities Act (ADA):
The meeting room is accessible to the physically disabled, and the services of a translator can be made available. Requests for additional accommodations for the disabled, sign language interpreters, assistive listening devices, or translators should be made one week prior to the meeting. Please call City Clerk's Office at 621-7650. Please keep the doorways, aisles and wheelchair seating areas open and accessible. If you need assistance with seating because of a disability, please see Security.

From: [redacted]
To: [redacted]; Clerk
Cc: [redacted]
Subject: COMMENTS: 12/5/24 - ID 24-1571: South Central Specific Plan
Date: Wednesday, December 4, 2024 9:02:52 AM
Attachments: 12.4.24 - INVEST Fresno - SCSP NASCAR Letter.pdf

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External Email: Use caution with links and attachments

Good morning, Clerk Stermer:

I write today on behalf of INVEST Fresno and the undersigned organizations and businesses to express our strong concern with and opposition to the South Central Specific Plan (SCSP) and the related Draft Environmental Impact Report (DEIR).

We respectfully request the Council direct staff to amend the SCSP to better reflect input received from various property owners, business owners, operators, investors, and others outlined in previous public testimony and the letter below to encourage economic development, continued growth, and ensure that Fresno can continue to thrive for generations to come.

We appreciate your time and consideration. Please do not hesitate to reach out with any thoughts or questions. We look forward to working with the Council and staff to keep Fresno's economy moving.

Thank you,

--
Ben Granholm
Executive Director
INVEST Fresno
[redacted]

December 4, 2024

Annalisa Perea, President
City Council
City of Fresno
2600 Fresno Street, Room 3065
Fresno, CA 93721
[redacted]

Submitted Electronically

RE: ID 24-1571 - South Central Specific Plan and Final Environmental Impact Report

Dear Council President Perea and Council:

I write today on behalf of INVEST Fresno and the undersigned organizations and businesses to express our strong concern with and opposition to the South Central Specific Plan (SCSP) and the related Draft Environmental Impact Report (DEIR).

We respectfully request the Council direct staff to amend the SCSP to better reflect input received from various property owners, business owners, operators, investors, and others outlined in previous public testimony and the letter below to encourage economic development, continued growth, and ensure that Fresno can continue to thrive for generations to come.

INVEST Fresno is aligned in our position with the letter and recommendations submitted by John Kinsey, with Wanger Jones Helsley PC.

With the understanding that the status quo has created a defacto-moratorium on development in South Fresno and is not a suitable solution for continued growth and economic development within the city.

We are committed to working with the Council and staff to develop a plan that respects and meets the needs of existing businesses and property owners and facilitates the ability of the city to attract new businesses and industries while also providing mitigation.

As currently proposed, the SCSP contains several provisions that are highly concerning to the continued operation and future expansion of existing businesses in South Central Fresno, including, but not limited to, the downzoning of various properties, the inclusion of 1,000-foot buffer zones, and onerous mitigation requirements. The consequences of these changes could destroy living wage jobs and significantly reduce vital tax revenue in Fresno.

DOWNZONING

The SCSP proposes downzoning numerous properties from Heavy Industrial to Light Industrial and other properties from Light Industrial to Business Park, Regional Business Park, or even residential. The proposed downzoning will have wide-ranging impacts on the current and future operations of existing businesses as well as the ability of Fresno to attract new businesses.

Downzoning severely affects landowners and employers by making their properties inconsistent with the new zoning regulations. This change reduces Fresno's attractiveness to reputable and well-capitalized businesses who want to invest in Fresno. Rezoning that creates non-conformities makes obtaining conventional financing nearly impossible — impacting capital improvements necessary for maintenance, beautification, and clean energy upgrades.

Legal non-conforming uses make it incredibly difficult for landowners to change tenants even in favorable conditions, and during an economic downturn, it almost guarantees the loss of legal non-conforming status. Additionally, landowners cannot switch from one legal non-conforming use to another. Any enlargement of a legal non-conforming use requires a conditional use permit (CUP), which hampers the ability to attract reputable, national industrial tenants, and further reduces the potential to re-let industrial properties.

Additionally, the proposed downzoning throughout the plan would be devastating to Fresno's manufacturing sector. The Central Valley has long prided itself in being an epicenter for career-technical and vocational education and workforce development.

The State Center Community College District has invested hundreds of millions to ensure thousands of students each year receive the hands-on education and skill training local employers need. Limiting the growth of these businesses not only reduces the opportunities for these graduates but directly affects the future of Fresno's workforce and the city's economy.

BUFFER ZONES

The inclusion of 1,000-foot buffer zones in the SCSP is quite alarming. The proposed downzoning of numerous properties, combined with the proposed buffer zones, results in nearly 50% of the SCSP area being impacted by and subject to the proposed onerous requirements.

The buffers would prohibit certain warehousing and distribution activities, such as chemical and mineral storage and freight/truck terminals, and reclassify other activities, including "Limited Industrial" and most warehousing and distribution uses, as conditional uses. Additionally, Health Risk Assessments would be required for all industrial processes, construction, and operations of businesses, regardless of the land use intensity or the probability of adverse health impacts. This will substantially increase costs and, as a result, drive businesses out of Fresno or drive up prices for consumers.

A 1,000-foot buffer zone is far outside the norm and three times greater than the standard endorsed by California Attorney General Rob Bonta. In 2022, the California Department of Justice reached a settlement agreement with the City of Fontana relative to their approval of warehouse developments, requiring warehouses that are 400,000 square feet or larger to establish a setback of 300 feet from the property line of the nearest sensitive receptor. In a statement announcing the agreement, Attorney General Bonta stated, "… the City of Fontana has adopted the most stringent environmental standards in California for new warehouse projects. This ordinance should serve as a model for other local governments across the state to build upon."

Additionally, the 2022 agreement with the City of Stockton required that logistics uses and their associated loading docks are no closer than 300 feet from sensitive receptors. In response to the agreement, California Attorney General Rob Bonta stated, "I hope this serves as a model for future warehouse projects across the state."

Finally, the California State Legislature has repeatedly rejected recent efforts (AB 1000, Reyes, 2023, and AB 2840, Reyes, 2022), which would have prohibited public agencies in San Bernardino and Riverside Counties from approving the development or expansion of a warehouse of 100,000 square feet or more within 1,000 feet of a sensitive receptor. Furthermore, the State Legislature recently adopted and the Governor signed AB 98, which, among other things, establishes a 300-foot buffer zone for warehouses of 250,000 square feet or larger. Once again proving that a 1,000-foot buffer zone is far and above the scientifically accepted or reasonable distance from sensitive receptors.

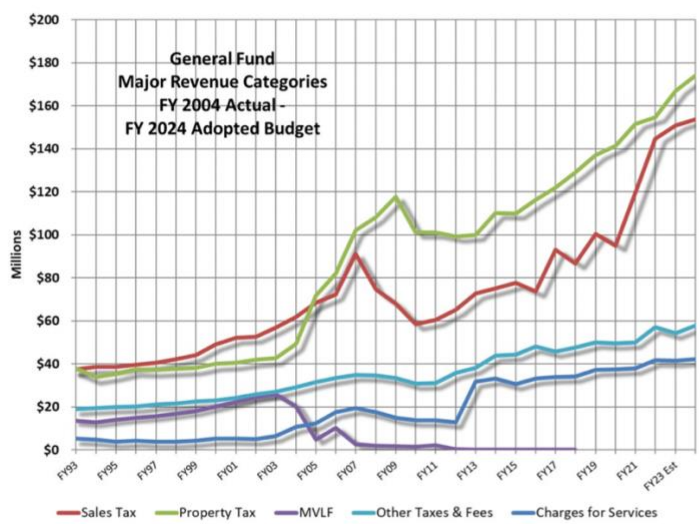
We are currently unaware of any city or county near Fresno that has implemented 1,000-foot buffers. Given the significant demand for industrial development within the city and the limited available locations for such projects, adopting these buffers would likely push new industrial developments—and the jobs and tax revenue they bring—to neighboring municipalities. We cannot support any policy that would jeopardize Fresno's success as an industrial hub or encourage our workforce to relocate.

SCSP ECONOMIC & COMMUNTIY BENEFITS

South Central Fresno is the city's economic engine and delivers an outsize impact for the entire city, while fewer than a quarter of one percent of residents live within the 5,629-acre planning area. In 2022, this area, which represents 7.5% of the city's land, generated approximately $13 billion in economic activity (35% of the city's total economic output) and more than $102 million in tax revenue (21% of the city's general fund). A full breakdown of the SCSP's economic benefit to the entire city can be found at: INVESTFresnoCA.com/EconomicImpact.

Home to more than 440 businesses, the SCSP directly provides approximately 22,070 full-time equivalent (FTE) jobs and creates nearly 48,000 FTE jobs citywide (25% of the City's FTE employment). Additionally, the average annual wage for the provided FTE jobs is slightly higher than the rest of the city at $68,000.

In the past six years, Fresno's new retail distribution economy has taken flight — increasing the city's sales tax revenue at unprecedented levels. It took the preceding 20 years for Fresno to experience a similar amount of growth in sales tax revenue. Unlike traditional sales tax revenue that is only generated from purchases within the city, Fresno receives sales tax revenue from items that are shipped from local retail distribution centers regardless of whether the shopper lives in Fresno, Los Angeles, or another state.



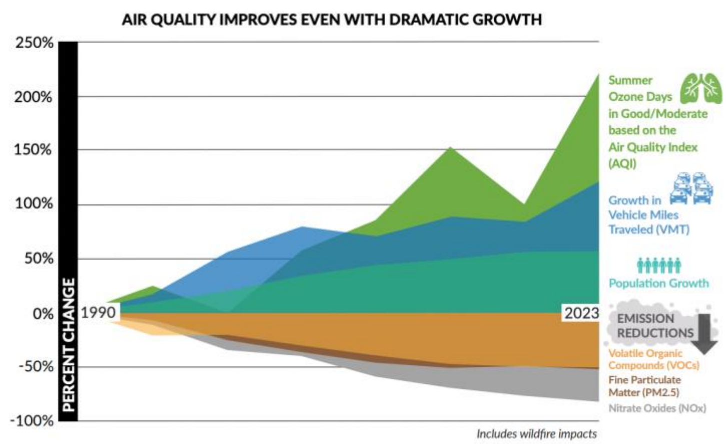
Source: City of Fresno, FY 2025 Mayors Proposed Budget

Bolstering the city's General Fund provides benefits for all Fresno residents – all of which support essential city and community services like public safety, parks, infrastructure improvements, and numerous other critical programs that residents rely on every day.

AIR QUALITY IMPROVEMENTS

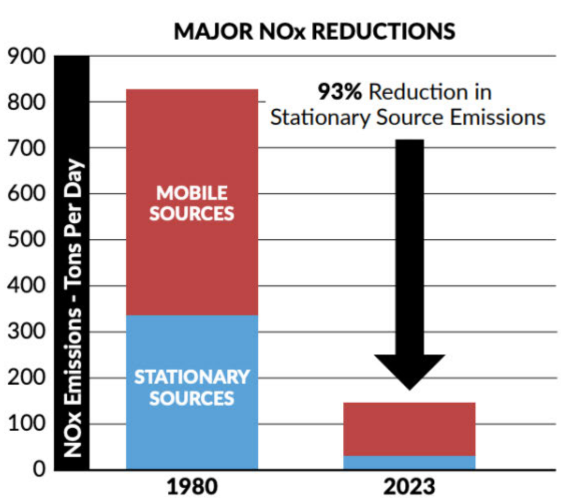
Due to the Valley's topography and meteorology, surrounded by mountains and subject to frequent temperature inversions, pollutants become trapped, and, as a result, cities like Fresno, Visalia, and Bakersfield wind up at the top of the state's most polluted cities. While ominous, this is not the end of the story.

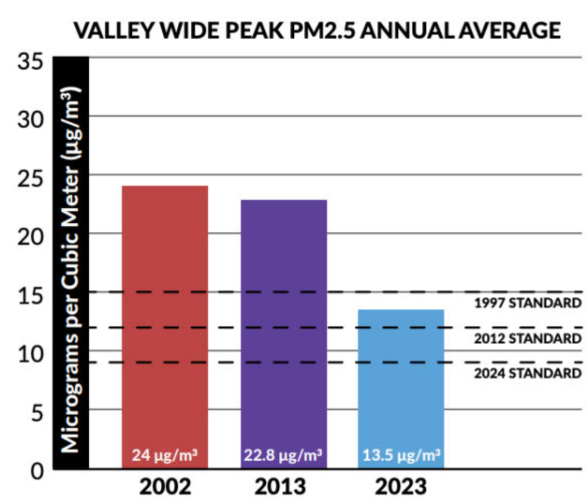
The primary pollutants of concern in the Central Valley are ground-level ozone, and fine particulate matter (PM2.5), including diesel particulate matter (DPM). Since 1980, the Central Valley has reduced emissions of these pollutants from stationary sources (i.e., oil production and refining, boilers, and other stationary equipment) by 85%. According to the EPA, regulations on mobile sources such as cars and light trucks have reduced emissions by 99 percent since 1970. Heavy-duty trucks are roughly 99 percent cleaner than 1970 models.



Source: [San Joaquin Valley Air Pollution Control District, 2023 Annual Report]()

Whereas, Valley residents' exposure to elevated ozone and fine particulate matter (PM2.5), often cited as one of the most harmful to the lungs, has also fallen by 90% and 85% respectively. In total, this has led to a 95% reduction in cancer risk for Valley residents from exposure to air pollutants according to the San Joaquin Valley Air Pollution Control District.





Source: *[San Joaquin Valley Air Pollution Control District, 2023 Annual Report]()*

These historic reductions in air pollution over the past 40 years were accomplished at the same time Fresno's population grew 2.5 times larger and our local economy more than doubled in size.

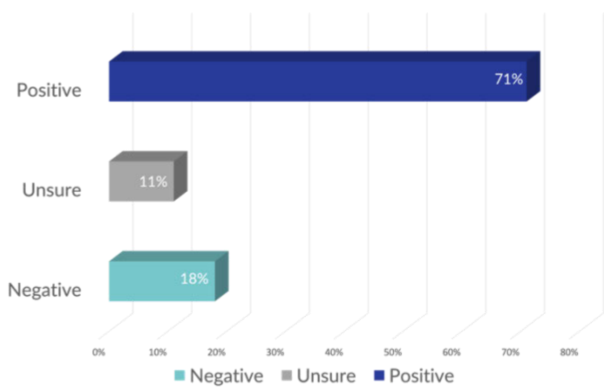
Since 1992, the San Joaquin Valley Air Pollution Control District has implemented roughly 650 rules and regulations that, along with California's nation-leading regulations on cars and trucks, are helping to steadily improve the air quality in the Valley.

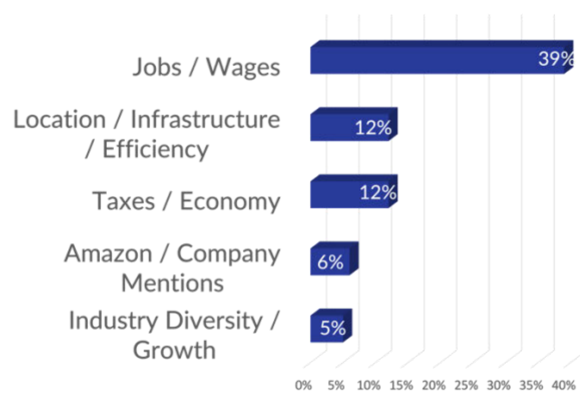
All this illustrates that the key to clean air and a healthy community is a strong and growing economy.

CONCLUSION

The proposed downzoning, buffer zones, mitigation requirements, and limited protection from legal non-conforming use provisions will result in existing businesses abandoning the city and repel new businesses from entering – along with the countless jobs and significant tax revenue they generate.

A recent public opinion survey commissioned by INVEST Fresno, representative of the voting electorate across all seven council districts, showed overwhelming support for the city's retail distribution and warehousing business sector. **71% of respondents stated they believe retail distribution and warehousing to be a net positive for the local community**, with 39% identifying jobs and wages as their top reason for supporting the industry.





Additional findings from the survey can be found at: INVESTFresnoCA.com/Survey.

As the community of Fresno, if we are going to continue the progress we are making and redouble our commitment to raising the standard of living for low-income families, then we must do all that we can to support a diverse and growing economy. A pivot away from a growth-oriented economy here in Fresno would reverse the incredible success our community has seen and risk more families falling into poverty.

A growing economy and sensible air quality regulations have to work in tandem. The transition to zero-emission heavy-duty trucks cannot be achieved if policies are enacted that discourage and limit Fresno's economic growth, which is necessary to afford this new technology.

In short, neither the status quo nor the SCSP are tenable solutions. As a result, the City Council should not just deny the SCSP as currently proposed, but also provide clear direction to staff to actively work with industry and residents to develop a plan that will not jeopardize the City's competitiveness, but facilitate a strong and diverse economy, including:

- Ensure that changes in zoning and land use designation will not occur absent the consent of the underlying landowners.

- Ensure that the city does not expand or impose mandates that are more burdensome than California's already aggressive and conservative laws and regulations relating to the establishment of buffer areas and electric fleet mandates such as AB 98 and CARB's Advanced Clean Fleet regulation.

- To the extent there are concerns regarding specific communities or sensitive receptors within the South Central area, staff should evaluate solutions targeted to that specific community/sensitive receptor as opposed to a one-size-fits-all approach that would negatively affect business without providing objective or tangible outcomes.

- Identifying infrastructure and other improvements that will lift up the South Central community, and directly improve the quality of life for South Central residents, including parks, air filters, roadway enhancements, etc.

We appreciate your time and consideration and respectfully urge the Council to reject the SCSP as currently proposed and direct staff to amend the SCSP to better reflect input received from various property owners, business owners, operators, investors, and others as outlined above.

The city should look to implement policies that support and encourage investment in Fresno's infrastructure that result in community improvement, encourage economic development, and ensure that Fresno can continue to thrive for generations to come.

If you would like to discuss this matter further, please do not hesitate to contact Ben Granholm at info@INVESTFresnoCA.com. We look forward to working with you and staff to help keep Fresno's economy moving.

Sincerely,

[redacted]

Ben Granholm
INVEST Fresno

Advanced Emission Control Solutions, LP
Betts Company
Buzz Oates
Cedar Avenue Recycling & Transfer Station
Central Valley Business Federation
Certified Meat Products
Cossette Investment Company, Inc.
Cushman & Wakefield
Don Pickett & Associates
Diversified Development Group

Fowler Packing
Fresno Business Council
Fresno Chamber of Commerce
Fresno County Farm Bureau
JD Food
La Tapatia Tortilleria, Inc.
Legacy Construction
Newmark Pearson Commercial
North Pointe Business Park
Pickett Solar
Precision Civil Engineering, Inc.
Robert V. Jensen, Inc.
San Joaquin Valley Manufacturing Alliance
Strategic Freight Network
Sunnyland Mills
Tank Specialties of California
Valley Iron, Inc.
Valley Wide Beverage

cc: Jerry Dyer, Mayor
Georgeanne White, City Manager
Councilmembers, City of Fresno

From: [redacted]
To: [redacted]
Cc: [redacted]
Subject: December 5, 2024 Hearing on South Central Specific Plan
Date: Wednesday, December 4, 2024 9:04:47 AM
Attachments: Letter to the Fresno City Council regarding December 5,. 2024 Hearing on South Central Specific Plan.pdf

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Good Morning,

Please see the attached correspondence of today’s date.

Thank you,
Hannah N. Wilhelm
Legal Assistant/Paralegal to:
John P. Kinsey
Nicolas R. Cardella
Hunter C. Castro
Kathleen DeVaney
Wanger Jones Helsley PC
[redacted].
[redacted]
Fresno, CA 93720
[redacted]

WANGER JONES HELSLEY PC
ATTORNEYS

[redacted]
FRESNO, CALIFORNIA 93720

MAILING ADDRESS
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JOHN P. KINSEY
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TROY T. EWELL
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MARISA L. BALCH†
AMANDA G. HEBESHA**
PETER M. JONES†
JEFFREY B. PAPE†
DEBORAH K. BOYETT
STEVEN K. VOTE
NICOLAS R. CARDELLA
GIULIO A. SANCHEZ
KATHLEEN D. DEVANEY
ETHAN E. MORA†
BENJAMIN C. WEST
HUNTER C. CASTRO
STEPHANIE M. HOSMAN
IAN J. QUINN††
RACHEL L. POMBO
NATHAN J. MARTIN
COLTEN D. BALLINGER
COLLEEN E. LITTLE
DANIKA E. JONES
DANIEL J. FREA
JESSICA L. VIVED

* Also admitted in Washington
** Also admitted in Idaho
† Of Counsel
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December 4, 2024

VIA EMAIL

Fresno City Council
c/o City Clerk
CITY OF FRESNO
2600 Fresno Street, Room 2097
Fresno, CA 93721

Re: December 5, 2024, Hearing on South Central Specific Plan

Dear Honorable Members of the City Council:

My law firm represents numerous landowners and businesses located within the South Central Specific Plan ("SCSP") area. I write to urge the City Council to deny the SCSP in its current form. However, that denial should be coupled with clear direction to staff to perform significant revisions to the SCSP before bringing the document back to the Council for consideration.

The *status quo* is untenable. For the past six years, industrial vacancy rates across the City of Fresno have been historically low—oftentimes as low as 1%. Despite unusually low vacancy rates, new industrial development has been essentially non-existent in the City. This is because development is already very challenging under the 2014 General Plan and the City's existing policies applicable to South Central Fresno.[1] Other nearby communities have reaped the economic benefit associated with the inability to entitle and construct new industrial development in the City of Fresno. For example, the Riggin Avenue corridor in Visalia has added millions of square feet of new warehouse and logistics space at the same time such similar development has essentially stalled out in the City of Fresno.

In the abstract, a well-conceived plan-level document could foster economic development by providing a set of clear and comprehensive guidelines for local developers and businesses, while at the same time reducing negative environmental consequences. Unfortunately, the SCSP as it is currently envisioned achieves none of those objectives. Rather, the SCSP thwarts economic investment and development by downzoning properties against the wishes of the underlying landowners. At the Planning Commission, staff conceded this would result in a loss of value to affected landowners. The SCSP also includes buffer areas and electric truck mandates that are different from—and far more onerous than—the already aggressive mandates adopted by the State of California under AB 98 and the Advanced Clean Fleets regulation, threatening to create a confusing patchwork of onerous regulations. And when asked by the Planning Commission whether the SCSP would "hurt business," staff confirmed this would be a likely result.

At the same time, the SCSP as currently envisioned does little, if anything, to achieve any positive results for communities such as Daleville, Malaga, or Calwa. At most, the SCSP would simply result in the freezing of all development in South Central Fresno, which is simply a continuation and exacerbation of the *status quo*. However, due to the City's strict grandfathering rules that remove a building's legal non-conforming status after 90-days of vacancy, a more likely outcome is that once a tenant moves away from a building, it will lie vacant and unusable—even in a good market—due to the loss of its legal non-conforming status, and the lack of a viable market to develop to the new land use. Vacant and unusable buildings help nobody, and themselves create undesirable environmental and socio-economic consequences.

In short, neither the *status quo* nor the SCSP are tenable solutions. As a result, the City Council should not just deny the SCSP as currently envisioned, but also provide clear direction to staff to actively work with industry and residents to develop commonsense solutions that will not jeopardize the City's competitiveness vis-à-vis other nearby communities. The direction to staff should include:

- Ensuring that changes in zoning and land use designation will not occur absent the consent of the underlying landowners.

[1] For example, virtually all new construction and/or changes in land use require a full environmental impact report, a cost that only a small handful of landowners can absorb.

- Ensuring the City does not expand or impose mandates that are more burdensome than California's already aggressive and conservative laws and regulations relating to the establishment of buffer areas and electric fleet mandates-such as AB 98 and CARB's Advanced Clean Fleet regulation.

- To the extent there are concerns regarding specific communities or sensitive receptors within the South Central area, staff should evaluate solutions targeted to that specific community/sensitive receptor as opposed to a one-size-fits-all approach that would negatively affect business without providing objective or tangible outcomes.

- Identify infrastructure and other improvements that will lift up the South Central community, and directly improve the quality of life for South Central residents, including parks, air filters, roadway enhancements, etc.

By identifying specific benchmarks for staff, the City Council can foster the creation of a plan-level document that will not only promote jobs and economic growth, but also positive environmental outcomes. Economic development and environmental stewardship should not be mutually exclusive, and the City should actively work with industrial stakeholders to mutually develop commonsense solutions that will not jeopardize job creation or the City's economic competitiveness.

Thank you for your consideration of these important comments.

Respectfully submitted,

John P. Kinsey

From: [redacted]
To: [redacted] Agendas
Cc: [redacted]
Subject: Agenda Item 1 - South Central Specific Plan Comments
Date: Tuesday, December 3, 2024 3:08:25 PM

From: Leslie Martinez [redacted]
Sent: Tuesday, December 03, 2024 2:25 PM
To: Gabriela Olea [redacted] Karla Martinez-Arias [redacted]
Subject: Agenda Item 1 - South Central Specific Plan Comments

External Email: Use caution with links and attachments

Bertha Castillo
We're here to support our neighbors and the environmental impacts they feel, and they also impact us.

There's enough contamination. Have compassion for our children. They have asthma, cancer, and the truth is that their future is not going to be great.

My grandchildren have asthma, my neighbors have cancer, and I wish everything was different for our children, it's important for our community.

Fermin Salas
It seems like we get 60-70% going to the southwest or southeast. I want to know who's got the power, It is a mess up over there.

We need the businesses, and I understand what some of these people are saying, that Fresno needs businesses because we're in the middle of Los Angeles and San Francisco.

We need more work too, a lot of people need work. I'm just going to say, why can't we spread the health around, spread the wealth around, to that side and that side, why?

Why can't we do it? Who has the power to do it?

Martha Leon
I have asthma, and so does my daughter and her son. And it has to be because there are just so many trucks, there's so much heavy truck traffic.

I go with her to Clovis for therapy, and it's a different life. Because when I go there it's another air that you breathe.

And I would like to live a little longer, so that I can spend time with my grandkids. Thank you.

--

Leslie Martinez (she/her)
Community Engagement Specialist
Leadership Counsel for Justice and Accountability
[redacted]

From: [redacted]
To:
Cc:
Subject: Agenda Item 1 -ID 24-1571 (SCSP)
Date: Tuesday, December 3, 2024 12:51:07 PM
Attachments: Katie Taylor SCSP DEIR Comment - Letter Version.docx

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External Email: Use caution with links and attachments

Please see the attached letter to be entered into the record on behalf of Ms. Katie Taylor.

--

Leslie Martinez (she/her)
Community Engagement Specialist
Leadership Counsel for Justice and Accountability
[redacted]

Sophia Pagoulatos
Planning Manager
City of Fresno
Planning and Development Department
2600 Fresno Street, Room 3065
Fresno, CA 93721
[redacted]

Re: Fresno South Central Specific Plan Draft Environmental Impact Report
(SCH# 2019079022)

Dear Ms. Pagoulatos,

My name is Katie Taylor. I am 78 years old and a resident of Fresno, California. For over fifty years, I have lived and raised my family on Central Avenue, near its intersection with Orange Avenue. My home is located within the area of the proposed South Central Specific Plan.

The street I live on is a frontage road. There is a water canal that separates the frontage road from the main portion of Central Avenue. Trucks are not supposed to be on the frontage road, but they are anyway. When trucks come off the freeway on their way to industrial facilities all around South Central Fresno, the frontage road is easier for them to get to. My street is supposed to be residential, but the heavy duty trucks drive by constantly, just 16 feet from my doorstep.

My neighborhood has seen a substantial increase in heavy truck traffic over the past few years, as the City and County have allowed large industrial warehouses to be built right next door. In 2017, The Amazon Fulfillment Center was constructed across the street from my house. The same year, the Ulta Beauty distribution center was built less than half a mile away. There are other large facilities near my house, including the FedEx terminal. Several other truck terminals and truck stops have been built around my neighborhood in the last few years as well. There is a truck driving school roughly 50-100 feet from my house. The truck school has become a lot more active than it was before the warehouses and facilities came in.

My neighborhood is an unacknowledged cancer cluster. My husband, daughter, and my son have all passed away from cancer. Nearly every home along my road has had someone who has died of or is currently fighting cancer. I have a heart condition and thyroid problems. I have allergies as well. My allergies have gotten worse since the warehouses were built. Some of my neighbors' children have asthma, which they say has gotten worse.

Trucks travel to and from the facilities and warehouses 24 hours a day, seven days week. I can hear a loud rumbling from the trucks at all hours of the day and night, and the vibrations from the trucks shake my house. People who come visit my house are shocked by how much truck traffic there is now. The noise from the trucks is so loud that it is sometimes hard to hear my visitors talking. I also have a hard time falling asleep because of the noise. About twice a night I'll get up because there's a loud sound, almost like there's someone knocking on my door.

But it’s just a truck at the stop sign waiting to go. I’ve talked to other neighbors, and they’ve said the same thing.

With the heavy duty trucks passing by so close to my house and so often, I feel very unsafe. People I know that walk around the neighborhood have to be very careful because of the traffic. My daughter has down syndrome and autism, and I have to make sure she doesn’t go outside because it isn’t safe for her. Even when I’m driving, I’m worried about traffic safety. I have noticed more traffic accidents since the warehouses came in. Some of the Amazon employees drive very recklessly, coming off of long shifts and trying to get home as soon as possible. I know when the main Amazon shifts end; I avoid being on the road at those times.

The trucks going to and from the facilities also create a lot of dust and fumes, which cover my house and car constantly. I have to clean the dust off the windows of my house and car almost every day. The dust also seeps into my house through cracks in my doors and windows. My neighbors complain about the dust getting inside their houses too.

Traffic lights were put up at the intersection of Central and Orange when the Amazon warehouse was constructed. The lights are very bright and blink continuously. They shine into my windows, which disrupts my sleep. The constant flashing of the traffic lights is very disturbing for my daughter because of her condition.

I have noticed that my neighborhood has become hotter since the warehouses were constructed, including during the night. I am forced to use my air conditioning more, which increases my energy bill. My neighbors have also noticed that it is hotter, that the neighborhood does not seem to cool down as much in the evening as it used to, and that they have to use their air conditioners more.

The water pressure at my house dropped a few years ago, and I had to get a water tank. I also found out that my tap water was contaminated. One of my family members tested the water and found that it was not safe to drink. A person from UC Davis came and tested my water too and told me not to drink it because of the contamination.

I am worried that the value of my house has gone down because of the warehouses and other facilities. I believe that the value of my neighbors' houses has gone down too. This really hurts us because we do not have very much money. My home is my main source of wealth, and we are trying to pass our homes down to our kids to help support them economically.

When my neighbors and I have talked to the City and the developers, we tell them about the noise, dust, traffic, health problems, lowered property values, and other impacts from the warehouses and other industrial projects. But they ignore us and keep building projects here without even notifying us first. We didn’t even know Amazon was coming. When the orchard trees across the street first started getting plowed, I thought the owners were just going to plant more fruit trees. I had no idea they were cutting down the fruit trees for a warehouse.

Sometimes the City does send out a notice for a meeting, but often without giving residents enough time to respond. People need time to prepare for meetings. In this community, people are doing farm work. They can’t just get off their jobs at a moment’s notice.

The traffic, noise, dust, health, and other impacts from the facilities have caused me to suffer from a significant amount of stress and anxiety. For example, the abrupt loud noises and flashing lights are very unnerving and stressful. The heavy traffic from cars and trucks makes me constantly worry about my family's safety. My daughter has also said that she worries about the traffic, noise, and other impacts from the facilities.

The South Central Specific Plan zones my home catty corner from heavy industrial uses. It also replaces much of the remaining farmland around us with other industrial or business park uses. I am very concerned that increased warehousing, industrial development, and traffic under the South Central Specific Plan will intensify the safety issues and noise, light, and air pollution that my family and community already face every day.

I am aware that the City has drafted a Truck Reroute Study. However, this study is not going to help us. One of the existing and proposed truck routes in the Truck Reroute Study runs down Orange Avenue to Central Avenue—the intersection where I live. Neither the South Central Specific Plan nor Truck Reroute Study give my community any reprieve from the heavy truck traffic and related impacts that we're dealing with. In fact, the impacts will only get worse, especially when the effects of the South Central Specific Plan and Truck Reroute Study are combined.

It feels like we are not being heard. It feels like the City and County are bullying us—like we are being targeted because of our race and because we do not have a lot of money. I understand that people have to work, but it's unfair for the industrial development to keep happening right in our neighborhood. We have our little homes out here; they're not grandiose. Nevertheless, we have our community, our families, our functions. We just want that to stay intact.

Thank you for your time and consideration,

Ms. Katie Taylor

From: [redacted]
To:
Cc:
Subject: Agenda Item 1 - SCSP
Date: Tuesday, December 3, 2024 3:07:07 PM
Attachments: SCSP.pdf

From: Leslie Martinez [redacted]
Sent: Tuesday, December 03, 2024 2:23 PM
To: Clerk [redacted] Karla Martinez-Arias [redacted] Gabriela Olea [redacted]
Subject: Agenda Item 1 - SCSP

External Email: Use caution with links and attachments

Please see attached. comment for SCSP from Lilia Becerill.

--

Leslie Martinez (she/her)
Community Engagement Specialist
Leadership Counsel for Justice and Accountability
[redacted]

December 3, 2024

Submitted via email clerk@fresno.gov

Attn. President Annalisa Perea
City Council
2600 Fresno Street
Fresno, CA 93721

RE: Agenda Item 1 - South Central Specific Plan

Dear President Perea,

Thank you for the opportunity to comment on the SCSP.

Families in Accion is a local nonprofit community organization working to ensure that South Fresno neighborhoods and families have the tools and resources they need to live happy and healthy lives. We work tirelessly to ensure that families are connected to resources and develop leadership skills to better serve and advocate for their communities' needs.

Since we are based in Southeast Fresno, we are keenly aware of the impacts of industrialization and poor land use decisions on communities. Our communities bear the brunt of the environmental effects on our bodies. We suffer from asthma, allergies, cancer, lung problems, and the mental stress of trucks driving near us, our jobs are low paying, and we lack green spaces. We strongly believe that this plan does not do enough to protect the school children and families of South Central and the lungs of our entire city. We have the worst air in the country and plans that look for ways to bring more pollution into our city have no place in South Fresno.

Fresno should not allow ANY polluting land use near Orange Center Elementary School. The land around Orange Center Elementary School should not be used to bring in more pollution that will affect the surrounding homes and places of worship because what affects them affects us. As neighbors, we understand that airborne pollutants travel for miles, and families in Southeast Fresno residents will be impacted too.

We request that the council direct staff to go back into the community and develop a plan that prioritizes the health of South Central and addresses decades of environmental racism.

In solidarity with South Central,

Lilia Becerill
Founder and Director
Familias en Accion

From: [redacted]
To: [redacted]
Subject: Agenda Item 1 - SCSP
Date: Tuesday, December 3, 2024 3:09:23 PM

From: Leslie Martinez [redacted]
Sent: Tuesday, December 03, 2024 2:41 PM
To: Gabriela Olea [redacted]; Karla Martinez-Arias [redacted] Clerk [redacted]
Subject: Agenda Item 1 - SCSP

External Email: Use caution with links and attachments

Panfilo Cerillo is unable to attend as he is at a conference on behalf of Orange Center Elementary

I'm here to talk to you a little bit about how all this industrial development has affected us as a people, as a community, as fathers, as grandparents, as students of Orange Center School. I heard a few people mention that their families have generations living in the area. So does my family. And, along with that, I think that it's very important to mention that Orange Center School was established in 1838. Now, that's almost 200 years, right? There's a long term tradition there. This school was originally built at its current location for over 500 students, and today we're down to only 269. The biggest part of that is that most of our residential in the area has been gobbled up by industrial commercial properties.

My kids used to walk to Orange Center Elementary School. Right now, the traffic there has gotten so dangerous that the school itself will tell the parents do not allow your children to walk. Please, do not allow your children to walk. They're walking, you're talking about preschool, K through 8, young kids whose lives are just developing having to walk right next to semi trucks. The residents there, their houses shake, the superintendent told me that their office shakes from the rattling of the semi trucks going through there. And here we are on the north and the south side and the entire west side of the school and we're planning industrial development? Now any one of you up there that's sitting there, I guarantee you that you would not want your children attending an elementary school where your kids have to walk and they're walking right next to semi trucks doing 70 miles an hour.

So I'm here to ask that you not only deny this plan, but that you sit back with the residents of the community who have been speaking out for a very long time and asking you to stop this.

--
Leslie Martinez (she/her)

Community Engagement Specialist
Leadership Counsel for Justice and Accountability
[redacted]

From: [redacted]
Subject: Comments on November 30 Draft SCSP
Date: Wednesday, December 4, 2024 8:49:25 AM
Attachments: Comments on November Draft SCSP.pdf
draft SCSP comment letter.pdf

External Email: Use caution with links and attachments

Good Morning,

Please find attached a letter from Leadership Counsel for Justice and Accountability, regarding comments on the November Draft South Central Specific Plan. Please confirm your receipt of the attached comments for consideration at the regular City Council meeting on December 5, 2024, under Agenda Item 1, ID 24-1571.

- Phoebe

Phoebe Seaton, Co-Director and Attorney at Law
Leadership Counsel for Justice and Accountability

[redacted] *her*

[redacted]
Twitter: @LCJandA

December 4, 2024

Submitted via email
scsp@fresno.gov

Attention: Sophia Pagoulatos, Planning Manager
City of Fresno
Planning and Development Department
2600 Fresno Street, Room 3065
Fresno, CA 93721

RE: Comments in Response to the November 2024 Draft South Central Specific Plan

Dear Ms. Pagoulatos,

Thank you for the opportunity to provide comments on this matter. Unfortunately, adoption and implementation of the November draft of the South Central Specific Plan (November Draft Plan) will have detrimental consequences in an already overburdened community while also denying the community that comprises the South Central Specific Plan planning area (Plan Area) of the amenities and protections it needs to thrive. As several of our comments and recommendations submitted on July 30, 2024 (July 30 Comments) remain unaddressed we incorporate those by reference herein and attach for your reference.[1] Based on our work alongside South Central Fresno residents, we submit additional comments for the City's consideration in response to the November Draft Plan.

I. Action by the City of Fresno Planning Commission and City Council is Inconsistent with City Council Resolution 2019-235

As noted in our July 30 Comments, the November Draft Plan - and its consideration by the City Council at this point - remains inconsistent with resolution 2019 -235. The resolution repeatedly emphasizes the City's intention that SCSP residents inform the SCSP's policies and land use designations, stating that the plan's land use policies should be "reflective of community input," and that residents and stakeholders "shall inform the [SCSP] to the greatest extent feasible, through an inclusive community engagement process."

[1] We have attached the Jul 30, 2024Comment Letter for your reference but have not included the exhibits to that letter. We incorporate by reference herein all attachments and exhibits included with the July 30, 2024 comments.

Notably, the resolution calls for review and consideration of the final plan for approval by the advisory committee established upon adoption of the resolution *prior* to Planning Commission and City Council action at a noticed hearing. To the best of our knowledge, the City did not notice or hold a public meeting of the advisory committee prior to Planning Commission action nor has it noticed a public meeting of the advisory committee for review and approval prior to council action.

II. The Draft South Central Specific Plan Will Increase Health and Safety Risks for Residents of the Specific Plan Area

The November Draft Plan fails to reflect recommendations included in our July 30 Comments. Of note, in response to a number of concerns regarding the continued concentration of land uses that will lead to increased pollution in the Plan Area, the City simply responds that the proposed land uses are less intensive than the uses in the adopted General Plan. No revisions, modifications, or policies adequately respond to the signatories' recommendations to lessen the impact of industrial development and associated traffic in the Plan Area within and beyond city limits.

A. Concentration and Intensity of Land Uses will Increase Pollution

Despite a nominal shift from Industrial Zones to Business Parks and Regional Business Parks throughout much of the Plan Area Business Park and Regional Business Park allow for many - if not most - of the uses allowed in industrial areas including but not limited to warehousing and other facilities that attract truck traffic. Business Park and / or Regional Business Park allows for construction and material yards, custom manufacturing, limited industrial uses, indoor warehousing and storage, outdoor storage, personal storage, wholesaling and distribution, freight / truck terminals and warehouses, light fleet-based services, and agricultural processing.[2] These uses will intensify and increase pollution and nuisance in the overburdened neighborhood. We reiterate the recommendations including in our July 30 comments and further recommend that specifically the areas near Orange Center School be rezoned to NMX or a similar designation.

B. Overlay Zone and Development Standards still not protective enough

While General Industrial, Intense Industrial, and Agricultural Processing uses were added to two of the three classification categories in the proposed overlay zone and building setback standards were clarified, the proposed overlay zone and development standards will still fail to protect the

[2] Agricultural processing would require a conditional use permit in Regional Business Park and Business Park zones.

health and well-being of the Plan Area residents. We therefore reiterate our recommendations included in our July 30 Comments and we urge, at a very minimum, that the City prohibit all use classifications within 1000 feet of sensitive uses now listed under category three of the overlay zone requiring a conditional use permit. Additionally, we urge the city to require a CUP for any of the following uses in the *entire plan area* and require public notice and a public hearing prior to CUP approval: general industrial, intense industrial, limited industrial, warehousing, service station, shooting / archery range, salvage and wrecking, freight / truck terminals and warehouses, waste transfer facility, mining and quarrying, motorcycle / riding club, construction and material yards, building materials and services, communications facilities within buildings, and agriculture processing and agricultural services.

C. The Draft Plan Fails to Address the Health and Safety Impacts of Vehicular Traffic

Despite repeated requests for rerouting truck traffic away from sensitive uses, traffic calming measures, pedestrian and bicyclist safety measures, and investment in basic infrastructure such as sidewalks, curb and gutter, protected bike lanes, streetlights, and crosswalk to ensure the safety of Plan Area residents, the updated draft fails to include enforceable and timely policies and actions to respond to these concerns. In fact, the latest draft eliminates most references to the Truck Reroute Study and HIA, including recommendations with regards to health impacts and pedestrian safety improvements, thereby rendering those recommendations and proposed improvements included in both reports meaningless and calling into question the City's intention of implementing them through this Specific Plan or otherwise. Furthermore, the limited references to the Truck Reroute Study note that truck routes will be removed from the Plan Area *if* the City approves an ordinance to shift truck routes. There is no guarantee that the City will adopt such an ordinance. Furthermore, the removal of truck routes does not mean that trucks will not use those roads, especially given the continued zoning for truck magnets in the Plan Area as discussed above.

D. Pause Land Use Approvals Until Adoption of Required Development Code Changes, Rezone, and Text Amendment

It is not clear what the impact of adoption of the South Central Specific Plan will have between adoption of the Plan and adoption of a rezone and text amendment, both necessary to implement the Plan. To avoid ambiguity and uncertainty in the applicability of the South Central Specific Plan, the City must pause all land use approvals in the Plan Area until adoption of the required rezone and text amendment.

III. Recommendation: Don’t Approval of the Draft South Central Specific Plan Until It Reflects the Recommendations of the People Who Live in the Plan Are

Consistent with our recommendations included in our July 30 Comments, we urge the City to update the Draft South Central Specific Plan to reflect the recommendations of the people who live and learn in South Central Fresno who continue to work each day for a healthy and thriving neighborhood. The City must not adopt the November Draft Plan as drafted and must instead work with the Advisory Committee and other community leaders to develop a South Central Specific Plan that creates the framework and infrastructure for a safe and sustainable South Central Plan Area.

Sincerely,

Veronica Garibay
Leadership Counsel for Justice and Accountability

July 30, 2024

Submitted via email
scsp@fresno.gov

Attention: Sophia Pagoulatos, Planning Manager
City of Fresno
Planning and Development Department
2600 Fresno Street, Room 3065
Fresno, CA 93721

RE: Comments in Response to the Draft South Central Specific Plan

Dear Ms. Pagoulatos,

The undersigned organizations and community members are writing to provide comments to the draft South Central Specific Plan (SCSP). The expansive industrial development proposed in the SCSP will have detrimental consequences in an already overburdened community while also denying the community of the amenities it needs to thrive. The City of Fresno must reassess the recommendations that it will receive and has received from community stakeholders and update the plan to conform with local and state policy goals and mandates and usher in a healthy and robust future for South Central Fresno.

I. The South Central Specific Plan Area and Surrounding Neighborhoods Already Suffer Disproportionate Environmental Burdens

The SCSP area encompasses and extends up to large swaths of Southwest, South Central, and Southeast Fresno which are home to various communities and neighborhoods and thousands of people. These neighborhoods include Calwa, Malaga Daleville, the Flamingo Mobile Home Park, the Roy and Almy Avenue neighborhoods in West Fresno, the neighborhood along Britten Avenue, the neighborhood located at Drummond and Jensen Avenues in Southeast Fresno, among others, as well as elementary schools, religious facilities, parks, and other sensitive community locations. These neighborhoods are amongst the most environmentally burdened in the entire State of California according to California Environmental Protection's (EPA) CalEnviroScreen 4.0 tool (Attachment 1 CES 4.0 Results Data Dictionary). In fact, the most socio-economically and environmentally burdened census tract in the 8,057 census tracts in California is found in the City of Fresno within the boundary lines of the SCSP. (Attachment 2

CES 4.0 Map of census tract 6019001100). The rest of the census tracts within the boundary lines are all found in the top 5% of CalEnviroScreen's most impacted census tracts across California (see attachment 1). Even further specific evidence has been documented in the recent results of UC Merced's Health Impact Assessment whose data shows that there are high rates of chronic health conditions correlating with the proximity to truck routes and high polluting sources.[1]

Despite well-documented data demonstrating such disproportionate impact and repeated oral and written comments by community residents living within the plan area, the City proposes a plan that will further exacerbate and entrench environmental impacts.

II. The Draft South Central Specific Plan Will Increase Health and Safety Risks for Residents of the Specific Plan Area

The draft South Central Specific Plan would continue to facilitate and concentrate intensive and industrial land uses in the SCSP neighborhoods and its implementation will intensify truck traffic, including heavy-duty diesel truck traffic. Additionally, proposed development standards, encompassed in a draft overlay zone, are insufficient to protect sensitive receptors from the deluge of industrial uses and trucks. Industrial uses exacerbate health, safety, and the quality of life in the already overburdened South Central planning area. Some of the impacts of industrial development include pedestrian, bike and road safety, air pollution from diesel and gas combustion along with emissions from breaking and tire deterioration, vibration and noise of passing trucks; light pollution throughout the night interrupting sleep and well-being, and groundwater depletion and degradation.

A. Implementation of The South Central Specific Plan Will Increase Industrial Uses In Areas Zoned Industrial, Business Park, and Even General Commercial

The Draft SCSP, as currently drafted, will facilitate significant increases in intense and polluting uses near and impacting sensitive receptors. For instance, despite an apparent shift from Industrial Zones to Business Parks and Regional Business Parks throughout much of the plan area, Business Park and Regional Business Park allow for many - if not most - of the uses allowed in industrial areas including but not limited to warehousing and other facilities that attract truck traffic. Business Park and / or Regional Business Park allows for construction and material yards, custom manufacturing, limited industrial uses, indoor warehousing and storage, outdoor storage, personal storage, wholesaling and distribution, freight / truck terminals and warehouses, light fleet-based services, and agricultural processing.[2] These uses will intensify and

[1] Fresno Community Environmental Health Impact Assessment: https://clc.ucmerced.edu/publications

increase pollution and nuisance in the overburdened neighborhood.

Even the General Commercial Zone will allow for uses that are not appropriate for areas adjacent to sensitive receptors. On page 58 of the draft SCSP, it states that "The Commercial - General designation allows for a wide range of commercial uses *that are not appropriate in other areas because of higher volumes of vehicle traffic and potential adverse impacts on other uses.* Examples of allowable uses include: building materials, storage facilities with active storefronts, equipment rental, wholesale businesses, and specialized retail not normally found in shopping centers." Some of the more intensive uses General Commercial zoning allows include such as building materials and services, construction and material yards, and communications facilities within buildings. Such uses are not allowed in zones more appropriate for residential neighborhoods including Neighborhood Mixed Use.

B. Truck Traffic in the Plan Area Will Intensify with Implementation of the Plan

The Draft SCSP acknowledges increased traffic as a result of plan implementation but does not identify what share of that increase will be due to heavy duty trucks. The truth is that plan implementation will significantly increase truck traffic by facilitating uses that rely on heavy duty trucks. The Draft SCSP relies on a truck reroute study that is currently pending before City Council. Not only has that reroute study not been adopted, but it will also be an inadequate tool - if adopted - to protect the South Central Plan area from truck traffic, pollution from trucks, and the safety impacts of truck traffic.

It is notable - and of great concern - that the Truck Reroute study identifies truck regulated areas designed to limit throughway truck traffic on neighborhood roads - a designation that eludes the vast majority of the South Central planning area. This raises the concern that the truck reroute study will actually push truck traffic to the South Central neighborhoods and leave them even more vulnerable to the impacts of trucks - both those with starting points or end points in the plan area, or those using its roads as thoroughfares. While one important road - Cherry Avenue from Central Avenue to North Avenue - will not be a truck route, sensitive receptors along that route will still be subject to heavy duty truck traffic that services use on or near that road. In short, the truck reroute study, if adopted, will not protect the residents and students who live, play, and study in the South Central planning area from increased truck traffic that implementation of the plan will attract.

It also bears noting that the Truck Reroute Study fails to follow the recommendations of the accompanying UC Merced Health Impact Assessment which called for at least a 1,000 foot

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[2] Agricultural processing would require a conditional use permit in Regional Business Park and Business Park zones.

buffer between sensitive receptors and diesel trucks.[3] Implementation of the South Central Specific Plan, even with incorporation of the truck reroute study, will guarantee intensification of truck traffic within 1,000 feet of sensitive receptors throughout the plan area.

C. The Development Standards in the South Central Specific Plan Will Not Protect Sensitive Receptors from Industrial Land Uses.

The Draft SCSP includes a proposed overlay zone that will require certain protections and standards to protect sensitive receptors from industrial land uses. Unfortunately, the overlay zone is unclear and ambiguous in parts and does not provide or require the necessary protections to ensure that industrial land uses will not hurt the people living, working, playing, studying, and praying in the SCSP area. Most notably, the proposed overlay zone purports to create a buffer between industrial and otherwise intense land uses and sensitive receptors. The buffer will not do that as it will not preclude warehouses and other industrial uses from nearly neighboring homes and other sensitive receptors. The overlay policies and the buffer zone in particular merely create an illusion of protection, similar to the shift from industrial zoning to business park.

1. The Proposed Overlay Zone is Unclear and Ambiguous

The Draft Overlay Zone includes three categories - (1) prohibited uses, (2) uses that are not allowed within 1,000 feet of a sensitive receptor, and (3) uses that are allowed within 1,000 feet of a sensitive receptor subject to some conditions, most notably a conditional use permit. The Overlay Zone will not lead to better protections of the residents in the South Central communities because the language of the draft SCSP ensures that there are loopholes to benefit industrial stakeholders so that their planning projects can continue in the same destructive patterns that impact the residents.

a. The proposed overlay zone does not appear to address all industrial land uses allowed in the SCSP area

Several allowable land uses in the Industrial and Business Park zones are not included in the list of prohibited uses, uses that cannot be within 1,000 feet of a sensitive receptor, or allowed within 1,000 feet but subject to a conditional use permit. General Industrial, for example, is allowed in industrial zones however it is not included in any of the three categories. Similarly Intense Industrial is allowed in Heavy Industrial zones but is not included in any of the categories identified in the plan. Agricultural processing as well is allowed in Industrial and Business Park zones but it is not included in any of the three categories. It is unclear if these and

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[3] Fresno Community Environmental Health Impact Assessment: https://clc.ucmerced.edu/publications

other industrial uses that are allowed in industrial and business park zones will be subject to any of the requirements in the overlay zone.

b. It is unclear how uses that fall in "Category 3" will be treated if they do not meet the conditions required by "Category 3"

Several uses are listed in category 3 (uses that can be within 1,000 feet of a sensitive receptor but that require a Conditional Use Permit) are subject to other requirements. It is unclear what rules would apply to those uses if they did not meet the identified requirements, i.e. CARB criteria for zero or near zero emissions. Would these uses be allowed beyond 1,000 feet from a sensitive receptor? Would they simply not be allowed? The development standards are unclear and confusing with respect to several of these uses, including warehousing uses, in category 3.

c. The SCSP does not define or accurately describe what criteria near zero or zero emission facilities must meet

The SCSP notes that three types of warehousing, storage, and distribution uses are allowed within the proposed 1,000 feet "buffer" around sensitive uses as long as these uses meet CARB criteria for near zero or zero emission facilities, as defined in CA Sustainable Freight Action Plan (July 2016). However, the state's Sustainable Freight Action Plan does not appear to include a list of criteria for facilities to be considered zero emission or near-zero emission and neither the SCSP nor the accompanying DEIR provide any details about the required criteria. Thus, the public and decision-makers have no way of understanding how uses would qualify as "zero or near-zero facilities," reduce emissions, or compare to other warehouses. Moreover, the California Sustainable Freight Action Plan does not define the term "near- zero" so it remains unclear what the SCSP's use of the term even means and how it can be verified.

d. The SCSP recommends set-backs for "industrial uses" but does not define such uses

The proposed overlay zone recommends building set back standards for industrial uses but does not provide details about what uses would be subject to this recommendation. Members of the public, developers, and even the City's decision-makers would be left guessing what uses would be subject to the setback standards.

2. The Proposed Overlay Zone Still Allows Intensive Industrial Uses Near Sensitive Receptors

The Overlay Zone does not provide sufficient protection from industrial uses, other intensive land uses, or related truck traffic. It will not prevent the continued environmental degradation of the South Central Specific Plan Area nor will it protect sensitive receptors from polluting land uses.

a. Several industrial and otherwise intense land uses will ostensibly be allowed near sensitive receptors

Many industrial and otherwise intense land uses will be allowed in very close proximity to sensitive receptors. intense land uses, including but not limited to Motorcycle/Riding Club, Construction and Material Yards, Limited Industrial, Warehousing, Storage, and Distribution: Indoor Warehousing and Storage; Warehousing, Storage, and Distribution: Outdoor Storage; and Warehousing, Storage, and Distribution: and Wholesaling, Storage and Distribution will be allowed as close to 100 feet from a sensitive receptor with a CUP and with few other protections. As has been the case to date, CUPs will be routinely and summarily approved with little public oversight and not public hearing.[4] Areas next to sensitive receptors must be properly zoned, and the aforementioned types of classifications should not be permitted even under a CUP.

Additionally, as noted above, several uses don't fall within any of the restrictive categories included in the Overlay Zone and may be allowed within 1,000 feet of sensitive receptors. These uses include General Industrial, Intense Industrial, Agricultural Processing, Construction and Material Yards, and Building Materials and Services. These uses could intensify air, water, light, and noise pollution in addition to traffic safety concerns yet appear to be allowed as close as 100 feet from a sensitive receptor.

3. The Proposed Overlay Zone Will not Protect People from The Impacts of Warehousing and Similar Facilities that Attract Truck Traffic

The proposed Overlay Zone includes inadequate protections from the impacts of truck traffic servicing warehouses and other industrial uses. The development standards call for truck entries to be oriented away from sensitive receptors unless physically impossible.[5] There should be no such exception. If orienting entries and loading docks away from sensitive receptors is not possible, then that particular use is inappropriate. Similarly, the development standards suggest that loading docks and truck entries should be located away from sensitive receptors if feasible.[6] Again, there should be no such caveat. It's critical for health and safety considerations such standards be in place. Finally, the proposed development standards only require a 300 foot buffer

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[4] City of Fresno Code of Ordinances: Part V, Article 49, Sec. 15-4904 (J)(L). Article 50, Sec. 15-4904 (M) and Table 15-4907

[5] Draft SCSP pg 73

[6] Id

for warehouses that are larger than 400,000 square feet.[7] Not only is a 300 foot buffer inadequate given the impacts of truck idling and queueing on sensitive receptors, but a standard buffer should not be limited to only massive facilities.

D. The Proposed Land Use Plan Does Not Address Existing Needs Including the Beed for Neighborhood Mixed Used Zoning and Parks

The Draft SCSP fails to adequately incorporate recommendations of people who live in the plan area. Residents of the South Central neighborhoods recommended less industrial uses, but also recommended more community-serving amenities, more parks and green space, and more housing.

The Plan's allocation of land for parks falls far short of recommended park space. In fact the draft plan only designates 3 acres for a park and that land is at the far edge of the plan area, leaving the majority of the planning area far from any hope of a park or recreational space. Community members have repeatedly asked for more trees to create a better tree canopy to reduce heat island impacts. Insultingly, the development standards do not require any trees to be planted except for saplings that don't reach their maturity until 10 years later.

Despite a call for more community-serving amenities, housing, and pedestrian-friendly retail opportunities that would best be fulfilled through Neighborhood Mixed Use zoning, there is virtually no such zoning in the entire plan area. Instead the plan allocates almost all non-residential uses to industrial and business park zones along with some General Commercial zones which the draft plan itself describes on page 56 as not necessarily compatible with "other areas because of higher volumes of vehicle traffic and potential adverse impacts on other uses".

Unfortunately, despite the articulated desire for more housing and mixed use development in the area, including near Orange Center Elementary school, residents are seeing more and more land gobbled up for industrial uses, making residential development more and more untenable. This plan could reverse that harmful trend if corrected.

E. The proposed land use and circulation plan does not protect the safety of pedestrians and cyclists in the plan region.

Community residents have consistently and repeatedly voiced their concerns about the lack of safety for pedestrians and cyclists in the SCSP area as a result of significant heavy duty truck and employee traffic from distribution and industrial facilities in the plan area. In fact, the SCSP notes that "there are many locations that lack bikeways and sidewalks or that have

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[7] Draft SCSP pg 73 Developmental Regulation

sidewalks gaps between development" and goes on to state that "inconsistent bicycle and pedestrian networks contribute to an unsafe and uninviting environment for pedestrians and cyclists."[8]

While the SCSP states that it incorporates relevant portions of multiple transportation planning documents and identifies *planned* bicycle, trail, and sidewalk networks, it completely fails to identify how planned network investments will actually be funded and fully realized. Furthermore, SCSP does not commit to or identify any actions the City will take to ensure timely implementation in the circulation or implementation chapters of the SCSP. It excuses any commitments by noting that improvements can only be made if they are feasible and within city limits with no acknowledgement to address bikeway and sidewalk infrastructure deficiencies for areas within the city's sphere of influence[9].

With respect to public transit, the SCSP points to existing transit services and planned service extension to support the North Pointe Business Park but does not analyze transit service deficiencies nor identify transit improvement for residents living within the SCSP area. Additionally, the circulation chapter discusses the Clean Shared Mobility Network, which is entirely a Southwest Fresno Specific Plan Transformative Climate Communities (TCC) project that lies within the Southwest Fresno Specific Plan and it does not infiltrate nor directly benefit South Central Fresno community members. The Clean Shared Mobility Network project should not be mentioned in the SCSP unless the City plans and commits to duplicate the project and its benefits of a mobility network within the community of South Central. To state that this Clean Shared Mobility Network adjoins the SCSP as if it will benefit South Central is a farce because none of the project's services are within the SCSP area.

With respect to traffic calming, the SCSP offers no analysis as to the traffic calming needs of the Plan area to protect pedestrians and bicyclists, The SCSP only proposes the City should consider traffic claiming studies and to seek funding for traffic calming *studies after* the SCSP is adopted which is unacceptable.

Insultingly, the circulation chapter identifies construction of the SR 99 South Fresno Corridor on American and North Avenues as a project that will improve traffic operations and safety at the interchanges and on intersecting and nearby local streets resulting in lower air emissions on the local road system and improved access for businesses in the Plan Area.[10] Community opposition to the SR 99 South Fresno Corridor project is well documented and residents have repeatedly called on the local, state, and federal agencies to rescind project approval due to significant air quality impacts of the proposed project. Most recently, public

[8] Draft SCSP, page 81
[9] Draft SCSP, page 81
[10] Draft SCSP, page 93

comments were submitted to the Federal Highways Administration documenting the disastrous impacts to the health and well benign of South Fresno neighborhoods, including those within the SCSP area, should the project move forward. Those comments are incorporated herein (and included as Attachment 3).

Lastly, as noted in Section II. B of our comments, the truck reroute study is inadequate and truck traffic will intensify in the SCSP area.

F. Implementation of the Plan's Policy Framework is Unclear and Ambiguous

The policy and implementation framework found in Chapters 3 and 8 of the draft plan fail to include enforceable, timely, and meaningful policies and implementation actions. Proposed policies across categories are vague, unenforceable, and will not result in reduced pollution exposures near sensitive receptors in the Plan Area. A few notable examples include:

T-6 - Help school districts implement a "safe routes to school: " program;

T-7 Build, repair, and maintain roads in good conditions;

T-12 Consider a funding mechanism to pre-fund infrastructure improvements, prior to allowing development to occur;

AQ-2 Request additional 24-hour air monitors from the San Joaquin Valley Air Pollution Control District around distributions centers, major roads near distributions centers, and at receptive school districts;

N-2 Identify noise-impacted areas in the Plan Area;

EGB-3 Encourage installation go solar panels, battery storage, and zero-emission backup electricity generators at distribution centers;

W-2 Implement a periodic water quality testing program in areas where contamination has been an issue;

W-6 Seek funding to expand water facilities ato neighbors within the Plan Area;

E-10 Prioritize hiring local residents;

PN-1 Establish new noticing requirements for all project types;

CBD-1 Consider a Community Benefit Fund to pay for measures such as air filtration systems, dual-paned windows, parks, job training programs, and job fairs near the Plan Areas.

Several of the proposed policies mentioned above fail to include a timeline for implementation, identify responsible city departments, identify secured funding sources to implement, and a plan for enforcement. Additionally, the SCSP states that "implementations of policies are subject to available resources, staff capacity and availability, funding, and priorities of decision makers among other things"[11], thereby rendering proposed policies and implementation actions meaningless.

III. The Draft South Central Specific Plan is Inconsistent with Local and State Policy Goals and Mandates

A. The SCSP is Inconsistent with the Goals, Strategies, and Overall Intent of the AB 617 South Central Fresno Community Emission Reduction Plan

AB 617 initiated a state-wide effort to monitor and reduce air pollution, and improve public health, in communities that experience disproportionate burdens from exposure to air pollutants through new community-focused and community-driven actions.[12] After an extensive public engagement process and the San Joaquin Valley Air Pollution Control District's (Air District) own comprehensive identification and prioritization analysis, the South Central Fresno neighborhood was recommended by the Air District Governing Board and selected by the California Air Resources Board (CARB) as a first-year community for the development of a community air monitoring plan and emission reduction plan to reduce pollution impacts due to the area's high cumulative air pollution exposure burden. [13] The SCSP area is within the boundaries of the AB 617 South Central Fresno Region and thus subject to the goals and strategies within the adopted community emission reduction plan (CERP). (Please find included as Attachment 4 a map showing the boundaries of the City of Fresno, the boundaries of the City of Fresno's sphere of influence, the boundaries of the AB 617 South Central Fresno Region, and the boundaries of the South Central Specific Plan)

As noted in the CERP, top community sources of concern include heavy duty trucks, land use and industrial development, and industrial processing in the plan area. [14] To address these concerns, the CERP includes several strategies intended to reduce high cumulative air

[11] Draft SCSP, page 135
[12] 2019 South Central Fresno Community Emission Reduction Plan https://community.valleyair.org/media/kx2gz0h4/01finalscfresnocerp-9-19-19.pdf
[13] 2019 South Central Fresno Community Emission Reduction Plan https://community.valleyair.org/media/kx2gz0h4/01finalscfresnocerp-9-19-19.pdf
[14] 2019 South Central Fresno Community Emission Reduction Plan https://community.valleyair.org/media/kx2gz0h4/01finalscfresnocerp-9-19-19.pdf

pollution exposure including but not limited to incentive programs for heavy duty truck replacement with zero and near zero emission technology; reducing idling of heavy duty trucks within the community; installation of electric charging infrastructure at distribution center, warehouse, and other types of freight facilities where heavy duty diesel trucks are loaded or unloaded; a heavy duty truck rerouting study which is now pending before the city; supporting projects that reduce vehicle miles traveled to promote active transportation and increase the walkability of community neighborhoods; increased coordination with the City and County on land use planning, permitting and CEQA processes to minimize impact on air quality; increased urban greeting and forestry to improve air quality; and installation of vegetative barriers around and near sources of concern.[15]

The CERP is unequivocal that its purpose is to reduce pollution in the designated south Fresno area. While the Air District leads CERP implementation, the City has a critical role in supporting CERP implementation and emission reduction. As noted above, the proposed land uses and development standards in the draft SCSP will facilitate significant increases in intense and polluting uses near and impacting sensitive receptors within the AB 617 South Central Fresno region thereby undermining community-led, SJVAPCD, and CARB efforts to improve air quality and reduce pollution exposure in the region.

B. The SCSP is Inconsistent with the Goals and Projects of the City of Fresno's Transform Fresno Initiative.

In 2016, the City of Fresno was awarded a $70 million Transformative Climate Community (TCC) program grant by the California Strategic Growth Council for Southwest, Downtown and Chinatown areas of Fresno. AB 2722, which created the TCC program, calls for investment in areas that have a high proportion of census tracts identified as disadvantaged communities and that focus on communities that are most disadvantaged.[16] The goals of the TCC program are to invest in community-led climate resilience projects in California's most disadvantaged communities. The program aims to achieve these goals through a combination of community-driven climate projects to improve public health and the environment, to strengthen the economy through community serving projects, and to reduce greenhouse gas emissions[17].

A historic and unprecedented participatory process led to the identification of a series of projects that would result in significant environmental and economic benefits to the Chinatown,

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[15] 2019 South Central Fresno Community Emission Reduction Plan, pp 46- 126 https://community.valleyair.org/media/kx2gz0h4/01finalscfresnocerp-9-19-19.pdf

[16] Bill Text: AB 2722 Transformative Climate Communities, Chapter 371, Section 1 Part 4 of Section 75240 of Division 44 of the Public Resources Code

[17]Transformative Climate Communities Fact Sheet: https://sgc.ca.gov/grant-programs/tcc/docs/20231218-TCC_Fact_Sheet.pdf

Downtown, and Southwest Fresno neighborhoods.[18] Funded projects and programs include but are not limited to clean mobility options, urban greening and increased park space, infrastructure to support neighborhood serving amenities, community gardens, affordable housing, and rooftop solar – all intended to provide environmental and health benefits to communities most disproportionately impacted and reduce greenhouse gasses.[19]

The Transform Fresno investment area is within the AB 617 South Central Fresno boundary and adjacent to the SCSP area. Combined with strategies in the South Central Fresno CERP, Transform Fresno seeks to improve environmental and health conditions in the very same neighborhoods that will be negatively impacted by the SCSP. Air quality knows no boundaries, and if approved as is, the SCSP will also undermine local and state efforts to build community and climate resilience.

C. The Plan Fails to Adhere to the Mandates of the City of Fresno's Resolution Calling for the Development of the Plan

On November 14, 2019, the Fresno City Council passed resolution 2019-23 directing City staff to develop land use designations, zoning, and policies to protect sensitive uses in the SCSP area from the impacts of industrial development and to engage in other planning activities to ensure the extension of essential infrastructure and services to unincorporated SCSP neighborhoods in the City's development trajectory and engage residents' in crafting economic development strategies and policies reflective of residents' priorities for economic mobility and business investment in local communities (Attachment 5: Resolution 2019-235). Specifically, the resolution provides that the City "wishes to obtain input from residents" "to develop a vision, land use changes, and policies that...avoid and minimize impacts to existing sensitive land uses from new development and ensure a decent quality of life and a healthy environment for residents of existing neighborhoods and communities within and near the [SCSP area]." p. 2. The resolution repeatedly emphasizes the City's intention that SCSP residents inform the SCSP's policies and land use designations, stating that the plan's land use policies should be "reflective of community input," and that residents and stakeholders "shall inform the [SCSP] to the greatest extent feasible, through an inclusive community engagement process." p. 2.

The SCSP does not conform with the mandates outlined in the City's own resolution.

1. The SCSP Does not Adequately Reduce Intensity of land uses or Include New Land Use Designations

[18] https://www.transformfresno.com/about/
[19] https://www.transformfresno.com/projects/

The plan is also not aligned with Resolution 2019-235, which states that the SCSP plan incorporates reductions in the zoning intensity near sensitive uses to provide buffers to protect sensitive uses from adverse impacts from more intense land uses in a manner that reflects stakeholder input. The resolution also states that the Mayor and city council desire new land use designations, policies and implementation actions specific to the plan area, and incorporate relevant environmental mitigation measures reflective of community input and the analysis prepared for the Environmental Impact Review.

The reduction in zoning from Heavy or Light Industrial to Regional and Business Park which would still allow intense industrial and polluting uses does not meet this required component of the resolution for the reasons noted above. Furthermore, the plan contains no new land use designations that would reduce pollution impact and intensity of industrial uses, invest in neighborhood serving amenities and services, and promote pedestrian safety and walkability as repeatedly requested by community residents throughout the plan development process.

2. The Draft SCSP Does Not Adequately Incorporate Input From Community-based Stakeholders

Resolution 2019-235 also states that the SCSP must be informed by stakeholder input. And yet the Draft SCSP largely ignores many of the priorities and recommendations community members raised.

Community members recommended a significant reduction in industrial land uses. The Draft SCSP largely ignores this recommendation, instead swapping in Business Park for Industrial zones which allow many of the same polluting uses. If anything, this change misleads and misinforms community stakeholders rather than incorporating the recommendations. For reduced industrial uses.

Community stakeholders also recommended increased housing and neighborhood mixed uses zonings to address the need for housing and neighborhood serving retail. Unfortunately, the draft plan provides virtually no Neighborhood Mixed Use.

Finally, community members recommended additional park space and walking and biking paths. The Draft SCSP falls far short of providing land requisite to address the need for parks in the neighborhood and fails to make the necessary commitments to update pedestrian and bike safety and infrastructure.

In short, the City failed to live up to its mandate to incorporate stakeholder input - or at least community input - into the Draft SCSP.

D. The Draft SCSP Fails to Align with the City of Fresno's General Plan Goals and Policies

The ongoing industrialization of the the SCSP area contradicts and is not in alignment with the General Plan's goals of promoting healthy communities[20] and improving public health and safety.[21] The draft SCSP is also not in alignment with the General Plan's Environmental Justice Goal A which states that, "...related to land use planning… ensure new developments do not disproportionately burden disadvantaged communities. To ensure the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations and policies do not disproportionately impact any individual race, any culture, income or education level."[22]

IV. Recommendations

A. Ensure Effective Public Engagement in The Development of the Final SCSP

Despite the City's own call for ongoing community engagement in the development of the SCSP (through Resolution 2019-235) the City failed to meaningfully engage impacted people and seek feedback on the Draft SCSP. We are hopeful that the City incorporates all of the substantive changes recommended below, but regardless, more engagement will be necessary before plan adoption to ensure inclusion of all impacted neighborhoods.

B. Recommended Changes to the Draft South Central Specific Plan

The City should redraft the SCSP based on recommendations included in the Community Plan Alternative, included in additional community engagement as recommended above, and included herein to promote health, safety, equitable access to amenities, and to align with City and State policies and mandates. We've summarized the recommendations below and look forward to working with you to incorporate and implement the following land use and policy changes.

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[20] Draft SCSP, page 13, goal number 9
[21] Draft SCSP, page 15, goal number 15
[22] Id.

We recommend the following changes to the Land Use Map to ensure that sensitive receptors are protected from some of the harshest impacts of increased industrialization and intensification of land use:

- Eliminate Industrial Zoned Land within one half mile of sensitive receptors or land zoned for sensitive receptors
- Shift Industrial Zoned Land to Business Park, Commercial General or Neighborhood Mixed Use subject to the recommendations below
- Change land that is currently zoned General Commercial to Neighborhood Mixed Use in areas that would allow a half mile buffer between the NMX use and existing industrial uses
- Change land that is currently zoned Industrial or Business Park to Neighborhood Mixed Use in areas that would allow a half mile buffer between the NMX use and industrial uses
- Increase park acreage by at least 10 acres to address the need for parks, playgrounds, and recreational areas in the plan area

We recommend inclusion of the following transportation and circulation policies:

- Eliminate truck routes that pass within 1,000 feet of sensitive receptors
- Implement UC Merced's Health Impact Assessment's recommendations of developing truck routes outside of the 1,000 foot buffer and even further away when considering more vulnerable populations; any new and future truck routes must be designed to avoid locations where people live, work and play.
- Set enforceable timelines for implementation of pedestrian safety plans and traffic calming measures, including but not limited to:
    - Construction of Class I bike routes
    - Construction of walking and bike paths on canal banks
    - Construction of complete streets
- Coordinate with residents and law enforcement entities to enforce truck routes and other traffic calming and traffic safety measures

We recommend the following policy changes to the proposed overlay zone:

- Prohibit intensive land uses and / or land uses that attract heavy duty truck traffic within a half mile of a sensitive receptor or an area zoned for a sensitive receptor. Such uses include but are not limited to general industrial, intense industrial, limited industrial, warehousing, service station, shooting / archery range, salvage and wrecking, freight / truck terminals and warehouses, waste transfer facility, mining and quarrying, motorcycle / riding club, construction and material yards, building materials and services, communications facilities within buildings, and agriculture processing and agricultural services.

- Require a CUP for any of the following uses in the plan area and require public notice and a public hearing prior to CUP approval: general industrial, intense industrial, limited industrial, warehousing, service station, shooting / archery range, salvage and wrecking, freight / truck terminals and warehouses, waste transfer facility, mining and quarrying, motorcycle / riding club, construction and material yards, building materials and services, communications facilities within buildings, and agriculture processing and agricultural services.
- Require that all loading docks at warehousing facilities and similar facilities are oriented away from sensitive receptors and eliminate discretion to override the requirement
- Require a half mile set-back from dock-doors to sensitive receptors
- Prohibit expansion, modification, and intensification of existing and new industrial uses in the SCSP area boundaries unless they meet all technologically feasible components of development standards laid out in the City's Development Code, including but not limited to requirements related to set-backs, landscaping, screening, ingress and egress standards, queuing standards, dock door orientation, and buffer zones.
- Require local hiring practices and standards to ensure that residents of the Planning Area and adjacent neighborhoods have access to job and career opportunities that result from plan implementation.

We recommend that the following additional policies be incorporated into the City's Development Code upon its adoption:

- Require extension of water and wastewater service to any residents living in or adjacent to the City's sphere of influence who opt for municipal water and wastewater service
- Require fire suppression systems in businesses that pose high risk of fires including businesses that produce pallets, chemicals, and other flammable materials.
- Require businesses that pose great fire risk to provide nearby sensitive receptors with military grade gas/respirator masks for the population of school staff/faculty/ and students for emergency use during an active fire
- Require the creation of a Community Benefit Fund (CBF) to fund home and neighborhood level improvements and facilitate job and career opportunities for residents of the plan area. Additionally, require all industrial developments to contribute funds to the CBF.

* * * *

Thank you for your consideration of these comments and recommendations. We look forward to working with you, and other stakeholders, to create a South Central Specific Plan that matches the potential of South Fresno neighborhoods to thrive.

Sincerely,

Ivanka Saunders
Leadership Counsel for Justice and Accountability

Terry Hirschfield
Superintendent, Orange Center Elementary School District

Laura Moreno
Friends of Calwa

Kimberly McCoy
Central California Asthma Collaborative

Nayamin Martinez
Central California Environmental Justice Network

JePahl White
Faith in the Valley and Healthy Fresno Air

Keishaun White
Healthy Fresno Air

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The Children's Movement

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City Council Member District 3

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Air Resources Supervisor, CARB

From: [redacted]
To: [redacted]
Subject: Comments on the FEIR for The Fresno South Central Specific Plan (SCH# 2019079022) - City Council Regular Meeting 12.5.24 Agenda Item 1
Date: Tuesday, December 3, 2024 3:55:00 PM
Attachments: image001.png
SCSP FEIR Comments 12-3-24.pdf

External Email: Use caution with links and attachments

Good afternoon,

Please find attached a letter from Edward Schexnayder, on behalf of the Leadership Counsel for Justice and Accountability, regarding comments on the Final Environmental Impact Report for the City's South Central Specific Plan. Please confirm your receipt of the attached comments for consideration at the regular City Council meeting on December 5, 2024, under Agenda Item 1, ID 24-1571. Thank you.

Sara L. Breckenridge
Secretary to Carmen J. Borg
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December 3, 2024

<u>Via Electronic Mail Only</u>

City Council
City of Fresno
2600 Fresno Street
Fresno, CA 93721
E-Mail: [redacted]

Re: <u>Final Environmental Impact Report For The Fresno South Central Specific Plan (SCH# 2019079022)</u>

Honorable Members of the City Council:

On behalf of the Leadership Counsel for Justice and Accountability ("Leadership Counsel"), we have reviewed the Final Environmental Impact Report ("FEIR") for the City's South Central Specific Plan ("SCSP", "Specific Plan", or "Project"). The FEIR does not correct the inadequacies of the Draft EIR ("DEIR") that were identified in previously submitted comments.[1]Additionally, the DEIR and FEIR, (collectively referred to as the "EIR") prepared for the Project violates the California Environmental Quality Act ("CEQA") for all of the reasons set forth below.

Unfortunately, the FEIR fails to provide the public and decision makers with the information necessary to properly evaluate the Project. The FEIR neither adequately responds to comments previously raised nor cures the legal inadequacies identified by those comments. Some examples of these deficiencies include but are not limited to a failure to include: (1) adequate analysis and mitigation disclosing the Project's potentially significant impacts on residents in the SCSP area; (2) an adequate evaluation of the Project's air quality impacts, especially in light of significant existing air pollution in the Plan area; (3) an adequate analysis or mitigation of the Project's significant public safety impacts, and (4) an adequate analysis or mitigation of the Project's significant noise impacts. Rather than revise the DEIR to comprehensively address these issues, the FEIR merely seeks to defend the erroneous assertions and conclusions of the prior document.

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[1] Our comments on the DEIR dated July 30, 2024 and all of its Exhibits are expressly incorporated herein.

Where the FEIR does add analysis or make changes, it fails to acknowledge the significance or impacts of the changes or recirculate the document. These flaws demand that the EIR be substantially modified and recirculated for review and comment by the public and public agencies.

The EIR's failings will most directly and significantly impact low-income, disadvantaged residents and communities, especially communities of color, in South Central Fresno. The City must revise and recirculate the EIR to provide the public an accurate assessment of the environmental and public health issues at stake, and a mitigation strategy—developed *before* SCSP approval—that fully addresses the Project's significant impacts. The City must also take a serious look at alternatives that can better avoid or lessen most of the Project's significant impacts.

This letter, along with the air quality report previously prepared by Patrick Sutton, Senior Environmental Engineer, Baseline Environmental, Inc. ("Baseline Report" attached as Exh. A) constitute our comments on the FEIR. Please refer to the Baseline Report for further detail and discussion of the EIR's inadequacies with regard to air quality impacts.

I. The FEIR Inadequately Responds to Comments Raised on the FEIR.

In an FEIR, a lead agency must respond to all comments made on the DEIR. Pub. Res. Code § 21091(d); CEQA Guidelines §§ 15088(a), 15132. When a comment objects to the DEIR's analysis and raises significant environmental issues, the FEIR's response must give a reasoned, good-faith analysis and "describe the disposition of significant environmental issues raised," such as how revisions to the project will mitigate anticipated impacts. CEQA Guidelines § 15088(c). Comments must be "addressed in detail giving reasons why specific comments and suggestions were not accepted." *Id.*

Detailed responses are required to "ensure that the lead agency will fully consider the environmental consequences of a decision before it is made." *City of Long Beach v. Los Angeles Unified Sch. Dist.* (2009) 176 Cal.App.4th 889, 904. The required level of detail "depends on factors such as the significance of the issues raised, the level of detail of the proposed project, the level of detail of the comment, and the extent to which the matter is already addressed in the DEIR or responses to other comments." *Id.* at 901. Generally, the level of detail in the response must match the level of detail in the comment. *Pfeiffer v. City of Sunnyvale* (2011) 200 Cal.App.4th 1552, 1568. "Conclusory statements unsupported by factual information" are never an adequate response. Guidelines § 15088(c); *City of Maywood v. Los Angeles Unified Sch. Dist.* (2012) 208 Cal.App.4th 362, 391.

As set forth below, in numerous instances, the FEIR's response to comments fails to meet these requirements. Some responses do not sufficiently address the comment. In other cases, the responses ignore comments entirely. The City has not shown a good faith effort to consider public input, much less modify the DEIR as a result.

II. The FEIR Fails to Correct Errors and Omissions in the Analyses of and Mitigation for the SCSP's Environmental Impacts Are Legally Inadequate.

Rather than providing meaningful disclosure of the Project's environmental impacts, the FEIR largely seeks to defend the erroneous assertions and conclusions in the DEIR. In addition, in many cases, the FEIR's responses to comments refer the reader to unrelated responses, none of which address the comment. For example, Comment 10-47 highlights the DEIR's failure to complete an adequate analysis of impacts resulting from changes to heavy duty truck routes. See FEIR at 2-147, comment 10-47. However, the FEIR response references Master Response 6: Relationship to the Truck Reroute Study, which fails to address the comment. FEIR at 2-8 and 2-9. Unfortunately, this is not an isolated mistake. The FEIR includes many instances of this incongruity between valid comments and inadequate responses. Furthermore, instead of providing detailed responses to comments that are supported with factual information, in many instances the FEIR provides unsupported, conclusory assertions or merely reiterates information already contained in the DEIR. This approach runs afoul of CEQA's mandate that in responding to comments, an agency must provide a reasoned analysis supported by factual information. CEQA Guidelines § 15088(c).

This letter does not reiterate each and every comment from the DEIR comment letter dated July 30, 2024 or from the attached Baseline reports (Exhibit A)[2]. The summaries below illustrate how the FEIR's analyses of the Project's environmental impacts remain thoroughly inadequate and, in many cases, entirely unaddressed.

A. The FEIR Fails to Adequately Analyze and Mitigate the SCSP's Air Quality Impacts.

Our prior letter demonstrated that the DEIR substantially underestimated the Project's increase in air quality emissions, in part because it defers a substantial portion of the analysis of impacts to the future, when development projects are proposed. As explained above, the FEIR continues to rely on the assertion that because the EIR is a program-level document, analysis of the impacts is not required. See, *e.g.*, FEIR at 2-159 stating "[A]t this programmatic stage, the Draft EIR does not attempt to quantify the

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[2] Note that this report was submitted with our DEIR comments.

number of new trucks that could be added to any one existing roadway as individual development projects are yet to be proposed."

In addition, as discussed above, the FEIR fails to adequately respond to all of our submitted comments. Examples are discussed below.

1. Inconsistency with Assembly Bill 617

Our letter explained that due to South Central Fresno's status as a disadvantaged community disproportionally burdened by exposure to air pollutants, the California Air Resources Board ("CARB") selected it for development of one of California's first AB 617 air pollution reduction plans. FEIR at 2-121, Comment 10-13. The resulting plan, the South Central Fresno Community Emissions Reduction Program ("CERP"), aims to lower air emissions over baseline levels and reduce localized pollution and related health impacts in South Central Fresno. *Id*. Our comments therefore emphasized that in analyzing the SCSP's consistency with local air quality plans, the DEIR errs in failing to analyze the SCSP's consistency with the CERP and AB 617. This lack of analysis is significant because the DEIR fails to disclose that by planning for a massive surge in industrial uses, the Plan would increase emissions at a scale that could negate benefits from the CERP's implementation and undercut the CERP's core purpose.

In response, the FEIR simply notes our concern that "adoption of the Specific Plan could negate CERP benefits." Rather than addressing that concern directly, it references the FEIR's response to CARB's DEIR comment letter "for information pertaining to the SCSP's consistency with the CERP." FEIR at 2-158, Response 10-13.

CARB's comment letter raises similar concerns. It stresses that "the construction and operation described in the Specific Plan will expose nearby residential communities to elevated levels of air pollution beyond the existing baseline emissions." FEIR at 2-11; Comment 1-4. It notes that the 400 residences within the plan area are already exposed to high levels of diesel PM emissions from operation of existing industrial facilities and nearby highway and railway traffic. CARB further explains that AB 617 highlights the "need for further emission reductions in communities with high exposure burdens," and that the CERP was developed "to significantly reduce emissions within the [South Central Fresno] community" given its "high pollution burden." FEIR at 2-11, Comment 1-5. It stresses that it is "therefore imperative that the City ensure that its land use decisions, including its decision on this Project, are consistent with the … CERP, in its entirety." *Id*.

In response to CARB, the FEIR claims that because several air pollution mitigation measures in the DEIR and policies in the SCSP on vehicular and operational emissions "align with the strategies identified by SJVAPCD in the [] CERP and would serve to reduce the SCSP's contribution of air pollution to the plan area, … the SCSP is consistent with the [] CERP." FEIR at 2-29, Response 1-5. This faulty logic ignores the fundamental and irreconcilable conflict between the CERP and the SCSP: The CERP requires that air pollution in South Central Fresno be reduced (FEIR at 2-121, Comment 10-13), but construction and operation of development under the SCSP implementation will increase emissions to levels that could cause adverse health outcomes for sensitive receptors, a significant and unavoidable impact. DEIR at 4.3-28 to 4.3-31. These emissions will further degrade air quality in one of the most pollution-burdened communities in California. The EIR further errs in failing to acknowledge or discuss how the SCSP's emphasis on industrial expansion in the heart of the AB 617 South Central Fresno community, through the Plan's land use designations and policies, is antithetical to the CERP's statutory mandate to reduce air emissions exposures by sensitive receptors in that area. In failing to discuss the clear inconsistencies of the SCSP with the CERP, the EIR violates CEQA. See CEQA Guidelines § 15125(d) (an EIR must discuss any inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans); *Banning Ranch Conservancy v. City of Newport Beach* (2017) 2. Cal.5th 918, 941 (CEQA prohibits lead agencies from "perfom[ing] truncated and siloed environmental review, leaving it to other responsible agencies to address related concerns seriatum").

2. The FEIR's Study Area Boundary Ignores CARB's South Central Fresno Community Emissions Reduction Program Boundary Thereby Failing to Properly Describe the Existing Setting.

Our letter noted that the DEIR appears to use the SCSP boundary as the study area for air quality analysis. FEIR at 2-122, Comment 10-14. The FEIR responds that it evaluates potential air pollution impacts for receptors located within and adjacent to the Plan Area, as well as regionally. FEIR at 2-157, Response 10-14. However, it provides no citations to substantial evidence to support this claim. For example, it is unclear whether the DEIR's analysis of potential carbon monoxide hotspots (DEIR at 3.4-30) was restricted to roadways within the Plan Area, or if it also looked at roadways in surrounding unincorporated areas that will see in a surge in heavy truck traffic from SCSP implementation. Without such information, it is impossible for the public to ascertain whether the EIR actually considers air quality impacts to receptors outside of the SCSP area.

3. The FEIR Fails to Respond to Expert Comments Submitted on the DEIR.

The FEIR fails to address the comments related to air quality impacts submitted in the Baseline Report, attached as Exhibit A to our DEIR comment letter and resubmitted with this letter. While our DEIR comments provided a summary of the Baseline Report, we expressly referred EIR preparers to Exhibit A of our comment letter for further detail and discussion. FEIR at 2-115, Comment 10-4. By omitting responses to the more detailed comments in the Baseline Report, the FEIR fails to address several of the comments submitted therein.

4. The FEIR Fails to Adequately Address the DEIR's Failure to Incorporate Available Data and Findings Related to Toxic Air Contaminants

We commented that the DEIR should have incorporated key findings from the Truck Reroute Study and its associated Health Impact Assessment ("HIA"). FEIR at 2-158 and 2-159, Comment 10-16. The FEIR response attempts to justify the failure to include this information based on timing of the document's publication, implying that there was no time to incorporate the information. FEIR at pp. 2-158 and 2-159, Response 10-16. However, the City is a co-author of the Truck Reroute Study, therefore staff should have collaborated to share relevant information to both the SCSP Plan and EIR and to the Truck Reroute Study. Moreover, the City has had more than three months to incorporate the findings of the study into the FEIR, but failed to do so.

This is not a mere technicality. The Truck Reroute Study and its HIA assessed the impact of air pollution (in relation to truck traffic) on the risk of common health outcomes, such as infant mortality, asthma, and cardio vascular events in the community. As explained in our prior comments and in the Baseline Report, one of the key findings of the HIA is that pregnant people who live within 1,000 feet of a freeway, 1,000 feet of a truck route, or 300 feet of a major road have significantly higher risk of adverse pregnancy outcomes, including preterm birth and infant mortality. FEIR at 2-123, Comments 10-16 and 10-17; Baseline Report at 9 and 10. Had this information been used for both analyses, the EIR could have taken into account the fact that parcels located within 1,000 feet of sensitive receptors should not be zoned to allow for polluting uses (e.g., warehouse uses) and that roads running along residential areas should not be identified as truck routes.

Similarly, the City has a 2015 Health Risk Assessment prepared for the Downtown Neighborhoods Community Plan (DNCP) in Fresno. This study showed particulate matter concentrations from vehicle emissions near State Routes in the DNCP area indicate existing cancer risk to sensitive receptors exceeds 100 in a million at distances from 1,000 to 5,000 feet from the freeways. FEIR at 2-123, Comment 10-17; and Baseline Report at 9. But rather than revising the EIR to incorporate this information, the FEIR only states that the DEIR's impact analysis and mitigation measures minimize the Project's significant impacts.

The FEIR refers specifically to Mitigation Measure 4.3-3d as the measure that addresses the Project's toxic air contaminant emission impacts. While this measure has been revised, it fails to specify truck routes or to establish a 1,000 foot buffer between truck routes and *existing* sensitive uses. At a minimum, the City should make the following revisions to Mitigation Measure 4.3-3d (shown in redline/strikeout):

Mitigation Measure 4.3-3d: Protect New and Existing Sensitive Land Uses
To minimize impacts from TAC exposure, for future <u>existing and</u> subsequent development under the proposed plan, the following measures shall be implemented:

- Avoid siting new sensitive land uses within ~~500~~ 1,000 feet from the centerline of a freeway, unless such development contributes to smart growth, open space, or transit-oriented goals, in which case the development shall include feasible measures such as separation/setbacks, landscaping, barriers, ventilation systems <u>with</u> <u>a Minimum Efficiency Reporting Value (MERV) 13 or higher to clean diesel particulate matter from indoor air</u>, ~~air filters/cleaners~~, and/or other <u>equivalent</u> effective measures to minimize potential impacts from air pollution by at least <u>85</u>%.[3]
- Require new sensitive land uses to include feasible measures such as separation/setbacks, landscaping, barriers, ventilation systems <u>with a Minimum Efficiency Reporting Value (MERV) 13 or higher to clean particulate matter from indoor air</u>, and/or other effective measures to minimize potential impacts from air pollution.

[3] Air filters with a MERV-13 rating or higher can reduce levels of indoor diesel PM by at least 85 percent relative to the incoming outdoor air. *See*, South Coast Air Quality Management District, 2009. Pilot Study of High Performance Air Filtration for Classrooms Applications, October, attached as Exhibit B; and Bay Area Air Quality Management District, 2016. Planning Healthy Places, attached as Exhibit C.

- For future development requiring the use of heavy-duty trucks, designate truck routes that avoid sensitive land uses and ensure the routes provide a 1,000-foot buffer from existing sensitive receptors.
- Require that zoning regulations provide adequate separation and buffering between existing and proposed residential and industrial uses (i.e., a minimum of 1,000 feet).
- Designate truck routes to avoid residential areas including low-income and minority neighborhoods ensuring the routes provide a 1,000-foot buffer from existing sensitive receptors.

As evidenced by the 2015 Health Risk Assessment prepared for the DNCP, these revisions are the minimum buffers needed and critical to protecting existing both existing and future residents, school children, and other sensitive receptors from toxic diesel fumes. Baseline Report at 9.

5. The FEIR Fails to Adequately Analyze the SCSP's Potential to Impact Public Health.

We commented that the DEIR failed to adequately analyze the SCSP's health risk resulting from construction emissions because it fails to evaluate construction emissions for the whole of the Project. FEIR at 2-129 and 2-130, Comment 10-24 and Baseline Report at 5. The Baseline Report comments also pointed out that, based on examples of other municipalities that successful evaluated plan-level health risks from construction, the City could also have conducted such an analysis. Baseline Report at 5 and 6. The FEIR response defends the EIR's approach of deferring analysis of construction emissions and requiring project level analysis and reiterates the requirements of Mitigation Measure 4.3-3a.

Moreover, the FEIR entirely ignores our comment that the DEIR failed to evaluate potential health risks associated with total organic gases emitted from passenger vehicles. FEIR at 2-120, Comment 10-24 and Baseline Report at 6. As explained in the Baseline Report, passenger vehicles (not just trucks) in urban areas can pose a significant health risk to sensitive receptors. *Id*. The FEIR fails to address these comments.

Additionally, the EIR still improperly bypasses analysis of emissions from the whole of the project rather than deferring until project-level analyses can be performed. Therefore, the FEIR fails to adequately address this issue.

The FEIR fails to correct the DEIR's inadequate analysis of the Project's cumulative health impacts to residents living close to truck routes and in close proximity to highways. FEIR at 2-130 and 2-132 and 2-133, Comment 10-27 and Baseline Report at 7 and 8. Here too, the FEIR defends the EIR's approach of deferring analysis of all Project-related emissions on the basis that the "SCSP provides a suite of land use designations with many allowable uses within each designation," implying that the analysis would be speculative. FEIR at 2-164, Response 10-27. However, the City could certainly estimate emissions based on the types of uses allowed under the proposed zoning, as other jurisdictions have done. Baseline Report at 5 and 6. The FEIR fails to provide evidence to support the conclusion that the analysis is infeasible or otherwise speculative, and fails to fulfill CEQA's mandate for analysis of cumulative impacts.

B. The Greenhouse Gas Emissions and Energy Analyses Do Not Comply With CEQA.

1. The FEIR fails to make a clear significance determination or base its conclusions on substantial evidence.

We commented that the DEIR's analysis of energy efficiency was inadequate because it failed to state how much energy would be wasted. FEIR at 2-165 and 2-166, Comment 10-32. The FEIR's response argues that its qualitative assessment was sufficient because it can be "reasonably assumed" that any project without electric vehicle infrastructure or other decarbonization methods would result in energy waste. *Id*. This is a non sequitur. Decarbonizing energy is not the same as reducing the waste of energy, regardless of its source. The EIR's conflation of these two issues precludes any meaningful analysis of how much energy a project may waste. It is insufficient to merely state that a project would not be perfectly efficient and stop there. CEQA demands meaningful analysis that is supported by substantial evidence. *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 392-93.

We also commented that the DEIR used an improper threshold of significance for GHG impacts. FEIR at 2-165, Comment 10-29. The EIR used a threshold that is not based on the state's most recent GHG reduction target or a target with milestones beyond 2030. *Id*. The FEIR's response defended its use of the threshold for two reasons: (1) 25 percent of the construction will occur in 2024 (i.e. before 2030), so the threshold need not be tied to milestones after 2030, and (2) the threshold was linked to the state target set by SB 32, which has not been superseded. FEIR at 2-165. Both of these reasons are insufficient.

First, 2024 is nearly over; it is virtually impossible for any, let alone 25 percent, of construction to occur in 2024. Further, even assuming most of the construction does occur before 2030, the DEIR assumed that some of it would occur as late as 2040. DEIR

4.6-7. Therefore, the threshold of significance should be based on an emissions target with future milestones beyond 2030.

Second, SB 32 is not the most recent state target. Regardless of whether the threshold is linked to SB 32 or the superseded EOB-30-15, neither represent the state's most recent emissions reduction legislation. AB 1279 established more aggressive emission reduction targets. DEIR at 4.6-4. Thus, the threshold of significance based on SB 32 is outdated and improper for use in the DEIR. Further, the second GHG threshold analyzes consistency with the 2022 Scoping Plan, which lays out the pathway to reach the 2045 goal set by AB 1279. DEIR at 4.8-14. The DEIR cannot purport to analyze for consistency with the Scoping Plan while it uses a numerical threshold based on an entirely different goal and premature milestone. Therefore, the significance threshold should be replaced with a figure tied to the current state goals.

Finally, the FEIR fails to explain why its selected threshold, based on a statewide target, is appropriate for use in this project. *Center for Biological Diversity v. Department of Fish & Wildlife* (2015) 62 Cal.4th 204, 227-28 held that while it is appropriate for an EIR to use a state emission reduction goal to formulate its threshold of significance, it must have evidence to show the amount of project-specific reductions needed to achieve compliance with the state goal. *Id*. at 227-28. It is not sufficient to assume that all projects will need to achieve the same level of reductions, regardless of project type or location. *Id*. at 227. Here, the DEIR similarly used a threshold that relied on a statewide target. FEIR at 2-165. But it failed to explain how that state target translated to a threshold of significance at the local level. Instead, the DEIR simply stated that it took that threshold from the Sacramento Metropolitan Air Quality Management District ("SMAQMD"). DEIR at 4.8-13. It lacks any evidence or explanation showing how this Sacramento-based threshold is appropriate for use in Fresno.

2. The FEIR's GHG and Energy analyses rely on improperly deferred mitigation and inadequate measures.

We commented that the DEIR's mitigation measures for GHG and energy impacts were inadequate. FEIR at 2-166 and 2-167, Comments 10-34 to 10-38. For example, we pointed out that measure 4.8-1a was impermissibly vague because it lacked specific performance standards. *Id*. at Comment 10-34. The FEIR's response defended the measure by claiming the analysis did not rely on it to conclude impacts would be less than significant. *Id*. at 2-166. It reasoned that because impacts were unavoidable, the vague measure was sufficient. *Id*. The FEIR provided a similar response to our other comments attacking the adequacy of mitigation measures. *Id*.

But the response fails to address the EIR's inadequacy as an informational document. A finding of unavoidable impacts does not cure defects in mitigation measures. *King & Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 865-870. An EIR must remedy deficiencies in its mitigation measures to properly serve as an informational document. *Id*. It does not matter whether the EIR relied on a specific mitigation measure or concluded impacts were unavoidable; the measures still must comply with CEQA's requirements. Therefore, all of the mitigation measures in the FEIR must be sufficiently specific, enforceable, and supported by substantial evidence.

Moreover, where a project's impacts are significant and unavoidable, the agency has an obligation to adopt all feasible mitigation. *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 524-25. Here, the DEIR found the project's energy impacts would be significant but unavoidable. DEIR at 4.8-18. Thus, to the extent that the agency finds the defective measures to be feasible, they must adopt and rely on them. The EIR may not simply make a "significant but unavoidable" finding and then ignore the mitigation measures. *Sierra Club*, 6 Cal.5th at 524-25. Further, at the very least, it is feasible to fix the issues with the mitigation measures. For example, measure 4.8-1a, which is impermissibly vague, can be fixed by adding specific performance standards to measure the efficacy of the low carbon concrete. *Sierra Watch v. County of Placer* (2021) 69 Cal.App.5th 86, 110. Accordingly, the FEIR must modify the mitigation measures to cure the defects before moving forward.

C. The FEIR fails to adequately disclose the Project's increase in VMT.

We commented that the DEIR's use of *per-capita* VMT was misleading because the increase in *total* VMT could lead to greater environmental impacts, including higher GHG emissions. FEIR at 2-168, Comment 10-42. The FEIR's response failed to address this issue. *Id*.

D. The FEIR Fails to Sufficiently Analyze Impacts Related to Bicyclist and Pedestrian Safety

Our DEIR comments emphasized the existing traffic safety hazards in South Central Fresno from industrial truck traffic on neighborhood streets that lack safe infrastructure for pedestrians and bicyclists. FEIR at 2-141 to 2-147, Comments 10-43 to 10-47. We noted that these hazards would be exacerbated by increased industrial development under the SCSP and the corresponding surge in truck traffic. We explained that CEQA requires the City to analyze and mitigate for such traffic safety impacts (see *City of Maywood v. Los Angeles Unified School District* (2012) 209 Cal.App.4th 362, 391), and that the DEIR omits this required analysis and related mitigation. FEIR at 2-141 to 2-147, Comments 10-43 to 10-47.

As explained below, the FEIR fails to recognize this obligation. It claims, despite information in the record to the contrary, that there is no evidence that SCSP implementation will result in significant traffic safety impacts and that the City therefore did not need to analyze them. It also errs in defending the DEIR's failure to examine how the AB 617 Truck Reroute Study, which it relies on to justify its claim that certain transportation hazards would be less than significant, could exacerbate truck safety hazards in the Plan Area.

1. The FEIR Must Examine How Implementation of the SCSP Would Impact Bicyclist, Pedestrian, and Traffic Safety.

Our letter commented that the DEIR does not meet its legal mandate to provide an intelligent evaluation of potential traffic safety harms. FEIR at 2-142, Comment 10-44. The DEIR examines four transportation-related impacts: Impact 1 – conflicts with existing general policies and programs, Impact 2 – VMT, Impact 3 – hazards from geometric design features or incompatible uses, and Impact 4 – emergency vehicle access. As we noted, the DEIR's analysis of these impacts does not assess what the SCSP's truck traffic impacts would actually be for the community. For example, the DEIR does not discuss where in the Plan Area increased truck traffic is most likely to create unsafe conditions, or how the Plan's end uses would impact users of the Plan Area's currently-precarious bike and pedestrian facilities. FEIR at 2-143, Comment 10-44. It thereby fails to conduct a sufficient analysis of traffic safety impacts under City of *Maywood*, 208 Cal.App.4th 392-95 (where a project increases the risk of conflicts between vehicles and pedestrians, an EIR must analyze and mitigate those impacts); see also Pub. Res. Code § 21002, 21002.1(b); CEQA Guidelines § 15065(a)(4) (where substantial evidence shows a project will "cause substantial adverse effects on human beings, either directly or indirectly," an agency must find that the project will have a significant effect on the environment).

The FEIR attempts to excuse these deficiencies by claiming that, as a program level EIR for the SCSP, it can and need do no more. FEIR at 2-168, Response 10-44. It asserts that the DEIR includes a thorough analysis of transportation hazards based on the level of project detail available. *Id*. It further suggests that the DEIR's statement that SCSP implementation would increase industrial uses in the area and result in considerable increases in truck traffic is all that CEQA requires. *Id*. And it contends that because "[t]he SCSP is a land use plan," that any greater level of analysis requires "individual project-specific details [that] are not available." *Id*.

The Court of Appeal has already warned the City that it cannot simply point to an EIR's programmatic nature "to justify its decision not to address pedestrian impacts at the program level." *South Fresno Community Alliance v. City of Fresno* (Cal. Ct. App., Aug. 6, 2024, No. F086180) 2024 WL 3663122, at *22; see also *Cleveland National Forest Foundation v. San Diego Association of Governments* (2017) 17 Cal.App.5th 413, 440 ("[t]he fact more precise information may be available during the next tier of environmental review does not excuse [an agency] from providing what information it reasonably can" at the first stage of environmental review). In *South Fresno Community Alliance*, the Court found that the program EIR for the City's General Plan should have analyzed traffic-related impacts to pedestrians, cyclists, and transit riders and concluded whether those impacts were significant. It noted that the record supported a fair argument that these impacts were significant because evidence showed that industrial development had resulted in increased traffic that impacts pedestrians, cyclists, and transit riders. Relying on *Maywood*, the Court found that, in light of this evidence, the program EIR did not adequately justify its decision to ignore these impacts at the program level.

The City's SCSP EIR takes the same deficient approach to traffic safety analysis that the Court invalidated in *South Fresno Community Alliance*: it discounts evidence of known hazards as an excuse to avoid analyzing impacts and requiring mitigation of significant impacts. The FEIR claims that our letter "offers no evidence to suggest that implementation of development under the SCSP would result in significant adverse impacts relative to bicycle, pedestrian, and traffic safety." FEIR at 2-168, Response 10-44. This is wrong. Our DEIR comment letter highlighted specific traffic hazard hot spots where residents feel the most acute danger from truck traffic. These include the Orange Center Elementary School, which is within the Plan Area on South Cherry Avenue between East Central Avenue and East North Avenue. These also include existing residential communities in close proximity to industrial uses throughout the Plan Area, including the community of Calwa. Our comments note that residents of these areas report that industrial truck traffic passes right in front of their homes and that this traffic has led them to feel unsafe walking or driving in their neighborhoods. FEIR at 2-169, Comment 10-45. We further noted that the DEIR omits any analysis of how residents of these communities will be impacted by truck and other traffic from projects developed under the SCSP.

The FEIR fails to provide any direct response to these comments. FEIR at 2-169, Response 10-45. Instead, it simply claims that future project-level traffic safety analysis will be sufficient to identify any hazards associated with increased truck and other traffic, and that projects' design standards will "address such hazards." FEIR at 2-168, Response 10-44. It further claims that AB 98 requirements for new logistics centers to locate loading docks and points of entry on arterials will reduce the SCSP's potential to "introduce a transportation hazard to bicycle or pedestrian safety." *Id*.

The FEIR's assertion that it need do no more no to analyze the SCSP's impacts to pedestrians and cyclists is unsupported and runs contrary to Court of Appeal's directives in *City of Maywood* and *South Fresno Community Alliance*. It is especially confounding because the issues in the *South Fresno Community Alliance* are the same as those here: traffic safety impacts of expanded industrial uses in South Fresno from implementation of a long-range planning document, in that case, the City's General Plan. The City cannot continue to ignore CEQA's requirement that it to evaluate traffic safety impacts on vulnerable community members in South Central Fresno.

2. The FEIR Improperly Relies On Proposed Policies To Conclude That The SCSP's Traffic Safety Impacts Would Be Less Than Significant.

Our letter explains that the DEIR improperly neglects to reach a conclusion about the significance of traffic safety impacts separately from its discussion of policies intended to mitigate such impacts. DEIR at 2-145, Comment 1-46. This circumvents CEQA's requirement to first examine the significance of an environmental impact, and then, for each significant impact, discuss proposed mitigation. Pub. Res. Code § 21100(b); *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645, 656. We further note that SCSP policies that DEIR suggests will mitigate possible impacts are too vague to serve as mitigation. See, e.g., Policy MT-5-d (implementation of traffic access design and control standards), MT-6-c (path or trail connections to recreational facilities in neighborhoods with lower per capita rates of vehicle ownership and parks and open space).

In response, the EIR defends its lack of analysis of traffic safety impacts by claiming that there was no evidence of such potential impacts for it to have analyzed. FEIR 2-169, Response 10-46. It notes that the DEIR described SCSP policies, development standards and other City requirements "that are aimed at precluding adverse safety impacts." *Id*. The FEIR claims that while these strategies collectively "will serve to improve safety and reduce the air quality, noise, and other impacts of truck traffic on the community of South Fresno" that it simply did not need to analyze traffic safety as a distinct impact because "the EIR determined that there is no evidence to suggest that approval of the SCSP would result in significant adverse [traffic] safety impacts." *Id*. Yet the EIR never actually made such a determination—it skipped over that analysis entirely.

This failure to analyze impacts of truck traffic on pedestrians and cyclists is inexcusable. The DEIR notes in its section disclosing areas of controversy that "truck traffic and safety hazards" is a "major area[] of controversy" for the Plan. DEIR at 2-4. Moreover, the DEIR and SCSP acknowledge that existing pedestrian facilities are inadequate. See DEIR at 4.15-12 ("[T]here are currently very limited pedestrian facilities in the vicinity of the project site. Sidewalks do exist on portions of East Avenue, North Avenue, Central Avenue, Church Avenue, and Jensen Avenue but are disconnected from one another or are disjointed"); SCSP at 120 ("there is a lack of complete sidewalks, which results in hazards to pedestrians, particularly to children around neighborhood schools that there are incomplete bicycle and pedestrian facilities within the Plan Area"). And, as described above, the very same issue was litigated in the *South Fresno Community Alliance* case, where the Court found evidence of traffic safety hazards from industrial truck traffic in this same area of the City. In failing to disclose, analyze, and mitigate the Project's significant transportation impacts on pedestrians, cyclists, and transit riders, even after being presented evidence of those impacts, the EIR violates CEQA. This omission was prejudicial because it prevented decisionmakers from understanding the nature and magnitude of impacts from increased truck traffic, and meant that the DEIR proposed no mitigation for those impacts.

3. The FEIR Fails To Adequately Analyze the Cumulative Affects Related to Bicyclist and Pedestrian Safety.

Our DEIR comments note that the City relies on the AB 617 Truck Reroute Study to support its claim that the SCSP's increase to transportation hazards from design features or incompatible uses impacts, Impact 4.15-3, will be less than significant. FEIR 2-146, Comment 10-47. The FEIR denies having relied on the Reroute Study for this purpose—it argues that the Reroute Study was still in progress when the DEIR was drafted and therefore could not have been relied on. This is contradicted by the fact the DEIR's discussion of Impact 4.15-3 describes how implementation of the recommendations from the traffic study along with application of SCSP policies and the City's development design standards will together reduce the significance of this impact. DEIR at 4.15-16.

Our letter further explains that residents have causes for concern that the Reroute Study will increase, and not reduce, truck safety hazards in the Plan Area and near sensitive receptors. FEIR at 2-147, Comment 10-47. This is because it plans to divert heavy duty traffic from some areas of Fresno, which will increase traffic in portions of the Plan Area, and the study does not limiting truck traffic via its "Truck Regulated Areas" in parts of the Plan Area where people live and go to school. *Id*. The FEIR acknowledges this comment (FEIR at 2-169, Response 10-47), but then includes a cross reference to Master Response 6, which fails to address it (FEIR at 2-8 and 2-9). Master Response 6 does not address concerns about truck traffic being diverted on to routes on Cedar Avenue and North Avenue near existing residences. Additionally, the Reroute Study will continue to allow heavy trucks to access warehouse in regulated areas, if those trucks are not through traffic. Because the SCSP and Reroute Study are closely related plans, and especially in light of the Reroute Study's potential to increase traffic near sensitive receptors in the Plan Area, the DEIR erred in not conducting an analysis of SCSP and Reroute Study's cumulative safety risks. This omission renders its cumulative impacts analysis deficient and its conclusion that no mitigation is needed invalid.

E. The FEIR Fails to Provide an Adequate Analysis of the Project's Potentially Significant Cumulative Impacts

Our letter explained that the DEIR's cumulative impacts analysis for air quality, public health, climate change, public safety and noise is deficient because it fails to include the Caltrans South Fresno State Route 99 ("SR 99") Corridor Project. FEIR at 2-150, Comment 10-51. The SR 99 project will add significant capacity to the North Avenue interchange in the center of the Plan Area and to the American Avenue interchange one mile southeast. Our letter attached as Exhibit K the extensive comments, including an expert report from Dr. Amy Lee and Regan Patterson, that Friends of Calwa, Inc. and Fresno Building Healthy Communities submitted to the Federal Highway Administration ("FHWA") on July 14, 2024. Those explain how the SR 99 project will more than double capacity for heavy duty trucks and cars to travel between SR 99 and local South Fresno roadways and will add thousands of daily truck trips to the area, increasing associated environmental harms. *Id*. They further explain how the SR 99 project "will significantly worsen existing air quality burdens and poor health outcomes for South Fresno residents by inducing even more heavy-duty truck and car traffic and new and intensified industrial development." *Id*. at 20. The comments describe how "a robust scientific literature … establish[es] that highway expansion projects like" the SR 99 project "'spur[] more vehicle travel on the highway' by increasing highway accessibility and reducing travel costs and burden, as well as spurring 'land development activity' that in turn contributes even more truck and car traffic." *Id*. at 2.

The FEIR fails to substantively address these comments and ignores the information in our letter and Exhibit K that the SR 99 project would induce diesel truck travel. Instead, the FEIR asserts that its cumulative impacts analysis passes muster because it purportedly used the "plan" approach to identify the cumulative setting identified in CEQA Guidelines section 15130(b)(1)(B), rather than using a list of past, present, and future probable projects, under CEQA Guidelines section 15130(b)(1)(A). FEIR at 2-170, Response 10-51. Under this "plan" approach, an EIR's cumulative impacts analysis is based on a summary of projections in a relevant planning document. The City claims that the DEIR's cumulative analysis considered development that is anticipated to occur in accordance with the City's General Plan and that individual projects, including the SR 99 project, were therefore not identified in the DEIR. *Id*.

However, the DEIR's cumulative impact section fails to actually describe how the City's 2014 General Plan, which was adopted a decade ago, fully "describes or evaluates conditions contributing to the cumulative effect" of the SCSP, including the SR 99 project. CEQA Guidelines § 15130(b)(1)(B); see also *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1217 ("[t]he summary-of-projections approach may present problems if the projections in the general plan or related planning document are inaccurate or outdated"). Moreover the City's General Plan includes no discussion of Caltrans' SR 99 project or even a general discussion of plans to update or expand freeway infrastructure within the City.

When analyzing the cumulative impacts of specific environmental impact areas, the SCSP EIR generally does not actually use a summary of projections from the City's General Plan. For example, in its cumulative impacts analysis for transportation hazards, the SCSP EIR does not even mention consistency with its General Plan, much less evaluate the SCSP's impacts in conjunction with those of transportation-related projections in the General Plan. Instead, it simply claims that "[i]n general, transportation hazards are site-specific and not cumulative in nature." DEIR at 5-17. It then concludes that cumulative transportation hazard impacts will be less than significant because "[a]ll transportation related infrastructure improvements constructed under the [SCSP] would be subject to and designed in accordance with all applicable design standards" and because "[o]ther nearby projects within the public right-of-way would also be required to comply with the City's construction standards." *Id*. It is unclear what "other projects" are included in this analysis, or how adherence to design standards would prevent exacerbating dangers at traffic hazard hotspots. Likewise, the DEIR's cumulative impacts analysis for operational noise fails to mention the General Plan, and makes a vague statement that "combined with traffic from other development in the area, additional increases in transportation noise would occur."

In these instances, the City's cumulative impacts analysis does not appear to follow either of the two permissible methods under CEQA Guidelines section 15130(b)(1). It does not include a list of past, present, and probable future projects producing related or cumulative impacts, nor does it include a summary of projections contained in an adopted relevant planning document that describes or evaluates conditions contributing to the cumulative effect. The City was therefore unjustified in refusing to consider the cumulative impacts of the SR 99 project in the SCSP EIR, which as a result fails to disclose the extent and severity of cumulative impacts of heavy duty truck traffic from the Hwy 99 project. See *Bakersfield Citizens for Local Control*, 124 Cal.App.4th at 1217 ("[u]se of a planning document" as a basis for cumulative impacts analysis "does not preclude challenge to the accuracy or sufficiency of" that analysis).

Our letter also commented that the cumulative impact analysis for noise further erred in making an unsupported assertion that "no additional mitigation is available beyond what is identified" in the document. FEIR at 2-150, Comment 10-52; DEIR at 5-14. Our letter proposed several mitigation strategies that could have been incorporated into the SCSP, including establishing a prohibition on truck traffic traveling through residential areas. FEIR at 2-150 to 2-151, Comment 10-52. The FEIR fails to evaluate the feasibility of these proposals, and incorrectly claims that the Plan already includes the suggested mitigation. FEIR at 2-170, Response 10-52. It does not. It then claims that "[n]o element of [that] project would generate additional truck traffic." This assertion ignores the extensive comments and expert report we submitted as Exhibit K to our DEIR letter with evidence to the contrary, as described above. Lacking a reasoned basis for that conclusion, the FEIR cannot therefore claim that the City need not mitigate for cumulative noise impacts of the SR 99 project and the SCSP.

III. The FEIR Must Be Revised and Recirculated.

Under California law, the present FEIR cannot properly form the basis of a final EIR. CEQA and the CEQA Guidelines describe the circumstances that require recirculation of a EIR. Such circumstances include whether, as is the case here, the EIR is so "fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded." CEQA Guidelines § 15088.5.

Here, as this letter explains, the FEIR fails to adequately reveal or describe the true extent of numerous significant environmental impacts, which clearly requires extensive new information and analysis. This analysis will likely result in the identification of new, substantial environmental impacts or substantial increases in the severity of significant environmental impacts. Once the EIR reveals the full extent of the Specific Plan's impacts, the City should consider land use designation changes that to lessen such impacts.

IV. Conclusion

Given the numerous adverse environmental impacts not fully disclosed and properly analyzed in the EIR, the Leadership Counsel opposes the Project as proposed. Implementing the Project as proposed would exacerbate the already significant adverse impacts suffered by South Central Fresno residents. As described above, the EIR violates CEQA in numerous respects. Unfortunately, the impact of the CEQA violations will be felt most acutely by the City's most vulnerable residents: low-income residents and communities of color. Through the environmental review process, the City has an opportunity to develop a Specific Plan that minimizes the Project's significant impacts and complies with CEQA, while at the same time ensuring that the most disadvantaged neighborhoods in South Central Fresno do not bear the burdens of the City's growth.

The Leadership Counsel respectfully urges the City to delay further consideration of this Project until the City makes the requisite changes as described in our comments, and as requested by residents of the SCSP area, and prepares and recirculates a revised DEIR that fully complies with CEQA and the CEQA Guidelines. On behalf of the Leadership Counsel, we thank you for the opportunity to review the FEIR, and thank you for considering and addressing these comments before taking further action.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

[redacted]

Edward T. Schexnayder

Cc:

Robert Swanson, Deputy Attorney General, Bureau of Environmental Justice, California Attorney General's Office, [redacted]

Brian Moore, Air Resources Supervisor, CARB, [redacted]

Ryan Hayashi, Deputy Air Pollution Control Officer, SJVAPCD, [redacted]

Sophia Pagoulatos, Planning Manager, [redacted]

Georgeanne White, City Manager, [redacted]

City Council Members

Exhibits:

Exhibit A:	Baseline Environmental, Inc. Report with resume
Exhibit B:	South Coast Air Quality Management District, 2009. Pilot Study of High Performance Air Filtration for Classrooms Applications.
Exhibit C:	Bay Area Air Quality Management District, 2016. Planning Healthy Places.

EXHIBIT A

BASELINE ENVIRONMENTAL CONSULTING

July 29, 2024
23213-00

Carmen J. Borg
Shute, Mihaly & Weinberger LLP
[redacted]

Subject: **Review of the Air Quality Impacts for the Fresno South Central Specific Plan Draft Environmental Impact Report**

Dear Ms. Borg:

Baseline Environmental Consulting (Baseline) has reviewed the Draft Environmental Impact Report (Draft EIR) prepared by Ascent for the proposed South Central Specific Plan (SCSP) in the City of Fresno, California. The SCSP area (Plan Area) encompasses 5,567 acres located just south and southeast of Downtown Fresno. Based on our review of the Draft EIR, we have identified substantial flaws in the analysis used to support the significance determinations and evaluation of mitigation measures for air quality impacts related to development in the Plan Area, as described in detail below.

Unsubstantiated Estimates of Criteria Air Pollutant Emissions

As described on page 4.3-17 of the Draft EIR, two construction scenarios (herein referred to as "Construction Scenario 1" and "Construction Scenario 2") were used to evaluate emissions of criteria air pollutants associated with proposed development in the Plan Area:

- **Construction Scenario 1:** Construction of 25 percent of all the proposed land uses would be completed in the year 2024.
- **Construction Scenario 2:** Construction of 75 percent of all the proposed land uses would be evenly distributed between 2025 and 2040.

As described in the Draft EIR, Construction Scenario 1 is considered a worst-case scenario and is based on guidance from the Sacramento Metropolitan Air Quality Management District (SMAQMD) for conducting a program-level analysis of criteria air pollutant emissions.[1] Construction Scenario 2 is not recommended by the SMAQMD and justification for evaluating this scenario was not provided in the Draft EIR. Construction Scenario 2 only considered 75

[1] Sacramento Metropolitan Air Quality Management, 2021. Guide to Air Quality Assessment in Sacramento County. Available at: https://www.airquality.org/residents/ceqa-land-use-planning/ceqa-guidance-tools. Revised April.

percent of the proposed land uses to estimate the long-term average criteria air pollutant emissions from development under the proposed plan. However, for the purposes of estimating the long-term average criteria air pollutant emissions, modeling 100 percent of the proposed land uses over the plan horizon period would provide a substantially more representative scenario.

Additionally, according to Tables 4.3-4 and 4.3-5 in the Draft EIR, the maximum annual emissions of criteria air pollutants estimated under Construction Scenarios 1 and 2 would be below the San Joaquin Valley Air Pollution Control District's (SJVAPCD) thresholds of significance. However, there are substantial errors in the modeling results for both construction scenarios. These errors and corrected analyses are presented below.

Construction Scenario 1

As described on page 4.3-17 of the Draft EIR, CalEEMod was used to estimate the criteria air pollutant emissions during construction of the proposed land uses in the Plan Area. CalEEMod utilizes models widely accepted by regulatory agencies to estimate emissions of criteria air pollutants. CalEEMod provides default construction schedules and equipment profiles (equipment type, hours of activity, etc.) based on the size of the proposed development. The default construction schedule and equipment profile are derived from a survey of over 50 construction sites in California. The CalEEMod default construction parameters can be modified based on site-specific information, but the user is required to provide substantial evidence to justify all changes from the default model settings.

Under Construction Scenario 1, the default schedule in CalEEMod for construction of 25 percent of the proposed land uses in the Plan Area is about eight years. Because Construction Scenario 1 requires construction to be completed in one year, the Draft EIR modified the default schedule in CalEEMod from eight years to one year. However, the Draft EIR analysis did not increase the intensity of construction equipment and vehicle use that would be needed to complete eight years of construction activities within one year.

To help demonstrate this concept, a hypothetical example is provided in **Table 1**. In this example, the default equipment schedule and profile in CalEEMod indicate that one excavator would be required to demolish a building in two weeks (10 work days). The default schedule could presumably be reduced to one week if a second excavator is used at the site to help complete the work in half the time. By increasing the intensity of equipment use in proportion to the corresponding reduction in the schedule, the overall level of effort required to demolish the building remains the same. However, the Draft EIR analysis did not increase the intensity of equipment use to maintain the level of effort required when reducing the default construction schedule from eight years to one year. As a result, seven years of the default construction activity are unaccounted for in the Draft EIR analysis, and the level of effort required to complete Construction Scenario 1 is underestimated by about 87.5 percent.

Table 1. Hypothetical Example of Modifying CalEEMod Default Construction Parameters

CalEEMod Scenarios	Equipment	Total Days	Hours per Day	Amount	Total Hours	Default Effort Maintained?
Default Model	Excavator	10	8	1	80	---
Modified Model (incorrect)	Excavator	5	8	**1**	**40**	**No**
Modified Model (correct)	Excavator	5	8	**2**	**80**	**Yes**

Notes: Incorrect parameter shown in **red font** and correct parameter shown in **green front**.

Baseline has prepared an updated analysis of criteria air pollutant emissions for Construction Scenario 1 that uses the same input parameters as the Draft EIR but increases the default intensity of equipment and vehicle use for each phase of construction in proportion to the reduction in the default schedule. As documented in **Attachment A**, the default construction phases were modified to be evenly distributed throughout one calendar year (260 work days) and the default off-road construction equipment activity and daily vehicle trips for workers and vendors were scaled for each phase of construction to maintain the overall level of effort required to complete Construction Scenario 1. As shown in **Table 2**, the estimated emissions of reactive organic gases (ROG) and nitrogen oxides (NOx) for Construction Scenario 1 would exceed the SJVAPCD thresholds, resulting in substantially more severe criteria air pollutant impacts than analyzed in the Draft EIR. Furthermore, the emissions are up to 597 percent higher than the unsubstantiated results reported in the Draft EIR. As a result, the Draft EIR did not properly disclose the severity of potential air quality impacts to the public associated with Construction Scenario 1.

Table 2. Corrected Analysis of Criteria Air Pollutant Emissions for Construction Scenario 1 (tons per year, 2024)

Scenario	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Draft EIR Analysis[1]	8.2	5.0	7.6	0.02	1.6	0.5
Updated Analysis[2]	**13.2**	**27.6**	52.9	0.07	9.1	3.0
Percent Change	61%	448%	597%	250%	464%	482%
SJVAPCD Thresholds	10	10	100	100	15	15

Notes: Bold font with orange shading indicates the value exceeds the threshold.
[1] See Table 4.3-4 and Appendix B of the Draft EIR.
[2] See CalEEMod report in Attachment A.

Construction Scenario 2

Under Construction Scenario 2, the default schedule in CalEEMod for construction of 75 percent of the proposed land uses in the Plan Area is about 24 years. Like Construction Scenario 1, the Draft EIR reduced the default schedule to one year. There are several major errors associated with this approach.

First, the Draft EIR analysis provides no explanation for why the construction schedule would need to be reduced to one year, when the methodology on page 4.3-17 of the Draft EIR indicates that the construction would be evenly distributed over 15 years between 2025 and 2040. Second, the Draft EIR analysis failed to increase the intensity of equipment use to maintain the level of effort required to reduce the default construction schedule from 24 years to one year. As a result, the Draft EIR analysis underestimated the level of effort required to complete Construction Scenario 2 by about 95.8 percent. Third, the Draft EIR analysis divided the criteria air pollutant emissions estimated for one year of construction by 15 years, which is equivalent to the timespan from 2025 to the buildout horizon in 2040. Presumably, this was intended to calculate the average annual emissions over a 15-year period, which would be an egregious error given that the analysis already neglected to account for 23 of the 24 years of default construction activity. Essentially, the Draft EIR estimated the emissions for only 1/24th of the default construction activity required to complete Construction Scenario 2, and then divided that fraction of emissions by an additional 15 years without any justification. Finally, the Draft EIR claimed that the estimated emissions presented in Table 4.3-5 represent the "maximum annual emissions" after apparently attempting (and failing) to calculate the average annual emissions over 15 years.

Baseline has prepared a corrected analysis for a modified Construction Scenario 2 that accounts for the construction of 100 percent of the proposed land uses in the Plan Area (instead of 75 percent) spread evenly between 2024 and 2040. The purpose of this modified scenario is to provide a representative evaluation of both the maximum and average annual criteria air pollutant emissions when construction is spread evenly over the plan horizon period. Similar to the updated analysis for Construction Scenario 1, Baseline reduced the default construction schedule in CalEEMod to fit between 2024 and 2040 and increased the default intensity of equipment and vehicle use for each phase of construction in proportion to the reduction in the default schedule. As shown in **Table 3**, the estimated maximum and average annual emissions of NOx for modified Construction Scenario 2 would exceed the SJVAPCD threshold, resulting in a substantially more severe impact than analyzed in the Draft EIR.

Table 3. Corrected Analysis of Criteria Air Pollutant Emissions for Modified Construction Scenario 2 (tons per year, 2024 - 2040)

Emission Scenario	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Maximum Annual Emissions[1]	6.5	**15.7**	41.1	0.04	7.3	2.0
Average Annual Emissions[1]	5.0	**11.6**	27.5	0.04	7.2	1.9
SJVAPCD Thresholds	10	10	100	27	15	15

Notes: Bold font with orange shading indicate the value exceeds the threshold.
[1] See CalEEMod report in Attachment A.

False Statement about Construction Health Risks

Page 4.3-29 of the Draft EIR states the following regarding the exposure of sensitive receptors to toxic air contaminants (TACs), such as diesel particulate matter (PM), during construction:

> *Considering the relatively short duration in which diesel PM-emitting construction activity would take place at any given location in the Plan Area, the distance to the nearest sensitive receptors, and the highly dispersive properties of diesel PM, construction-related TAC emissions for any given project would not expose existing sensitive receptors to an incremental increase in cancer risk greater than 20 in 1 million or a hazard index greater than 1.0.*

This statement is unsubstantiated. According to the Office of Environmental Health Hazard Assessment (OEHHA), there is valid scientific concern regarding the health effects on children exposed to airborne carcinogens such as diesel PM from construction activities lasting more than six months. This is because children are about 10 times more susceptible to health effects from exposure to TACs than adults.[2] In addition, when accounting for the higher breathing rate per body mass and higher fraction of time at home for a child versus an adult, a child is about 48 times more susceptible to cancer risk from exposure to TACs than an adult. This means a child exposed to one year of diesel PM emissions from construction would have the equivalent cancer risk to an adult exposed to the same level of diesel PM emissions over 48 years. Therefore, the "relatively short duration" of construction activities is not substantial evidence for dismissing construction-related health risks, especially in regard to the health risks posed to nearby children.

Furthermore, there are numerous health risk assessments in California that demonstrate sensitive receptors exposed to diesel PM during construction can result in a cancer risk greater than 20 in a million. For example, the 2022 San Francisco Housing Element Update Environmental Impact Report (Housing Element EIR) evaluated the potential cancer risk for sensitive receptors exposed to a wide range of construction projects proposed under the plan. For the hypothetical construction of a 120,000-square-foot building, the Housing Element EIR estimated that the cancer risk associated with construction could range from 173 in a million for adjacent sensitive receptors to 21 in a million for sensitive receptors located 100 meters (328 feet) from the site.[3] Therefore, there is substantial evidence to support that individual construction projects can result in a cancer risk greater than the SJVAPCD's threshold of 20 in a

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[2] Office of Environmental Health Hazard Assessment (OEHHA). 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. Available at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. February.

[3] San Francisco Planning Department, 2022. San Francisco Housing Element 2022 Update, Draft Environmental Impact Report, Appendix I, Air Quality Supporting Information. Available at: https://rb.gy/k00xs5 April 20.

million. Again, the Draft EIR has failed to disclose the severity of potential air quality impacts to the public associated construction of proposed land uses in the Plan Area.

Inadequate Analysis of Operational Vehicle Health Risks

Page 4.3-30 of the Draft EIR evaluated health risks associated with the operation of new facilities with high truck use in the Plan Area. The Draft EIR states that "the operation of trucks accessing the Plan Area could result in exposure to receptors that could cumulatively combine to generate a cancer risk exceeding 20 in one million or a hazard index greater than 1.0."

The Draft EIR failed to evaluate potential health risks associated with emissions of total organic gases from passenger vehicles. According to an analysis prepared to support the San Francisco Air Quality and Greenhouse Gas Analysis Guidelines,[4] the following types of development projects would require a health risk assessment because they could generate new passenger vehicle trips that expose sensitive receptors to substantial pollutant concentrations:

- Projects that would result in primarily passenger vehicle trips (e.g., residential, office, mixed use residential and office) above 1,150 vehicles per day; or
- Projects that would generate a mix of new car and trucks with volumes above 225 vehicles/day.

Therefore, there is substantial evidence to support that passenger vehicles in urban areas can also pose significant health risk impacts to sensitive receptors. The health risk impacts associated with emissions of total organic gases from passenger vehicles were not assessed in the Draft EIR.

Improper Application of the Project-Level Cancer Risk Threshold

Page 4.3-16 of the Draft EIR states the following:

> *TAC impacts would be significant if development under the proposed plan would expose the public to substantial levels of TACs so that the probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 20 in 1 million or an acute or chronic Hazard Index that equals or exceeds 1 for the MEI for non-carcinogens.*

It should first be noted that this definition should be revised to match the SJVAPCD's recommended project-level cancer risk threshold:[5]

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[4] San Francisco Planning Department, 2024. Air Quality and Greenhouse Gas Analysis Guidelines. Available at https://sfplanning.org/air-quality. July.

[5] San Joaquin Valley Air Pollution Control District, 2015. Air Quality Thresholds of Significance-Toxic Air Contaminants. Available at: https://ww2.valleyair.org/media/2lpbkso0/2-cms-format-air-quality-thresholds-of-significance-toxic-air-contaminants.pdf. July 13.

Maximally Exposed Individual risk equals or exceeds 20 in one million.

The Draft EIR uses the SJVAPCD's project-level cancer risk threshold to separately evaluate the following three sources of TAC emissions associated with proposed land uses in the Plan Area:

1) Construction
2) Operational Permitted Sources
3) Operational Truck Activity

To address potential health risks associated with these three sources of TACs, the Draft EIR includes Mitigation Measures 4.3-3a, 4.3-3b, and 4.3-3c which require future projects in the Plan Area to prepare and implement the recommendations of a site-specific health risk assessment to ensure that the cancer risk to nearby sensitive receptors associated with that source is at or below the SJVAPCD's threshold of 20 in one million.

The Draft EIR has erroneously applied the SJVAPCD's project-level cancer risk threshold in a piecemeal fashion to three sources of TACs associated with an individual project. The cancer risk from multiple sources attributed to a single project is a cumulative condition. For example, if a child in a nearby residence is exposed to diesel PM during project construction, their lifetime cancer risk associated with the project does not reset when construction ends and operation begins but continues to increase. The total cancer risk to a nearby to sensitive receptor attributed to an individual project should be based on the combined cancer risk from exposure to TACs from construction, operational permitted sources, operational truck activity, and other sources. This total cancer risk should then be compared to the project-level cancer risk threshold of 20 in one million. By applying the cancer risk threshold in a piecemeal fashion to each source of project-related TAC emissions, the Draft EIR has allowed individual projects to generate a total cancer risk as high as 60 in a million at nearby sensitive receptors.[6] This level of pollution exposure is not supported by the SJVAPCD, and is especially unacceptable given the extremely high levels of existing poor air quality and pollution burden in the South-Central Fresno community, as discussed below.

Failure to Protect the South-Central Fresno AB 617 Community

Assembly Bill 617 (AB 617) aims to help protect air quality and public health in communities that are disproportionately affected by air pollution. The bill requires the California Air Resources Board (CARB) to identify heavily polluted communities suffering from a high exposure burden and directs regional air districts to focus air quality improvement efforts through implementation of community air monitoring plans and adoption of emission reduction programs within these identified areas.

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[6] 20 in a million for construction + 20 in a million for permitted sources + 20 in a million for truck activity = 60 in a million.

Fresno County has some of the nation's greatest environmental inequalities. In 2022, the City of Fresno had the highest short-term particle pollution, second highest year-round particle pollution, and fourth highest ozone pollution in the nation.[7] According to the state's CalEnviroScreen model, the South-Central Fresno community in particular has a high cumulative air pollution exposure burden that has adversely affected census tracts designated as disadvantaged communities. The CalEnviroScreen model uses environmental, health, and socioeconomic information to produce scores for every census tract in the state. An area with a high overall score is one that experiences a much higher pollution burden than areas with low scores. The average overall CalEnviroScreen score in the South-Central Fresno community is above the 97th percentile.[8] Due to the high cumulative air pollution exposure burden, the South-Central Fresno community was selected by CARB for enrollment in the AB 617 program.

As acknowledged on pages 4.3-12 and 4.3-28 of the Draft EIR, the Plan Area is located within the South-Central Fresno AB 617 Community and the proposed plan would introduce new sources of TACs that could exacerbate the already adverse conditions of the disadvantaged community. However, the subsequent methodology and analysis of air quality impacts presented in the Draft EIR fail to make any further connection to account for the existing poor air quality and pollution burden that exists in the South-Central Fresno Community. Specific concerns related to air quality impacts in the South-Central Fresno AB 617 Community are presented below.

Existing Air Quality in the AB 617 Community

The Draft EIR analysis did not consider critical information about the existing air quality (i.e., baseline conditions) in the Plan Area and surrounding communities related to freeways and high-volume roadways. In April 2024, the SJVAPCD and City of Fresno completed the *South-Central Fresno AB 617 Community Truck Reroute Study: Truck Routing and Implementation Strategies Report* (Truck Reroute Study) which recommends specific strategies to mitigate negative freight impacts, improve air quality, and improve the overall quality of life for members of the South-Central Fresno AB 617 Community. The Truck Reroute Study is supported by a Health Impact Assessment within the City of Fresno (Fresno HIA) that was published in April 2024.[9] The primary objective of the Fresno HIA was to assess the impact of air pollution (in relation to truck traffic) on the risk of common health outcomes, including infant mortality, preterm delivery, asthma, and cardio cerebral vascular events in the city of Fresno.

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[7] UC Merced Community and Labor Center, 2024. Fresno Community Environmental Health Impact Assessment. Available at: https://clc.ucmerced.edu/sites/clc.ucmerced.edu/files/page/documents/fresno_hia_report.pdf. April.
[8] San Joaquin Valley Air Pollution Control District, 2019. Community Emissions Reduction Program; South Central Fresno. Available at: https://community.valleyair.org/media/1516/01finalscfresnocerp-9-19-19.pdf. September 19.
[9] UC Merced Community and Labor Center, 2024. Fresno Community Environmental Health Impact Assessment. Available at: https://clc.ucmerced.edu/sites/clc.ucmerced.edu/files/page/documents/fresno_hia_report.pdf. April.

One of the key findings from the Fresno HIA was that pregnant people who lived within 1,000 feet of a freeway, 1,000 feet of a truck route, or 300 feet of a major road had significantly higher risk of adverse pregnancy outcomes, including preterm birth and infant mortality. Based on these findings, the Truck Reroute Study applied a 1,000-foot buffer around proposed truck routes to determine where truck emissions could pose health risks to residential areas in the South-Central Fresno AB 617 Community. As shown in **Figure 1**, the 1,000-foot buffer distance around the proposed truck routes would affect many sensitive receptors in the Plan Area.

It should be noted that the Fresno HIA did not evaluate excess cancer risk associated with diesel PM emissions along proposed truck routes in the Plan Area. In 2015, a health risk assessment was prepared for the Downtown Neighborhoods Community Plan (DNCP) in the City of Fresno,[10] which is located adjacent and to the north of the Plan Area. The study modeled diesel PM concentrations from vehicle emissions along State Route (SR) 99, SR 41, and SR 180 in the DNCP area and found that the existing cancer risk to sensitive receptors exceeded 100 in a million at distances ranging from about 1,000 to 5,000 feet from the freeways.

The Draft EIR should be revised to evaluate the existing air quality conditions for sensitive receptors in the South-Central Fresno AB 617 Community related to mobile-source TAC emissions, as well as other sources of TAC emissions (e.g., railroads and stationary sources).

Cancer Risk Thresholds Protective of the AB 617 Community

Air quality impacts and resulting human health risks are by their very nature cumulative impacts. Emissions from past, present, and future projects contribute cumulatively to health risks for sensitive receptors. To evaluate health risk impacts from a new development under the proposed plan, the Draft EIR must consider the existing health risks in the community plus the additional health risks that would be experienced by sensitive receptors because of new development. Based on cumulative health risks, the Draft EIR must also define what "substantial air pollutant concentrations" are with respect to TACs that cause cancer and other adverse health effects in the community.

In accordance with Appendix G of the CEQA Guidelines, the Draft EIR evaluated if development under the proposed plan would expose sensitive receptors to substantial air pollutant concentrations. In particular, the Draft EIR used the SJVAPCD's project-level cancer risk threshold of 20 in a million to evaluate if the proposed plan would introduce new sources of TACs "that could exacerbate the already adverse air quality conditions" in the South-Central Fresno AB 617 Community (pages 4.3-28 through 4.3-33).

[10] FirstCarbon Solutions, 2015. Health Risk Assessment Report: Downtown Neighborhoods Community Plan, Fulton Corridor Specific Plan, and the Downtown Development Code Project, City of Fresno, Fresno County, California. Available at: https://www.fresno.gov/wp-content/uploads/2023/04/AppEAQASMBLD.pdf. November 12.

According to CEQA Guidelines section 15064.7(c):

> *When adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.*

There does not appear to be any substantial evidence to support the use of the SJVAPCD's project-level cancer risk threshold of 20 in a million to evaluate how development under the proposed plan could exacerbate the already adverse air quality conditions in the South-Central Fresno AB 617 Community and expose sensitive receptors to substantial air pollutant concentrations. This is because the threshold does not account for the following:

- Existing levels of air pollution and health risks in Plan Area;
- Communities of color experiencing higher health risks for the same exposures to pollution in the Plan Area;[11] and
- The cumulative health risks associated with exposure to air pollution.

Regarding cumulative cancer risk, the San Francisco Planning Department defines areas with substantial air pollutant concentrations based on a cancer risk of 100 in a million, which is consistent with the U.S. Environmental Protection Agency's guidance for air toxic analyses at the community-scale level. However, the San Francisco Planning Department also applies a more stringent definition of substantial air pollutant concentrations based on a cancer risk of 90 in a million in areas of the city with the highest percentage of health vulnerable residents (i.e., disadvantaged communities). To define areas with substantial air pollutant concentrations, San Francisco Environmental Planning has effectively considered the existing air quality conditions, the existing health risks in the community including receptors more vulnerable to air pollution, and the cumulative health risks associated with exposure to air pollution from new development.[12]

After defining areas with substantial air pollutant concentrations, the Draft EIR must determine a project-level cancer risk threshold that would represent a substantial health risk contribution from new development under the proposed plan. For example, San Francisco Environmental Planning defines project-level cancer risk thresholds based on the following two scenarios (as paraphrased):

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[11] UC Merced Community and Labor Center, 2024. Fresno Community Environmental Health Impact Assessment. Available at: https://clc.ucmerced.edu/sites/clc.ucmerced.edu/files/page/documents/fresno_hia_report.pdf. April.
[12] San Francisco Planning Department, 2024. Air Quality and Greenhouse Gas Analysis Guidelines. Available at https://sfplanning.org/air-quality. July.

1. If the existing health risks at receptors do not exceed the substantial pollutant concentrations defined for the area (e.g., cancer risk of 90 or 100 in a million) but would meet or exceed with the project, then an excess cancer risk at or above 10 per million from a project is considered a substantial health risk contribution.

2. If the existing health risks at receptors already meet or exceed the substantial pollutant concentrations defined for the area (e.g., cancer risk of 90 or 100 in a million), then an excess cancer risk at or above 7 per million from a project is considered a substantial health risk contribution.

The South Coast Air Quality Management District is currently developing updated guidance for evaluating cumulative air quality impacts from increased concentrations of TACs for projects in the South Coast Air Basin. The guidance is considering a range of project-level cancer risk thresholds ranging from as low as 1 in a million to as high as 10 in a million based on the existing cancer risks from air pollution in the basin, proximity to high volume diesel-fueled mobile sources, and the protection of AB 617 communities, as well as other criteria.[13]

The project-level cancer risk thresholds for San Francisco and the South Coast Air Basin account for existing air quality conditions, existing health risks in the community including receptors more vulnerable to air pollution, and the cumulative health risks to sensitive receptors associated with exposure to substantial air pollutant concentrations from new development. In addition, these project-level thresholds are far more stringent than the cancer risk threshold of 20 in a million used in the Draft EIR analysis. Given that the South-Central Fresno AB 617 Community experiences similar or more severe air pollution burden than communities in San Francisco and the South Coast Air Basin (e.g., Los Angeles), the Draft EIR should be revised to use a more conservative project-level cancer risk threshold that is supported by substantial evidence to evaluate if development under the proposed plan would expose sensitive receptors to substantial air pollutant concentrations based on existing conditions in the South-Central Fresno AB 617 Community.

New Sensitive Receptors Exposed to Toxic Air Contaminants in the AB 617 Community

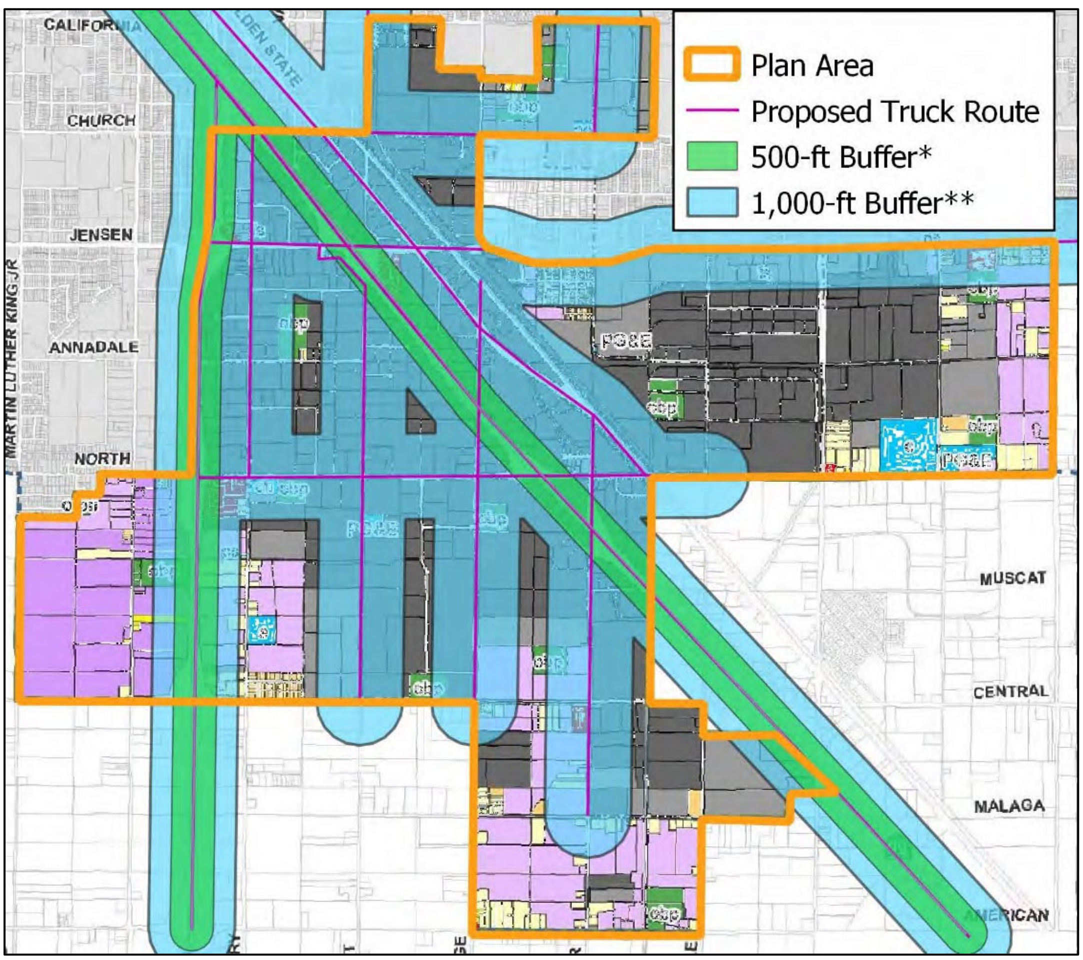
Page 4.3-29 of the Draft EIR describes how the proposed plan would not introduce new residential land uses or other sensitive receptors within 500 feet of SR 99 and SR 41, which is the setback distance CARB recommends near freeways and urban roads with more than 100,000 vehicles per day. As a result, the Draft EIR concluded that mobile-source exposure from development under the proposed plan would not generate a cancer risk greater than 20 in 1 million at the location of sensitive receptors. This is an unsubstantiated conclusion because

[13] South Coast Air Quality Management District, 2024. Working Group Meeting #5: Cumulative Impacts from Air Toxics for CEQA Projects. Available at: https://www.aqmd.gov/home/rules-compliance/ceqa/ceqa-policy-development-(new). March 20.

there are existing residential land uses adjacent to SR 41 that would be supported by future development (or redevelopment) under the proposed plan (see Figure 3-6 of the Draft EIR).

In addition, CARB's recommended 500-foot setback distance is not based on the SJVAPCD's health risk thresholds for TACs. As discussed above, the Fresno HIA for the Truck Reroute Study found that non-carcinogenic health risk impacts to sensitive receptors in the South-Central Fresno AB 617 Community extend up to about 1,000 feet from the freeways and major roadways. As shown in **Figure 1**, the 1,000-foot buffer distance around the proposed truck routes in the South-Central Fresno AB 617 Community would affect many more sensitive receptors in the Plan Area than the 500-foot setback around SR 99 and SR 41 that was evaluated in the Draft EIR.

Figure 1. Proposed Truck Routes with 1,000-foot Buffer in the Plan Area



Notes: Boundaries are approximate.
The base map and associated key (e.g., yellow indicates residential area) is derived from Figure 3-6 of the Draft EIR
* 500-foot buffer shown based on the Draft EIR Air Quality Analysis.
** 1,000-foot buffer shown based on the Truck Reroute Study.

There are also many published health risk assessments and models, such as the Bay Area Air Quality Management District's *Mobile Source Screening Map*,[14] that show mobile-source cancer risks exceeding 20 in a million at sensitive receptors located far beyond 500 feet from freeways and high-volume roadways. As discussed above, a health risk assessment prepared for the DNCP found that the existing cancer risk to sensitive receptors exceeded 100 in a million at distances up to about 5,000 feet from the freeways. The study recommended that any new residential development in areas with a cancer risk above 100 in a million incorporate Minimum Efficiency Reporting Value (MERV) 13 or higher ventilation systems to remove outdoor diesel PM from indoor air. The City of San Francisco has adopted a similar requirement for incorporating MERV 13 ventilation systems for new residential development within areas with elevated air pollution, including areas where the cancer risk is above 100 in a million.

The Draft EIR should be revised to evaluate health risks to new sensitive receptors exposed to existing air pollution based on the findings of previous studies in the South-Central Fresno AB 617 Community. Based on the findings of these studies, the Draft EIR should evaluate and mitigate potential air quality impacts to new sensitive receptors in the Plan Area.

Existing Sensitive Receptors Exposed to Toxic Air Contaminants in the AB 617 Community

According to page 4.3-29 of the Draft EIR, development anticipated under the proposed plan would generate an additional 72,241 trips per day. Presumably a high percentage of these trips would be trucks traveling along the freeways throughout the Plan Area, as well as other portions of the South-Central Fresno AB 617 Community, which extends beyond the Plan Area, where there are higher densities of residential receptors near the freeway (e.g., the DNCP area). The Draft EIR should be revised to evaluate the health risks for existing sensitive receptors in the South-Central Fresno AB 617 Community (and not just the Plan Area) that would be exposed to the cumulative mobile-source TAC emissions generated by the proposed plan.

Conclusion

In summary, the following flaws have been identified in the Draft EIR analysis used to support the significance determinations and evaluation of mitigation measures for air quality impacts related to development under the proposed plan:

- The Draft EIR did not properly estimate and disclose the severity of potential criteria air pollutant impacts to the public associated with construction.
- The Draft EIR made false statements regarding potential health risks from construction and mobile-source TAC emissions and the location of sensitive receptors within 500 feet of a freeway.

[14] https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling.

- The Draft EIR failed to evaluate potential health risks associated with passenger vehicles.
- The Draft EIR erroneously applied the SJVAPCD's project-level cancer risk threshold in a piecemeal fashion, allowing individual projects to generate a total cancer risk as high as 60 in a million (instead of 20 in million) at nearby sensitive receptors.
- The Draft EIR analysis did not incorporate critical findings from the Truck Reroute Study, Fresno HIA, and DNCP regarding the severity of existing air quality and health risk conditions in the Plan Area and South-Central Fresno AB 617 Community.
- The Draft EIR did not apply a project-level cancer risk threshold supported by substantial evidence to evaluate how development under the proposed plan could exacerbate the existing air quality conditions and cumulative health risks in the South-Central Fresno AB 617 Community and expose sensitive receptors to substantial air pollutant concentrations.
- The Draft EIR analysis did not properly evaluate the cumulative health risks for new sensitive receptors that would be exposed to TAC emissions in the Plan Area.
- The Draft EIR analysis did not evaluate the cumulative health risks to existing sensitive receptors in the South-Central Fresno AB 617 Community that would be exposed to mobile-source TAC emissions generated by the proposed plan.

Based on our review of the Draft EIR, a revised EIR should be prepared and recirculated for public review to properly evaluate and mitigate air quality impacts associated with development under the proposed plan.

Sincerely,

[redacted]

Patrick Sutton
Principal Environmental Engineer

ATTACHMENT A

Construction Scenario 1 Scale Adjustment Factors for CalEEMod

		Default CalEEMod Schedule			Modified CalEEMod Schedule			Scale Adjustment Factor
Phase Name	Days Per Week	Start Date	End Date	Work Days per Phase	Start Date	End Date	Work Days per Phase	
Demolition	5	1/1/2024	5/20/2024	100	1/1/2024	12/31/2024	260	**0.38**
Site Preparation	5	5/21/2024	8/13/2024	60	5/21/2024	12/31/2024	260	**0.23**
Grading	5	8/14/2024	3/19/2025	155	8/14/2024	12/31/2024	260	**0.60**
Building Construction	5	3/20/2025	2/27/2031	1,550	3/20/2025	12/31/2024	260	**5.96**
Paving	5	2/28/2031	8/1/2031	110	2/28/2031	12/31/2024	260	**0.42**
Architectural Coating	5	8/2/2031	1/3/2032	110	8/2/2031	12/31/2024	260	**0.42**

Construction Scenario 1 Modified Off-Road Equipment Activity for CalEEMod

Phase Name	Equipment Type	Default Number per Day	Default Hours Per Day	Default Total Hours of Use	Modified Number per Day	Modified Hours per Day*	Modified Total Hours of Use
Demolition	Rubber Tired Dozers	2	8	1,600	2	**3.08**	1,600
Demolition	Excavators	3	8	2,400	3	**3.08**	2,400
Demolition	Concrete/Industrial Saws	1	8	800	1	**3.08**	800
Site Preparation	Rubber Tired Dozers	3	8	1,440	3	**1.85**	1,440
Site Preparation	Tractors/Loaders/Backhoes	4	8	1,920	4	**1.85**	1,920
Grading	Graders	1	8	1,240	1	**4.77**	1,240
Grading	Excavators	2	8	2,480	2	**4.77**	2,480
Grading	Tractors/Loaders/Backhoes	2	8	2,480	2	**4.77**	2,480
Grading	Scrapers	2	8	2,480	2	**4.77**	2,480
Grading	Rubber Tired Dozers	1	8	1,240	1	**4.77**	1,240
Building Construction	Forklifts	3	8	37,200	3	**47.69**	37,200
Building Construction	Generator Sets	1	8	12,400	1	**47.69**	12,400
Building Construction	Cranes	1	7	10,850	1	**41.73**	10,850
Building Construction	Welders	1	8	12,400	1	**47.69**	12,400
Building Construction	Tractors/Loaders/Backhoes	3	7	32,550	3	**41.73**	32,550
Paving	Pavers	2	8	1,760	2	**3.38**	1,760
Paving	Paving Equipment	2	8	1,760	2	**3.38**	1,760
Paving	Rollers	2	8	1,760	2	**3.38**	1,760
Architectural Coating	Air Compressors	1	6	660	1	**2.54**	660

* The modified hours per day is based on the scale adjustment factor for the corresponding construction phase.

Construction Scenario 1 Modified On-Road Vehicle Activity for CalEEMod

Phase Name	Trip Type	Default Trips per Day	Default Total Trips	Modified Trips per day*	Modified Total Trips
Demolition	Worker	15.00	1,500	**5.77**	1,500
Site Preparation	Worker	17.50	1,050	**4.04**	1,050
Grading	Worker	20.00	3,100	**11.92**	3,100
Building Construction	Worker	1,267.02	1,963,881	**7,553.39**	1,963,881
Building Construction	Vendor	511.70	793,129	**3,050.50**	793,129
Paving	Worker	15.00	1,650	**6.35**	1,650
Architectural Coating	Worker	253.40	27,874	**107.21**	27,874

* The modified trips per day is based on the scale adjustment factor for the corresponding construction phase.

Fresno SCSP 2024 (25% Construction) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Fresno SCSP 2024 (25% Construction)
Construction Start Date	1/1/2024
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	25.4
Location	36.70464792900411, -119.7812713373362
County	Fresno
City	Fresno
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2482
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.25

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	23.0	Dwelling Unit	7.47	44,850	269,396	—	74.0	—

Supermarket	217	1000sqft	4.98	217,000	0.00	—	—	—
Office Park	145	1000sqft	3.33	145,000	0.00	—	—	—
Industrial Park	1,082	1000sqft	24.8	1,082,000	0.00	—	—	—
General Heavy Industry	1,563	1000sqft	35.9	1,563,000	0.00	—	—	—
General Office Building	100	1000sqft	2.30	100,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	112	106	208	462	0.54	5.52	65.2	70.7	5.14	18.0	23.1	—	120,417	120,417	4.94	9.73	320	123,761
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	107	101	218	404	0.54	5.52	65.2	70.7	5.14	18.0	23.1	—	115,121	115,121	4.07	9.74	8.31	118,133
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	76.7	72.5	151	290	0.39	3.93	45.8	49.8	3.66	12.6	16.3	—	83,051	83,051	3.64	6.93	98.5	85,307
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	14.0	13.2	27.6	52.9	0.07	0.72	8.37	9.08	0.67	2.31	2.97	—	13,750	13,750	0.60	1.15	16.3	14,124

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	112	106	208	462	0.54	5.52	65.2	70.7	5.14	18.0	23.1	—	120,417	120,417	4.94	9.73	320	123,761
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	107	101	218	404	0.54	5.52	65.2	70.7	5.14	18.0	23.1	—	115,121	115,121	4.07	9.74	8.31	118,133
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	76.7	72.5	151	290	0.39	3.93	45.8	49.8	3.66	12.6	16.3	—	83,051	83,051	3.64	6.93	98.5	85,307
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	14.0	13.2	27.6	52.9	0.07	0.72	8.37	9.08	0.67	2.31	2.97	—	13,750	13,750	0.60	1.15	16.3	14,124

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	1.01	9.58	8.37	0.01	0.41	—	0.41	0.38	—	0.38	—	1,319	1,319	0.05	0.01	—	1,323
Demolition	—	—	—	—	—	—	0.32	0.32	—	0.05	0.05	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	1.01	9.58	8.37	0.01	0.41	—	0.41	0.38	—	0.38	—	1,319	1,319	0.05	0.01	—	1,323
Demolition	—	—	—	—	—	—	0.32	0.32	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.85	0.72	6.83	5.96	0.01	0.29	—	0.29	0.27	—	0.27	—	939	939	0.04	0.01	—	943
Demolition	—	—	—	—	—	—	0.23	0.23	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.25	1.09	< 0.005	0.05	—	0.05	0.05	—	0.05	—	156	156	0.01	< 0.005	—	156
Demolition	—	—	—	—	—	—	0.04	0.04	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.01	0.23	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	35.7	35.7	< 0.005	< 0.005	0.14	36.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.32	0.08	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	264	264	0.01	0.04	0.64	277

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.19	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.7	31.7	< 0.005	< 0.005	< 0.005	32.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.34	0.08	< 0.005	< 0.005	0.07	0.07	< 0.005	0.02	0.02	—	264	264	0.01	0.04	0.02	277
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.4	23.4	< 0.005	< 0.005	0.04	23.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.24	0.05	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.02	—	188	188	< 0.005	0.03	0.19	197
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.87	3.87	< 0.005	< 0.005	0.01	3.94
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	31.2	31.2	< 0.005	< 0.005	0.03	32.7

3.3. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	0.84	8.31	7.61	0.01	0.37	—	0.37	0.34	—	0.34	—	1,225	1,225	0.05	0.01	—	1,229
Dust From Material Movement	—	—	—	—	—	—	4.61	4.61	—	2.35	2.35	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.00	0.84	8.31	7.61	0.01	0.37	—	0.37	0.34	—	0.34	—	1,225	1,225	0.05	0.01	—	1,229
Dust From Material Movement	—	—	—	—	—	—	4.61	4.61	—	2.35	2.35	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.71	0.60	5.92	5.42	0.01	0.26	—	0.26	0.24	—	0.24	—	872	872	0.04	0.01	—	875
Dust From Material Movement	—	—	—	—	—	—	3.29	3.29	—	1.67	1.67	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	1.08	0.99	< 0.005	0.05	—	0.05	0.04	—	0.04	—	144	144	0.01	< 0.005	—	145
Dust From Material Movement	—	—	—	—	—	—	0.60	0.60	—	0.31	0.31	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.16	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	25.0	25.0	< 0.005	< 0.005	0.10	25.5

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.47	0.24	12.3	2.94	0.07	0.19	2.65	2.84	0.19	0.73	0.91	—	10,196	10,196	0.22	1.62	24.5	10,708
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.13	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	22.2	22.2	< 0.005	< 0.005	< 0.005	22.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.46	0.23	13.2	3.00	0.07	0.19	2.65	2.84	0.19	0.73	0.91	—	10,202	10,202	0.22	1.62	0.64	10,691
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.4	16.4	< 0.005	< 0.005	0.03	16.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.33	0.17	9.20	2.11	0.05	0.13	1.86	2.00	0.13	0.51	0.65	—	7,265	7,265	0.16	1.15	7.51	7,619
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.71	2.71	< 0.005	< 0.005	0.01	2.76
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.03	1.68	0.39	0.01	0.02	0.34	0.36	0.02	0.09	0.12	—	1,203	1,203	0.03	0.19	1.24	1,261

3.5. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.50	2.10	20.4	18.0	0.04	0.86	—	0.86	0.79	—	0.79	—	3,934	3,934	0.16	0.03	—	3,948

Dust From Material Movemen	—	—	—	—	—	—	5.49	5.49	—	2.18	2.18	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.50	2.10	20.4	18.0	0.04	0.86	—	0.86	0.79	—	0.79	—	3,934	3,934	0.16	0.03	—	3,948
Dust From Material Movemen	—	—	—	—	—	—	5.49	5.49	—	2.18	2.18	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.78	1.49	14.6	12.8	0.03	0.62	—	0.62	0.57	—	0.57	—	2,802	2,802	0.11	0.02	—	2,812
Dust From Material Movemen	—	—	—	—	—	—	3.91	3.91	—	1.55	1.55	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.27	2.66	2.34	< 0.005	0.11	—	0.11	0.10	—	0.10	—	464	464	0.02	< 0.005	—	466
Dust From Material Movemen	—	—	—	—	—	—	0.71	0.71	—	0.28	0.28	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.03	0.48	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	73.8	73.8	< 0.005	< 0.005	0.30	75.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.39	0.00	0.00	0.06	0.06	0.00	0.02	0.02	—	65.5	65.5	< 0.005	< 0.005	0.01	66.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.02	0.28	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48.3	48.3	< 0.005	< 0.005	0.09	49.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.00	8.00	< 0.005	< 0.005	0.02	8.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	8.57	7.17	66.9	78.2	0.14	2.97	—	2.97	2.73	—	2.73	—	14,293	14,293	0.58	0.12	—	14,342
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	8.57	7.17	66.9	78.2	0.14	2.97	—	2.97	2.73	—	2.73	—	14,293	14,293	0.58	0.12	—	14,342
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	6.10	5.11	47.6	55.7	0.10	2.11	—	2.11	1.94	—	1.94	—	10,181	10,181	0.41	0.08	—	10,216
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	0.93	8.70	10.2	0.02	0.39	—	0.39	0.35	—	0.35	—	1,686	1,686	0.07	0.01	—	1,691
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	36.5	34.5	18.8	307	0.00	0.00	41.1	41.1	0.00	9.63	9.63	—	46,791	46,791	2.78	1.95	187	47,629
Vendor	3.56	2.15	66.8	30.0	0.27	0.54	10.2	10.8	0.54	2.83	3.37	—	40,862	40,862	1.01	5.92	105	42,755
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	32.3	30.0	23.8	248	0.00	0.00	41.1	41.1	0.00	9.63	9.63	—	41,511	41,511	2.00	1.95	4.86	42,147

Vendor	3.36	1.95	71.2	31.1	0.27	0.54	10.2	10.8	0.54	2.83	3.37	—	40,934	40,934	0.94	5.92	2.71	42,724
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	23.4	21.9	14.7	179	0.00	0.00	28.8	28.8	0.00	6.74	6.74	—	30,631	30,631	2.10	1.39	57.7	31,155
Vendor	2.44	1.44	49.4	21.6	0.19	0.38	7.19	7.57	0.38	1.99	2.37	—	29,128	29,128	0.72	4.22	32.1	30,435
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.27	3.99	2.68	32.7	0.00	0.00	5.25	5.25	0.00	1.23	1.23	—	5,071	5,071	0.35	0.23	9.56	5,158
Vendor	0.45	0.26	9.01	3.94	0.03	0.07	1.31	1.38	0.07	0.36	0.43	—	4,823	4,823	0.12	0.70	5.31	5,039
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.36	3.30	4.24	0.01	0.16	—	0.16	0.15	—	0.15	—	639	639	0.03	0.01	—	641
Paving	0.18	0.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.36	3.30	4.24	0.01	0.16	—	0.16	0.15	—	0.15	—	639	639	0.03	0.01	—	641
Paving	0.18	0.18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.26	2.35	3.02	< 0.005	0.12	—	0.12	0.11	—	0.11	—	455	455	0.02	< 0.005	—	456
Paving	0.13	0.13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.43	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	75.3	75.3	< 0.005	< 0.005	—	75.6
Paving	0.02	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.26	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	39.3	39.3	< 0.005	< 0.005	0.16	40.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.21	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	34.9	34.9	< 0.005	< 0.005	< 0.005	35.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.15	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	25.8	25.8	< 0.005	< 0.005	0.05	26.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.26	4.26	< 0.005	< 0.005	0.01	4.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.38	0.49	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.5	56.5	< 0.005	< 0.005	—	56.7
Architectural Coatings	56.5	56.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.38	0.49	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.5	56.5	< 0.005	< 0.005	—	56.7
Architectural Coatings	56.5	56.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.05	0.04	0.27	0.35	< 0.005	0.01	—	0.01	0.01	—	0.01	—	40.3	40.3	< 0.005	< 0.005	—	40.4
Architectural Coatings	40.2	40.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.67	6.67	< 0.005	< 0.005	—	6.69
Architectural Coatings	7.34	7.34	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.49	0.27	4.35	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	664	664	0.04	0.03	2.65	676
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.46	0.43	0.34	3.52	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	589	589	0.03	0.03	0.07	598
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.33	0.31	0.21	2.55	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	435	435	0.03	0.02	0.82	442
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.46	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	72.0	72.0	< 0.005	< 0.005	0.14	73.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/1/2024	12/27/2024	5.00	260	—
Site Preparation	Site Preparation	1/1/2024	12/27/2024	5.00	260	—
Grading	Grading	1/1/2024	12/27/2024	5.00	260	—
Building Construction	Building Construction	1/1/2024	12/27/2024	5.00	260	—
Paving	Paving	1/1/2024	12/27/2024	5.00	260	—
Architectural Coating	Architectural Coating	1/1/2024	12/27/2024	5.00	260	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	3.08	367	0.40
Demolition	Excavators	Diesel	Average	3.00	3.08	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	3.08	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	1.85	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	1.85	84.0	0.37
Grading	Graders	Diesel	Average	1.00	4.77	148	0.41
Grading	Excavators	Diesel	Average	2.00	4.77	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	4.77	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	4.77	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	4.77	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	47.7	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	47.7	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	41.7	367	0.29
Building Construction	Welders	Diesel	Average	1.00	47.7	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	41.7	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	3.38	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	3.38	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	3.38	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	2.54	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	5.77	7.70	LDA,LDT1,LDT2
Demolition	Vendor	—	4.00	HHDT,MHDT
Demolition	Hauling	3.70	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	4.04	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	4.00	HHDT,MHDT
Site Preparation	Hauling	143	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	11.9	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	4.00	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	7,553	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	3,051	4.00	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	6.35	7.70	LDA,LDT1,LDT2
Paving	Vendor	—	4.00	HHDT,MHDT

Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	107	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	4.00	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	90,821	30,274	4,660,500	1,553,500	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	83,709	—
Site Preparation	—	297,384	90.2	0.00	—
Grading	—	—	465	0.00	—
Paving	0.00	0.00	0.00	0.00	18.1

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	0.25	0%
Supermarket	1.25	100%
Office Park	0.83	100%
Industrial Park	6.21	100%
General Heavy Industry	8.97	100%
General Office Building	0.57	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	24.3	annual days of extreme heat
Extreme Precipitation	2.25	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score

Temperature and Extreme Heat	2	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	82.5
AQ-PM	97.7
AQ-DPM	98.7
Drinking Water	84.4
Lead Risk Housing	96.5
Pesticides	42.9
Toxic Releases	92.2
Traffic	60.4
Effect Indicators	—
CleanUp Sites	98.2
Groundwater	91.2
Haz Waste Facilities/Generators	96.3
Impaired Water Bodies	0.00
Solid Waste	80.0
Sensitive Population	—
Asthma	97.2
Cardio-vascular	92.2
Low Birth Weights	95.6
Socioeconomic Factor Indicators	—

Education	93.2
Housing	91.0
Linguistic	79.4
Poverty	98.9
Unemployment	93.8

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	2.75888618
Employed	4.709354549
Median HI	5.273963814
Education	—
Bachelor's or higher	9.547029385
High school enrollment	6.108045682
Preschool enrollment	17.00243809
Transportation	—
Auto Access	5.915565251
Active commuting	28.28179135
Social	—
2-parent households	31.82343128
Voting	0.936738098
Neighborhood	—
Alcohol availability	36.78942641
Park access	21.85294495
Retail density	40.81868343

Supermarket access	11.86962659
Tree canopy	46.63159245
Housing	—
Homeownership	31.38714231
Housing habitability	12.42140382
Low-inc homeowner severe housing cost burden	21.429488
Low-inc renter severe housing cost burden	32.77300141
Uncrowded housing	14.69267291
Health Outcomes	—
Insured adults	10.18863082
Arthritis	14.6
Asthma ER Admissions	2.3
High Blood Pressure	5.0
Cancer (excluding skin)	77.2
Asthma	1.3
Coronary Heart Disease	5.2
Chronic Obstructive Pulmonary Disease	2.6
Diagnosed Diabetes	1.8
Life Expectancy at Birth	11.9
Cognitively Disabled	7.6
Physically Disabled	8.5
Heart Attack ER Admissions	3.7
Mental Health Not Good	2.2
Chronic Kidney Disease	2.7
Obesity	1.5
Pedestrian Injuries	97.2
Physical Health Not Good	2.0

Stroke	1.8
Health Risk Behaviors	—
Binge Drinking	84.3
Current Smoker	4.4
No Leisure Time for Physical Activity	1.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	7.3
Elderly	70.0
English Speaking	21.6
Foreign-born	58.6
Outdoor Workers	2.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	50.0
Traffic Density	62.8
Traffic Access	0.0
Other Indices	—
Hardship	96.8
Other Decision Support	—
2016 Voting	1.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	100
Healthy Places Index Score for Project Location (b)	0.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes

Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	Central Fresno

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Modified to evenly distrubute all the construction phases throughout one calendar year (260 work days).
Construction: Off-Road Equipment	Scaled the default hours/day for each phase based on the corresponding adjustment factor to normalize the default schedule for each phase over a year (260 work days).
Construction: Trips and VMT	Scaled default worker and vendor trips for each phase based on the corresponding adjustment factor to normalize the default schedule for each phase over a year (260 work days).
Construction: Paving	Consistent with DEIR, resiential paved areas assumed to equal default and other land uses are 25% of total lot acreage.

Construction Scenario 2 Scale Adjustment Factors for CalEEMod

		Default CalEEMod Schedule			Modified CalEEMod Schedule			Scale Adjustment Factor
Phase Name	Days Per Week	Start Date	End Date	Work Days per Phase	Start Date	End Date	Work Days per Phase	
Demolition	5	1/1/2024	7/14/2025	400	1/1/2024	12/31/2039	4175	**0.10**
Site Preparation	5	7/15/2025	6/16/2026	240	5/21/2024	12/31/2039	4175	**0.06**
Grading	5	6/17/2026	11/1/2028	620	8/14/2024	12/31/2039	4175	**0.15**
Building Construction	5	11/2/2028	8/8/2052	6,200	3/20/2025	12/31/2039	4175	**1.49**
Paving	5	8/9/2052	4/17/2054	440	2/28/2031	12/31/2039	4175	**0.11**
Architectural Coating	5	4/18/2054	12/25/2055	440	8/2/2031	12/31/2039	4175	**0.11**

Construction Scenario 2 Modified Off-Road Equipment Activity for CalEEMod

Phase Name	Equipment Type	Default Number per Day	Default Hours Per Day	Default Total Hours of Use	Modified Number per Day	Modified Hours per Day*	Modified Total Hours of Use
Demolition	Rubber Tired Dozers	2	8	6,400	2	**0.77**	6,400
Demolition	Excavators	3	8	9,600	3	**0.77**	9,600
Demolition	Concrete/Industrial Saws	1	8	3,200	1	**0.77**	3,200
Site Preparation	Rubber Tired Dozers	3	8	5,760	3	**0.46**	5,760
Site Preparation	Tractors/Loaders/Backhoes	4	8	7,680	4	**0.46**	7,680
Grading	Graders	1	8	4,960	1	**1.19**	4,960
Grading	Excavators	2	8	9,920	2	**1.19**	9,920
Grading	Tractors/Loaders/Backhoes	2	8	9,920	2	**1.19**	9,920
Grading	Scrapers	2	8	9,920	2	**1.19**	9,920
Grading	Rubber Tired Dozers	1	8	4,960	1	**1.19**	4,960
Building Construction	Forklifts	3	8	148,800	3	**11.88**	148,800
Building Construction	Generator Sets	1	8	49,600	1	**11.88**	49,600
Building Construction	Cranes	1	7	43,400	1	**10.40**	43,400
Building Construction	Welders	1	8	49,600	1	**11.88**	49,600
Building Construction	Tractors/Loaders/Backhoes	3	7	130,200	3	**10.40**	130,200
Paving	Pavers	2	8	7,040	2	**0.84**	7,040
Paving	Paving Equipment	2	8	7,040	2	**0.84**	7,040
Paving	Rollers	2	8	7,040	2	**0.84**	7,040
Architectural Coating	Air Compressors	1	6	2,640	1	**0.63**	2,640

* The modified hours per day is based on the scale adjustment factor for the corresponding construction phase.

Construction Scenario 2 Modified On-Road Vehicle Activity for CalEEMod

Phase Name	Trip Type	Default Trips per Day	Default Total Trips	Modified Trips per day*	Modified Total Trips
Demolition	Worker	15.00	6,000	**1.44**	6,000
Site Preparation	Worker	17.50	4,200	**1.01**	4,200
Grading	Worker	20.00	12,400	**2.97**	12,400
Building Construction	Worker	5,056.76	31,351,912	**7,509.44**	31,351,912
Building Construction	Vendor	2,030.61	12,589,812	**3,015.52**	12,589,812
Paving	Worker	15.00	6,600	**1.58**	6,600
Architectural Coating	Worker	1,011.35	444,995	**106.59**	444,995

* The modified trips per day is based on the scale adjustment factor for the corresponding construction phase.

Fresno SCSP 2024-2040 (100% Construction) Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Fresno SCSP 2024-2040 (100% Construction)
Construction Start Date	1/1/2024
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	25.4
Location	36.70464792900411, -119.7812713373362
County	Fresno
City	Fresno
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2482
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.25

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Single Family Housing	91.0	Dwelling Unit	29.5	177,450	1,065,870	—	291	—

Supermarket	867	1000sqft	19.9	867,000	0.00	—	—	—
Office Park	579	1000sqft	13.3	579,000	0.00	—	—	—
Industrial Park	4,327	1000sqft	99.3	4,327,000	0.00	—	—	—
General Heavy Industry	6,250	1000sqft	143	6,250,000	0.00	—	—	—
General Office Building	100	1000sqft	2.30	100,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	57.7	53.7	115	369	0.33	1.77	54.9	56.6	1.68	13.8	15.5	—	95,570	95,570	4.08	8.27	298	98,435
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	53.3	49.0	125	311	0.33	1.77	54.9	56.6	1.68	13.8	15.5	—	90,314	90,314	3.22	8.27	7.75	92,868
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	38.6	35.6	85.8	225	0.24	1.27	38.7	40.0	1.20	9.77	11.0	—	65,733	65,733	3.04	5.93	92.4	67,667
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.04	6.50	15.7	41.1	0.04	0.23	7.06	7.30	0.22	1.78	2.00	—	10,883	10,883	0.50	0.98	15.3	11,203

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	57.7	53.7	115	369	0.33	1.77	54.9	56.6	1.68	13.8	15.5	—	95,570	95,570	4.08	8.27	298	98,435
2025	55.0	51.3	109	341	0.33	1.61	54.9	56.5	1.53	13.8	15.4	—	93,788	93,788	2.62	8.26	282	96,596
2026	52.4	48.8	104	317	0.33	1.50	54.9	56.4	1.42	13.8	15.3	—	92,024	92,024	2.55	8.26	254	94,802
2027	49.3	47.0	98.8	297	0.33	1.41	54.9	56.3	1.35	13.8	15.2	—	90,193	90,193	2.36	7.81	227	92,805
2028	47.5	44.3	94.4	279	0.33	1.34	54.9	56.2	1.28	13.8	15.1	—	88,344	88,344	2.36	7.81	203	90,932
2029	45.7	42.3	89.8	264	0.33	1.29	54.9	56.1	1.23	13.8	15.1	—	86,487	86,487	2.20	7.52	180	88,964
2030	44.3	40.9	87.3	248	0.33	1.25	54.9	56.1	1.20	13.8	15.0	—	84,628	84,628	1.93	6.16	160	86,672
2031	41.4	39.4	83.6	236	0.33	1.22	54.9	56.1	0.90	13.8	14.7	—	82,807	82,807	1.76	5.88	141	84,745
2032	39.7	37.9	81.0	224	0.33	1.16	54.9	56.0	0.84	13.8	14.7	—	81,070	81,070	1.76	5.87	122	82,984
2033	38.5	37.0	77.5	214	0.33	0.85	54.9	55.7	0.79	13.8	14.6	—	79,469	79,469	1.76	5.60	106	81,287
2034	37.3	35.8	75.7	206	0.33	0.82	54.9	55.7	0.76	13.8	14.6	—	77,985	77,985	1.74	5.60	91.0	79,788
2035	36.7	35.4	73.8	198	0.33	0.78	54.9	55.6	0.73	13.8	14.6	—	76,620	76,620	1.58	5.32	77.6	78,321
2036	36.1	34.7	72.3	191	0.33	0.73	54.9	55.6	0.70	13.8	14.5	—	75,394	75,394	1.58	5.32	65.5	77,083
2037	35.1	33.6	69.7	185	0.33	0.71	54.9	55.6	0.68	13.8	14.5	—	74,306	74,306	1.58	5.32	55.0	75,985
2038	34.2	31.5	68.4	181	0.33	0.69	54.9	55.5	0.66	13.8	14.5	—	73,325	73,325	1.58	5.03	45.8	74,911
2039	33.5	30.8	67.1	177	0.33	0.67	54.9	55.5	0.64	13.8	14.5	—	72,473	72,473	1.51	5.03	38.0	74,049
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	53.3	49.0	125	311	0.33	1.77	54.9	56.6	1.68	13.8	15.5	—	90,314	90,314	3.22	8.27	7.75	92,868
2025	51.0	47.0	117	289	0.33	1.61	54.9	56.5	1.53	13.8	15.4	—	88,663	88,663	3.05	8.26	7.32	91,207
2026	47.7	45.2	112	269	0.33	1.50	54.9	56.4	1.42	13.8	15.3	—	87,024	87,024	2.88	8.26	6.58	89,563

2027	45.9	42.3	106	252	0.33	1.41	54.9	56.3	1.35	13.8	15.2	—	85,311	85,311	2.87	7.97	5.89	87,766
2028	44.3	41.1	102	237	0.33	1.34	54.9	56.2	1.28	13.8	15.1	—	83,566	83,566	2.70	7.97	5.27	86,015
2029	42.9	39.3	97.0	225	0.33	1.29	54.9	56.1	1.23	13.8	15.1	—	81,809	81,809	2.70	7.69	4.68	84,173
2030	40.2	37.9	93.0	213	0.33	1.25	54.9	56.1	1.20	13.8	15.0	—	80,043	80,043	2.27	7.52	4.14	82,346
2031	39.0	36.9	89.1	201	0.33	1.22	54.9	56.1	0.90	13.8	14.7	—	78,305	78,305	2.10	7.24	3.65	80,519
2032	37.7	35.7	86.6	191	0.33	1.16	54.9	56.0	0.84	13.8	14.7	—	76,645	76,645	2.10	5.87	3.17	78,448
2033	36.5	34.9	83.1	183	0.33	0.85	54.9	55.7	0.79	13.8	14.6	—	75,111	75,111	2.10	5.60	2.75	76,834
2034	35.6	33.9	81.3	175	0.33	0.82	54.9	55.7	0.76	13.8	14.6	—	73,686	73,686	1.91	5.60	2.36	75,404
2035	35.0	33.3	79.4	169	0.33	0.78	54.9	55.6	0.73	13.8	14.6	—	72,375	72,375	1.91	5.32	2.01	74,009
2036	34.6	33.1	76.1	163	0.33	0.73	54.9	55.6	0.70	13.8	14.5	—	71,195	71,195	1.91	5.32	1.70	72,829
2037	33.9	31.1	74.8	158	0.33	0.71	54.9	55.6	0.68	13.8	14.5	—	70,149	70,149	1.68	5.32	1.43	71,777
2038	33.3	30.6	73.5	153	0.33	0.69	54.9	55.5	0.66	13.8	14.5	—	69,206	69,206	1.68	5.03	1.19	70,749
2039	32.6	29.9	72.3	150	0.33	0.67	54.9	55.5	0.64	13.8	14.5	—	68,385	68,385	1.68	5.03	0.98	69,929
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	38.6	35.6	85.8	225	0.24	1.27	38.7	40.0	1.20	9.77	11.0	—	65,733	65,733	3.04	5.93	92.4	67,667
2025	36.6	34.0	80.8	208	0.24	1.15	38.6	39.8	1.09	9.74	10.8	—	64,349	64,349	2.06	5.90	87.1	66,245
2026	35.3	32.7	76.9	194	0.24	1.07	38.6	39.7	1.02	9.74	10.8	—	63,153	63,153	1.94	5.90	78.2	65,037
2027	33.1	31.5	73.6	182	0.24	1.01	38.6	39.6	0.96	9.74	10.7	—	61,906	61,906	1.81	5.70	70.0	63,719
2028	32.1	29.7	70.4	172	0.24	0.96	38.7	39.7	0.92	9.77	10.7	—	60,805	60,805	1.81	5.59	62.8	62,579
2029	30.8	28.3	66.9	162	0.24	0.92	38.6	39.5	0.88	9.74	10.6	—	59,364	59,364	1.69	5.37	55.6	61,064
2030	29.9	27.5	64.2	153	0.24	0.89	38.6	39.5	0.86	9.74	10.6	—	58,085	58,085	1.50	5.33	49.3	59,759
2031	28.0	26.6	62.2	145	0.24	0.87	38.6	39.5	0.64	9.74	10.4	—	56,827	56,827	1.38	4.20	43.2	58,157
2032	27.2	25.8	59.6	139	0.24	0.83	38.7	39.5	0.60	9.77	10.4	—	55,778	55,778	1.38	4.20	37.9	57,103
2033	26.3	25.2	57.8	132	0.24	0.61	38.6	39.2	0.57	9.74	10.3	—	54,516	54,516	1.38	4.00	32.8	55,775
2034	25.5	24.4	56.5	127	0.24	0.59	38.6	39.2	0.54	9.74	10.3	—	53,488	53,488	1.25	4.00	28.1	54,739
2035	25.2	24.0	54.4	122	0.24	0.56	38.6	39.2	0.52	9.74	10.3	—	52,540	52,540	1.25	3.80	23.9	53,727
2036	25.0	23.9	53.3	118	0.24	0.52	38.7	39.2	0.50	9.77	10.3	—	51,830	51,830	1.25	3.81	20.3	53,016

2037	24.1	22.3	52.0	114	0.24	0.51	38.6	39.1	0.48	9.74	10.2	—	50,933	50,933	1.25	3.80	16.9	52,113
2038	23.9	21.9	51.1	111	0.24	0.49	38.6	39.1	0.47	9.74	10.2	—	50,251	50,251	1.08	3.60	14.1	51,364
2039	23.2	21.2	49.3	109	0.24	0.48	38.5	39.0	0.46	9.71	10.2	—	49,523	49,523	1.08	3.59	11.7	50,630
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	7.04	6.50	15.7	41.1	0.04	0.23	7.06	7.30	0.22	1.78	2.00	—	10,883	10,883	0.50	0.98	15.3	11,203
2025	6.69	6.21	14.7	38.0	0.04	0.21	7.04	7.25	0.20	1.78	1.98	—	10,654	10,654	0.34	0.98	14.4	10,968
2026	6.44	5.97	14.0	35.4	0.04	0.20	7.04	7.24	0.19	1.78	1.96	—	10,456	10,456	0.32	0.98	12.9	10,768
2027	6.04	5.74	13.4	33.2	0.04	0.18	7.04	7.23	0.18	1.78	1.95	—	10,249	10,249	0.30	0.94	11.6	10,549
2028	5.85	5.42	12.8	31.4	0.04	0.18	7.06	7.24	0.17	1.78	1.95	—	10,067	10,067	0.30	0.93	10.4	10,361
2029	5.63	5.16	12.2	29.5	0.04	0.17	7.04	7.21	0.16	1.78	1.94	—	9,828	9,828	0.28	0.89	9.21	10,110
2030	5.46	5.02	11.7	27.9	0.04	0.16	7.04	7.21	0.16	1.78	1.93	—	9,617	9,617	0.25	0.88	8.16	9,894
2031	5.12	4.85	11.4	26.5	0.04	0.16	7.04	7.20	0.12	1.78	1.90	—	9,408	9,408	0.23	0.70	7.16	9,628
2032	4.96	4.70	10.9	25.3	0.04	0.15	7.06	7.22	0.11	1.78	1.89	—	9,235	9,235	0.23	0.70	6.27	9,454
2033	4.79	4.60	10.5	24.1	0.04	0.11	7.04	7.16	0.10	1.78	1.88	—	9,026	9,026	0.23	0.66	5.43	9,234
2034	4.65	4.46	10.3	23.2	0.04	0.11	7.04	7.15	0.10	1.78	1.88	—	8,856	8,856	0.21	0.66	4.65	9,063
2035	4.60	4.39	9.92	22.3	0.04	0.10	7.04	7.15	0.09	1.78	1.87	—	8,699	8,699	0.21	0.63	3.96	8,895
2036	4.56	4.37	9.73	21.5	0.04	0.10	7.06	7.16	0.09	1.78	1.87	—	8,581	8,581	0.21	0.63	3.37	8,777
2037	4.40	4.07	9.50	20.8	0.04	0.09	7.04	7.14	0.09	1.78	1.87	—	8,433	8,433	0.21	0.63	2.81	8,628
2038	4.36	4.00	9.33	20.2	0.04	0.09	7.04	7.13	0.09	1.78	1.86	—	8,320	8,320	0.18	0.60	2.34	8,504
2039	4.23	3.87	9.01	19.8	0.04	0.09	7.03	7.11	0.08	1.77	1.86	—	8,199	8,199	0.18	0.59	1.93	8,382

3. Construction Emissions Details

3.1. Demolition (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.25	2.40	2.09	< 0.005	0.10	—	0.10	0.09	—	0.09	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.25	2.40	2.09	< 0.005	0.10	—	0.10	0.09	—	0.09	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.72	1.50	< 0.005	0.07	—	0.07	0.07	—	0.07	—	236	236	0.01	< 0.005	—	237
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.31	0.27	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.1	39.1	< 0.005	< 0.005	—	39.2
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.92	8.92	< 0.005	< 0.005	0.04	9.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	65.8	65.8	< 0.005	0.01	0.16	69.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.91	7.91	< 0.005	< 0.005	< 0.005	8.03
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	65.8	65.8	< 0.005	0.01	< 0.005	69.0
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.87	5.87	< 0.005	< 0.005	0.01	5.97
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	47.1	47.1	< 0.005	0.01	0.05	49.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.97	0.97	< 0.005	< 0.005	< 0.005	0.99
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.80	7.80	< 0.005	< 0.005	0.01	8.18

3.3. Demolition (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.28	0.23	2.14	1.92	< 0.005	0.09	—	0.09	0.08	—	0.08	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.28	0.23	2.14	1.92	< 0.005	0.09	—	0.09	0.08	—	0.08	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.16	1.53	1.37	< 0.005	0.06	—	0.06	0.06	—	0.06	—	235	235	0.01	< 0.005	—	236
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.03	0.28	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.0	39.0	< 0.005	< 0.005	—	39.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.73	8.73	< 0.005	< 0.005	0.03	8.88
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	64.5	64.5	< 0.005	0.01	0.16	67.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.75	7.75	< 0.005	< 0.005	< 0.005	7.87
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	64.5	64.5	< 0.005	0.01	< 0.005	67.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.73	5.73	< 0.005	< 0.005	0.01	5.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	46.1	46.1	< 0.005	0.01	0.05	48.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.95	0.95	< 0.005	< 0.005	< 0.005	0.96
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.63	7.63	< 0.005	< 0.005	0.01	8.00

3.5. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	1.99	1.83	< 0.005	0.08	—	0.08	0.07	—	0.07	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	1.99	1.83	< 0.005	0.08	—	0.08	0.07	—	0.07	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.42	1.31	< 0.005	0.06	—	0.06	0.05	—	0.05	—	236	236	0.01	< 0.005	—	236
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.26	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.0	39.0	< 0.005	< 0.005	—	39.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.55	8.55	< 0.005	< 0.005	0.03	8.70
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	63.2	63.2	< 0.005	0.01	0.15	66.3

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.59	7.59	< 0.005	< 0.005	< 0.005	7.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	63.2	63.2	< 0.005	0.01	< 0.005	66.2
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.61	5.61	< 0.005	< 0.005	0.01	5.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	45.1	45.1	< 0.005	0.01	0.05	47.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.47	7.47	< 0.005	< 0.005	0.01	7.84

3.7. Demolition (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.92	1.79	< 0.005	0.08	—	0.08	0.07	—	0.07	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.92	1.79	< 0.005	0.08	—	0.08	0.07	—	0.07	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.37	1.28	< 0.005	0.05	—	0.05	0.05	—	0.05	—	236	236	0.01	< 0.005	—	236
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.25	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.0	39.0	< 0.005	< 0.005	—	39.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.37	8.37	< 0.005	< 0.005	0.03	8.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	61.7	61.7	< 0.005	0.01	0.14	64.7

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.43	7.43	< 0.005	< 0.005	< 0.005	7.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	61.8	61.8	< 0.005	0.01	< 0.005	64.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.50	5.50	< 0.005	< 0.005	0.01	5.59
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	44.1	44.1	< 0.005	0.01	0.04	46.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.91	0.91	< 0.005	< 0.005	< 0.005	0.93
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.30	7.30	< 0.005	< 0.005	0.01	7.65

3.9. Demolition (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.88	1.80	< 0.005	0.07	—	0.07	0.07	—	0.07	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.88	1.80	< 0.005	0.07	—	0.07	0.07	—	0.07	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.35	1.29	< 0.005	0.05	—	0.05	0.05	—	0.05	—	236	236	0.01	< 0.005	—	237
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.25	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.1	39.1	< 0.005	< 0.005	—	39.3
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.21	8.21	< 0.005	< 0.005	0.02	8.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.1	60.1	< 0.005	0.01	0.13	63.1

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.29	7.29	< 0.005	< 0.005	< 0.005	7.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	60.2	60.2	< 0.005	0.01	< 0.005	63.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.41	5.41	< 0.005	< 0.005	0.01	5.49
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	43.1	43.1	< 0.005	0.01	0.04	45.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.90	0.90	< 0.005	< 0.005	< 0.005	0.91
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.13	7.13	< 0.005	< 0.005	0.01	7.48

3.11. Demolition (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.79	1.78	< 0.005	0.07	—	0.07	0.07	—	0.07	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.79	1.78	< 0.005	0.07	—	0.07	0.07	—	0.07	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.28	1.27	< 0.005	0.05	—	0.05	0.05	—	0.05	—	236	236	0.01	< 0.005	—	236
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.23	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.0	39.0	< 0.005	< 0.005	—	39.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.06	8.06	< 0.005	< 0.005	0.02	8.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	58.6	58.6	< 0.005	0.01	0.11	61.4

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.16	7.16	< 0.005	< 0.005	< 0.005	7.28
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	58.6	58.6	< 0.005	0.01	< 0.005	61.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.29	5.29	< 0.005	< 0.005	0.01	5.38
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	41.8	41.8	< 0.005	0.01	0.04	43.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.88	0.88	< 0.005	< 0.005	< 0.005	0.89
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.93	6.93	< 0.005	< 0.005	0.01	7.26

3.13. Demolition (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.74	1.80	< 0.005	0.07	—	0.07	0.06	—	0.06	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.74	1.80	< 0.005	0.07	—	0.07	0.06	—	0.06	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.25	1.28	< 0.005	0.05	—	0.05	0.05	—	0.05	—	236	236	0.01	< 0.005	—	236
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.23	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.0	39.0	< 0.005	< 0.005	—	39.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.91	7.91	< 0.005	< 0.005	0.02	7.97
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.0	57.0	< 0.005	0.01	0.10	59.9

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.03	7.03	< 0.005	< 0.005	< 0.005	7.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	57.0	57.0	< 0.005	0.01	< 0.005	59.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.20	5.20	< 0.005	< 0.005	0.01	5.28
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	40.7	40.7	< 0.005	0.01	0.03	42.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.86	0.86	< 0.005	< 0.005	< 0.005	0.87
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.74	6.74	< 0.005	< 0.005	0.01	7.07

3.15. Demolition (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.20	1.69	1.76	< 0.005	0.07	—	0.07	0.06	—	0.06	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.20	1.69	1.76	< 0.005	0.07	—	0.07	0.06	—	0.06	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.21	1.26	< 0.005	0.05	—	0.05	0.04	—	0.04	—	236	236	0.01	< 0.005	—	236
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.22	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.0	39.0	< 0.005	< 0.005	—	39.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.78	7.78	< 0.005	< 0.005	0.02	7.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	55.5	55.5	< 0.005	0.01	0.09	58.2

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.92	6.92	< 0.005	< 0.005	< 0.005	7.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	55.5	55.5	< 0.005	0.01	< 0.005	58.2
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.12	5.12	< 0.005	< 0.005	0.01	5.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	39.7	39.7	< 0.005	0.01	0.03	41.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.85	0.85	< 0.005	< 0.005	< 0.005	0.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.56	6.56	< 0.005	< 0.005	< 0.005	6.88

3.17. Demolition (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.56	1.62	< 0.005	0.06	—	0.06	0.05	—	0.05	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.56	1.62	< 0.005	0.06	—	0.06	0.05	—	0.05	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.12	1.16	< 0.005	0.04	—	0.04	0.04	—	0.04	—	236	236	0.01	< 0.005	—	237
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.20	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.1	39.1	< 0.005	< 0.005	—	39.2
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.66	7.66	< 0.005	< 0.005	0.01	7.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	54.1	54.1	< 0.005	0.01	0.08	56.7

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.81	6.81	< 0.005	< 0.005	< 0.005	6.84
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	54.1	54.1	< 0.005	0.01	< 0.005	56.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.05	5.05	< 0.005	< 0.005	< 0.005	5.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	38.7	38.7	< 0.005	0.01	0.03	40.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.84	0.84	< 0.005	< 0.005	< 0.005	0.84
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.42	6.42	< 0.005	< 0.005	< 0.005	6.72

3.19. Demolition (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.49	1.53	< 0.005	0.06	—	0.06	0.05	—	0.05	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.49	1.53	< 0.005	0.06	—	0.06	0.05	—	0.05	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.07	1.10	< 0.005	0.04	—	0.04	0.04	—	0.04	—	236	236	0.01	< 0.005	—	236
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.19	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.0	39.0	< 0.005	< 0.005	—	39.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.55	7.55	< 0.005	< 0.005	0.01	7.60
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	52.8	52.8	< 0.005	0.01	0.07	55.4

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.72	6.72	< 0.005	< 0.005	< 0.005	6.75
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	52.9	52.9	< 0.005	0.01	< 0.005	55.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.97	4.97	< 0.005	< 0.005	< 0.005	4.99
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.7	37.7	< 0.005	0.01	0.02	39.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.82	0.82	< 0.005	< 0.005	< 0.005	0.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.25	6.25	< 0.005	< 0.005	< 0.005	6.55

3.21. Demolition (2034) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.45	1.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.45	1.51	< 0.005	0.05	—	0.05	0.05	—	0.05	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.04	1.08	< 0.005	0.04	—	0.04	0.03	—	0.03	—	236	236	0.01	< 0.005	—	236
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.19	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.0	39.0	< 0.005	< 0.005	—	39.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.46	7.46	< 0.005	< 0.005	0.01	7.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	51.7	51.7	< 0.005	0.01	0.06	54.3

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.63	6.63	< 0.005	< 0.005	< 0.005	6.66
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	51.8	51.8	< 0.005	0.01	< 0.005	54.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.90	4.90	< 0.005	< 0.005	< 0.005	4.93
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	37.0	37.0	< 0.005	0.01	0.02	38.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.81	0.81	< 0.005	< 0.005	< 0.005	0.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.12	6.12	< 0.005	< 0.005	< 0.005	6.42

3.23. Demolition (2035) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.37	1.44	< 0.005	0.05	—	0.05	0.04	—	0.04	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.37	1.44	< 0.005	0.05	—	0.05	0.04	—	0.04	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	0.98	1.03	< 0.005	0.03	—	0.03	0.03	—	0.03	—	236	236	0.01	< 0.005	—	236
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.18	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.0	39.0	< 0.005	< 0.005	—	39.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.37	7.37	< 0.005	< 0.005	0.01	7.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	50.8	50.8	< 0.005	0.01	0.06	53.2

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.55	6.55	< 0.005	< 0.005	< 0.005	6.59
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	50.8	50.8	< 0.005	0.01	< 0.005	53.2
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.85	4.85	< 0.005	< 0.005	< 0.005	4.87
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.05	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	36.3	36.3	< 0.005	0.01	0.02	38.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.81
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.01	6.01	< 0.005	< 0.005	< 0.005	6.29

3.25. Demolition (2036) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.29	1.36	< 0.005	0.04	—	0.04	0.04	—	0.04	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.29	1.36	< 0.005	0.04	—	0.04	0.04	—	0.04	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	0.92	0.98	< 0.005	0.03	—	0.03	0.03	—	0.03	—	236	236	0.01	< 0.005	—	237
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.17	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.1	39.1	< 0.005	< 0.005	—	39.2
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.29	7.29	< 0.005	< 0.005	0.01	7.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	49.9	49.9	< 0.005	0.01	0.05	52.4

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.48	6.48	< 0.005	< 0.005	< 0.005	6.52
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	50.0	50.0	< 0.005	0.01	< 0.005	52.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.81	4.81	< 0.005	< 0.005	< 0.005	4.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.8	35.8	< 0.005	0.01	0.01	37.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	< 0.005	0.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.92	5.92	< 0.005	< 0.005	< 0.005	6.21

3.27. Demolition (2037) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.29	1.38	< 0.005	0.04	—	0.04	0.04	—	0.04	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.29	1.38	< 0.005	0.04	—	0.04	0.04	—	0.04	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	0.92	0.98	< 0.005	0.03	—	0.03	0.03	—	0.03	—	236	236	0.01	< 0.005	—	236
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.17	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.0	39.0	< 0.005	< 0.005	—	39.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.22	7.22	< 0.005	< 0.005	0.01	7.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	49.2	49.2	< 0.005	0.01	0.04	51.7

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.42	6.42	< 0.005	< 0.005	< 0.005	6.45
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	49.3	49.3	< 0.005	0.01	< 0.005	51.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.75	4.75	< 0.005	< 0.005	< 0.005	4.78
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	35.2	35.2	< 0.005	0.01	0.01	36.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	< 0.005	0.79
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.82	5.82	< 0.005	< 0.005	< 0.005	6.11

3.29. Demolition (2038) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.19	1.27	< 0.005	0.04	—	0.04	0.04	—	0.04	—	330	330	0.01	< 0.005	—	331
Demolitio n	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.19	1.27	< 0.005	0.04	—	0.04	0.04	—	0.04	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.85	0.91	< 0.005	0.03	—	0.03	0.03	—	0.03	—	236	236	0.01	< 0.005	—	236
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.17	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	39.0	39.0	< 0.005	< 0.005	—	39.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.16	7.16	< 0.005	< 0.005	0.01	7.20
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	48.6	48.6	< 0.005	0.01	0.04	50.9

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.37	6.37	< 0.005	< 0.005	< 0.005	6.40
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	48.7	48.7	< 0.005	0.01	< 0.005	50.9
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.71	4.71	< 0.005	< 0.005	< 0.005	4.73
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.7	34.7	< 0.005	0.01	0.01	36.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.78	0.78	< 0.005	< 0.005	< 0.005	0.78
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.75	5.75	< 0.005	< 0.005	< 0.005	6.02

3.31. Demolition (2039) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.16	1.25	< 0.005	0.04	—	0.04	0.03	—	0.03	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.16	1.25	< 0.005	0.04	—	0.04	0.03	—	0.03	—	330	330	0.01	< 0.005	—	331
Demolition	—	—	—	—	—	—	0.08	0.08	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.83	0.89	< 0.005	0.03	—	0.03	0.02	—	0.02	—	235	235	0.01	< 0.005	—	236
Demolition	—	—	—	—	—	—	0.06	0.06	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.9	38.9	< 0.005	< 0.005	—	39.0
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.11	7.11	< 0.005	< 0.005	0.01	7.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	48.1	48.1	< 0.005	0.01	0.03	50.4

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.32	6.32	< 0.005	< 0.005	< 0.005	6.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.06	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	48.1	48.1	< 0.005	0.01	< 0.005	50.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.66	4.66	< 0.005	< 0.005	< 0.005	4.68
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.3	34.3	< 0.005	0.01	0.01	35.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.77	0.77	< 0.005	< 0.005	< 0.005	0.78
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.68	5.68	< 0.005	< 0.005	< 0.005	5.94

3.33. Site Preparation (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	2.07	1.89	< 0.005	0.09	—	0.09	0.08	—	0.08	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	2.07	1.89	< 0.005	0.09	—	0.09	0.08	—	0.08	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.48	1.36	< 0.005	0.07	—	0.07	0.06	—	0.06	—	218	218	0.01	< 0.005	—	219
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.27	0.25	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.1	36.1	< 0.005	< 0.005	—	36.2
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.26	6.26	< 0.005	< 0.005	0.03	6.37

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.12	0.06	3.07	0.73	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,538	2,538	0.05	0.40	6.10	2,665
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.55	5.55	< 0.005	< 0.005	< 0.005	5.64
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.11	0.06	3.28	0.75	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,540	2,540	0.05	0.40	0.16	2,661
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.12	4.12	< 0.005	< 0.005	0.01	4.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.04	2.30	0.53	0.01	0.03	0.47	0.50	0.03	0.13	0.16	—	1,818	1,818	0.04	0.29	1.88	1,907
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.68	0.68	< 0.005	< 0.005	< 0.005	0.69
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.42	0.10	< 0.005	0.01	0.09	0.09	0.01	0.02	0.03	—	301	301	0.01	0.05	0.31	316

3.35. Site Preparation (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.82	1.74	< 0.005	0.08	—	0.08	0.07	—	0.07	—	304	304	0.01	< 0.005	—	306

Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.82	1.74	< 0.005	0.08	—	0.08	0.07	—	0.07	—	304	304	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.14	1.30	1.24	< 0.005	0.06	—	0.06	0.05	—	0.05	—	217	217	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.24	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.0	36.0	< 0.005	< 0.005	—	36.1
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.12	6.12	< 0.005	< 0.005	0.02	6.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	0.04	2.98	0.73	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,489	2,489	0.05	0.39	6.04	2,611
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.43	5.43	< 0.005	< 0.005	< 0.005	5.52
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	0.04	3.18	0.74	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,490	2,490	0.05	0.39	0.16	2,607
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.02	4.02	< 0.005	< 0.005	0.01	4.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.03	2.23	0.53	0.01	0.03	0.47	0.50	0.03	0.13	0.16	—	1,778	1,778	0.04	0.28	1.86	1,863
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.67	0.67	< 0.005	< 0.005	< 0.005	0.68
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.41	0.10	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	294	294	0.01	0.05	0.31	309

3.37. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.22	0.18	1.68	1.66	< 0.005	0.07	—	0.07	0.07	—	0.07	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.68	1.66	< 0.005	0.07	—	0.07	0.07	—	0.07	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.20	1.18	< 0.005	0.05	—	0.05	0.05	—	0.05	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.22	0.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.0	36.0	< 0.005	< 0.005	—	36.1
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.00	6.00	< 0.005	< 0.005	0.02	6.10
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	0.04	2.90	0.71	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,438	2,438	0.05	0.39	5.70	2,560
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.32	5.32	< 0.005	< 0.005	< 0.005	5.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	0.04	3.09	0.73	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,439	2,439	0.05	0.39	0.15	2,556
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.94	3.94	< 0.005	< 0.005	0.01	4.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.03	2.16	0.51	0.01	0.03	0.47	0.50	0.03	0.13	0.16	—	1,742	1,742	0.04	0.28	1.76	1,827
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.65	0.65	< 0.005	< 0.005	< 0.005	0.66
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.39	0.09	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	288	288	0.01	0.05	0.29	302

3.39. Site Preparation (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.61	1.63	< 0.005	0.07	—	0.07	0.06	—	0.06	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.18	1.61	1.63	< 0.005	0.07	—	0.07	0.06	—	0.06	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.15	1.16	< 0.005	0.05	—	0.05	0.04	—	0.04	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.0	36.0	< 0.005	< 0.005	—	36.1

Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.87	5.87	< 0.005	< 0.005	0.02	5.96
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	0.04	2.81	0.70	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,381	2,381	0.04	0.37	5.25	2,498
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.21	5.21	< 0.005	< 0.005	< 0.005	5.30
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	0.04	3.00	0.71	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,383	2,383	0.04	0.37	0.14	2,494
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.86	3.86	< 0.005	< 0.005	0.01	3.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.03	2.10	0.50	0.01	0.03	0.47	0.50	0.03	0.13	0.16	—	1,701	1,701	0.03	0.27	1.62	1,783
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.64	0.64	< 0.005	< 0.005	< 0.005	0.65
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.38	0.09	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	282	282	< 0.005	0.04	0.27	295

3.41. Site Preparation (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.58	1.63	< 0.005	0.07	—	0.07	0.06	—	0.06	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.58	1.63	< 0.005	0.07	—	0.07	0.06	—	0.06	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.13	1.17	< 0.005	0.05	—	0.05	0.04	—	0.04	—	218	218	0.01	< 0.005	—	219
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.1	36.1	< 0.005	< 0.005	—	36.3
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.76	5.76	< 0.005	< 0.005	0.02	5.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	0.04	2.73	0.70	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,320	2,320	0.04	0.37	4.82	2,436
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.11	5.11	< 0.005	< 0.005	< 0.005	5.20
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	0.04	2.92	0.71	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,322	2,322	0.04	0.37	0.12	2,433
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.79	3.79	< 0.005	< 0.005	0.01	3.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.03	2.04	0.50	0.01	0.03	0.47	0.50	0.03	0.13	0.16	—	1,662	1,662	0.03	0.27	1.49	1,743
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.63	0.63	< 0.005	< 0.005	< 0.005	0.64
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.37	0.09	< 0.005	0.01	0.09	0.09	0.01	0.02	0.03	—	275	275	< 0.005	0.04	0.25	289

3.43. Site Preparation (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.49	1.61	< 0.005	0.06	—	0.06	0.06	—	0.06	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.49	1.61	< 0.005	0.06	—	0.06	0.06	—	0.06	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	1.07	1.15	< 0.005	0.04	—	0.04	0.04	—	0.04	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.19	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.0	36.0	< 0.005	< 0.005	—	36.1
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.65	5.65	< 0.005	< 0.005	0.02	5.74
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	0.04	2.66	0.68	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,259	2,259	0.04	0.35	4.40	2,370
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.02	5.02	< 0.005	< 0.005	< 0.005	5.10
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.10	0.04	2.83	0.70	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,261	2,261	0.04	0.35	0.11	2,367
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.71	3.71	< 0.005	< 0.005	< 0.005	3.77
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.03	1.99	0.49	0.01	0.03	0.47	0.50	0.03	0.13	0.16	—	1,614	1,614	0.03	0.25	1.36	1,692
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.01	0.01	0.36	0.09	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	267	267	< 0.005	0.04	0.23	280

3.45. Site Preparation (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.45	1.63	< 0.005	0.06	—	0.06	0.06	—	0.06	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.45	1.63	< 0.005	0.06	—	0.06	0.06	—	0.06	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.04	1.17	< 0.005	0.04	—	0.04	0.04	—	0.04	—	218	218	0.01	< 0.005	—	218

Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.19	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.0	36.0	< 0.005	< 0.005	—	36.1
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.55	5.55	< 0.005	< 0.005	0.01	5.59
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.04	2.59	0.67	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,199	2,199	0.04	0.35	3.99	2,310
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.93	4.93	< 0.005	< 0.005	< 0.005	5.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.04	2.77	0.68	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,201	2,201	0.04	0.35	0.10	2,308
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.65	3.65	< 0.005	< 0.005	< 0.005	3.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.03	1.94	0.48	0.01	0.03	0.47	0.50	0.03	0.13	0.16	—	1,571	1,571	0.03	0.25	1.23	1,649

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.60	0.60	< 0.005	< 0.005	< 0.005	0.61
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.35	0.09	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	260	260	< 0.005	0.04	0.20	273

3.47. Site Preparation (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.16	1.40	1.60	< 0.005	0.06	—	0.06	0.06	—	0.06	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.16	1.40	1.60	< 0.005	0.06	—	0.06	0.06	—	0.06	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.14	0.12	1.00	1.15	< 0.005	0.04	—	0.04	0.04	—	0.04	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.18	0.21	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.0	36.0	< 0.005	< 0.005	—	36.1
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.46	5.46	< 0.005	< 0.005	0.01	5.49
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.04	2.54	0.67	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,141	2,141	0.04	0.34	3.61	2,247
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.85	4.85	< 0.005	< 0.005	< 0.005	4.93
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.04	2.70	0.68	0.02	0.05	0.66	0.71	0.05	0.18	0.23	—	2,143	2,143	0.04	0.34	0.09	2,245
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.59	3.59	< 0.005	< 0.005	< 0.005	3.61

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.03	1.89	0.48	0.01	0.03	0.47	0.50	0.03	0.13	0.16	—	1,530	1,530	0.03	0.24	1.11	1,604
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.60
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.35	0.09	< 0.005	0.01	0.08	0.09	0.01	0.02	0.03	—	253	253	< 0.005	0.04	0.18	266

3.49. Site Preparation (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.16	1.28	1.48	< 0.005	0.05	—	0.05	0.05	—	0.05	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.16	1.28	1.48	< 0.005	0.05	—	0.05	0.05	—	0.05	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.92	1.06	< 0.005	0.04	—	0.04	0.04	—	0.04	—	218	218	0.01	< 0.005	—	219
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.17	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.1	36.1	< 0.005	< 0.005	—	36.2
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.37	5.37	< 0.005	< 0.005	0.01	5.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.04	2.47	0.65	0.02	0.05	0.66	0.71	0.03	0.18	0.21	—	2,087	2,087	0.04	0.32	3.23	2,187
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.78	4.78	< 0.005	< 0.005	< 0.005	4.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.08	0.04	2.65	0.66	0.02	0.05	0.66	0.71	0.03	0.18	0.21	—	2,088	2,088	0.04	0.32	0.08	2,186
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.54	3.54	< 0.005	< 0.005	< 0.005	3.56
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.03	1.85	0.47	0.01	0.03	0.47	0.50	0.02	0.13	0.15	—	1,495	1,495	0.03	0.23	1.00	1,566
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.59	0.59	< 0.005	< 0.005	< 0.005	0.59
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.34	0.09	< 0.005	0.01	0.09	0.09	< 0.005	0.02	0.03	—	248	248	< 0.005	0.04	0.17	259

3.51. Site Preparation (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.22	1.40	< 0.005	0.05	—	0.05	0.05	—	0.05	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.22	1.40	< 0.005	0.05	—	0.05	0.05	—	0.05	—	305	305	0.01	< 0.005	—	306

Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.87	1.00	< 0.005	0.04	—	0.04	0.03	—	0.03	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.0	36.0	< 0.005	< 0.005	—	36.1
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.30	5.30	< 0.005	< 0.005	0.01	5.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.04	2.42	0.64	0.02	0.05	0.66	0.71	0.03	0.18	0.21	—	2,038	2,038	0.04	0.32	2.85	2,138
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.71	4.71	< 0.005	< 0.005	< 0.005	4.73
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.04	2.60	0.65	0.02	0.05	0.66	0.71	0.03	0.18	0.21	—	2,040	2,040	0.04	0.32	0.07	2,137
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.48	3.48	< 0.005	< 0.005	< 0.005	3.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.03	1.81	0.46	0.01	0.03	0.47	0.50	0.02	0.13	0.15	—	1,456	1,456	0.03	0.23	0.88	1,527
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.58	0.58	< 0.005	< 0.005	< 0.005	0.58
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.33	0.08	< 0.005	0.01	0.08	0.09	< 0.005	0.02	0.03	—	241	241	< 0.005	0.04	0.15	253

3.53. Site Preparation (2034) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.18	0.15	1.18	1.39	< 0.005	0.05	—	0.05	0.04	—	0.04	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.18	0.15	1.18	1.39	< 0.005	0.05	—	0.05	0.04	—	0.04	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.85	0.99	< 0.005	0.03	—	0.03	0.03	—	0.03	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.0	36.0	< 0.005	< 0.005	—	36.1
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.23	5.23	< 0.005	< 0.005	0.01	5.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.04	2.38	0.64	0.02	0.05	0.66	0.71	0.03	0.18	0.21	—	1,996	1,996	0.02	0.32	2.49	2,095

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.65	4.65	< 0.005	< 0.005	< 0.005	4.67
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.04	2.55	0.65	0.02	0.05	0.66	0.71	0.03	0.18	0.21	—	1,997	1,997	0.02	0.32	0.06	2,094
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.44	3.44	< 0.005	< 0.005	< 0.005	3.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.03	1.78	0.46	0.01	0.03	0.47	0.50	0.02	0.13	0.15	—	1,426	1,426	0.02	0.23	0.77	1,496
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.57	0.57	< 0.005	< 0.005	< 0.005	0.57
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.33	0.08	< 0.005	0.01	0.08	0.09	< 0.005	0.02	0.03	—	236	236	< 0.005	0.04	0.13	248

3.55. Site Preparation (2035) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.10	1.32	< 0.005	0.04	—	0.04	0.04	—	0.04	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.10	1.32	< 0.005	0.04	—	0.04	0.04	—	0.04	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.79	0.94	< 0.005	0.03	—	0.03	0.03	—	0.03	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.14	0.17	< 0.005	0.01	—	0.01	0.01	—	0.01	—	36.0	36.0	< 0.005	< 0.005	—	36.1
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.17	5.17	< 0.005	< 0.005	0.01	5.20

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.04	2.35	0.62	0.02	0.05	0.66	0.71	0.03	0.18	0.21	—	1,959	1,959	0.02	0.31	2.15	2,053
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.60	4.60	< 0.005	< 0.005	< 0.005	4.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.04	2.50	0.64	0.02	0.05	0.66	0.71	0.03	0.18	0.21	—	1,960	1,960	0.02	0.31	0.06	2,053
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.40	3.40	< 0.005	< 0.005	< 0.005	3.42
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.03	1.75	0.45	0.01	0.03	0.47	0.50	0.02	0.13	0.15	—	1,400	1,400	0.02	0.22	0.66	1,466
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.56	0.56	< 0.005	< 0.005	< 0.005	0.57
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.32	0.08	< 0.005	0.01	0.08	0.09	< 0.005	0.02	0.03	—	232	232	< 0.005	0.04	0.11	243

3.57. Site Preparation (2036) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.04	1.25	< 0.005	0.04	—	0.04	0.04	—	0.04	—	305	305	0.01	< 0.005	—	306

Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.04	1.25	< 0.005	0.04	—	0.04	0.04	—	0.04	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.10	0.74	0.89	< 0.005	0.03	—	0.03	0.03	—	0.03	—	218	218	0.01	< 0.005	—	219
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.14	0.16	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	36.1	36.1	< 0.005	< 0.005	—	36.2
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.11	5.11	< 0.005	< 0.005	0.01	5.14
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.04	2.32	0.62	0.02	0.03	0.66	0.69	0.03	0.18	0.21	—	1,927	1,927	0.02	0.31	1.85	2,021
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.55	4.55	< 0.005	< 0.005	< 0.005	4.57
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.04	2.46	0.64	0.02	0.03	0.66	0.69	0.03	0.18	0.21	—	1,928	1,928	0.02	0.31	0.05	2,020
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.37	3.37	< 0.005	< 0.005	< 0.005	3.39
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.05	0.03	1.73	0.45	0.01	0.02	0.47	0.49	0.02	0.13	0.15	—	1,381	1,381	0.02	0.22	0.57	1,447
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.56	0.56	< 0.005	< 0.005	< 0.005	0.56
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.31	0.08	< 0.005	< 0.005	0.09	0.09	< 0.005	0.02	0.03	—	229	229	< 0.005	0.04	0.09	240

3.59. Site Preparation (2037) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.16	0.13	1.04	1.26	< 0.005	0.04	—	0.04	0.04	—	0.04	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	0.13	1.04	1.26	< 0.005	0.04	—	0.04	0.04	—	0.04	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.10	0.74	0.90	< 0.005	0.03	—	0.03	0.03	—	0.03	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.14	0.16	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	36.0	36.0	< 0.005	< 0.005	—	36.1
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.07	5.07	< 0.005	< 0.005	< 0.005	5.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.04	2.28	0.61	0.02	0.03	0.66	0.69	0.03	0.18	0.21	—	1,900	1,900	0.02	0.31	1.58	1,993
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.50	4.50	< 0.005	< 0.005	< 0.005	4.53
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.04	2.43	0.62	0.02	0.03	0.66	0.69	0.03	0.18	0.21	—	1,901	1,901	0.02	0.31	0.04	1,993
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.33	3.33	< 0.005	< 0.005	< 0.005	3.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.05	0.03	1.70	0.44	0.01	0.02	0.47	0.49	0.02	0.13	0.15	—	1,357	1,357	0.02	0.22	0.49	1,423
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.31	0.08	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.03	—	225	225	< 0.005	0.04	0.08	236

3.61. Site Preparation (2038) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.95	1.17	< 0.005	0.04	—	0.04	0.03	—	0.03	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.95	1.17	< 0.005	0.04	—	0.04	0.03	—	0.03	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.68	0.83	< 0.005	0.03	—	0.03	0.02	—	0.02	—	218	218	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.12	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	36.0	36.0	< 0.005	< 0.005	—	36.1

Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.02	5.02	< 0.005	< 0.005	< 0.005	5.05
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.04	2.25	0.61	0.02	0.03	0.66	0.69	0.03	0.18	0.21	—	1,876	1,876	0.02	0.29	1.36	1,965
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.46	4.46	< 0.005	< 0.005	< 0.005	4.49
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.04	2.41	0.62	0.02	0.03	0.66	0.69	0.03	0.18	0.21	—	1,878	1,878	0.02	0.29	0.04	1,965
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.30	3.30	< 0.005	< 0.005	< 0.005	3.32
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.05	0.03	1.68	0.44	0.01	0.02	0.47	0.49	0.02	0.13	0.15	—	1,341	1,341	0.02	0.21	0.42	1,403
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.55	0.55	< 0.005	< 0.005	< 0.005	0.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.31	0.08	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.03	—	222	222	< 0.005	0.03	0.07	232

3.63. Site Preparation (2039) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.92	1.15	< 0.005	0.03	—	0.03	0.03	—	0.03	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	0.92	1.15	< 0.005	0.03	—	0.03	0.03	—	0.03	—	305	305	0.01	< 0.005	—	306
Dust From Material Movement	—	—	—	—	—	—	1.15	1.15	—	0.58	0.58	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.66	0.82	< 0.005	0.02	—	0.02	0.02	—	0.02	—	217	217	0.01	< 0.005	—	218
Dust From Material Movement	—	—	—	—	—	—	0.82	0.82	—	0.42	0.42	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.12	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	35.9	35.9	< 0.005	< 0.005	—	36.0
Dust From Material Movement	—	—	—	—	—	—	0.15	0.15	—	0.08	0.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.98	4.98	< 0.005	< 0.005	< 0.005	5.01
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.04	2.23	0.60	0.02	0.03	0.66	0.69	0.03	0.18	0.21	—	1,856	1,856	0.02	0.29	1.16	1,945
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.43	4.43	< 0.005	< 0.005	< 0.005	4.45
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.06	0.04	2.38	0.61	0.02	0.03	0.66	0.69	0.03	0.18	0.21	—	1,858	1,858	0.02	0.29	0.03	1,945
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.27	3.27	< 0.005	< 0.005	< 0.005	3.29
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.05	0.03	1.65	0.43	0.01	0.02	0.46	0.49	0.02	0.13	0.15	—	1,323	1,323	0.02	0.21	0.36	1,385
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.54	0.54	< 0.005	< 0.005	< 0.005	0.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	0.01	0.30	0.08	< 0.005	< 0.005	0.08	0.09	< 0.005	0.02	0.03	—	219	219	< 0.005	0.03	0.06	229

3.65. Grading (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	5.10	4.49	0.01	0.22	—	0.22	0.20	—	0.20	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	0.52	5.10	4.49	0.01	0.22	—	0.22	0.20	—	0.20	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.37	3.65	3.21	0.01	0.15	—	0.15	0.14	—	0.14	—	703	703	0.03	0.01	—	705
Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.67	0.59	< 0.005	0.03	—	0.03	0.03	—	0.03	—	116	116	< 0.005	< 0.005	—	117
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	0.07	18.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.3	16.3	< 0.005	< 0.005	< 0.005	16.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.02	12.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.00	2.00	< 0.005	< 0.005	< 0.005	2.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.67. Grading (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	0.48	4.41	4.21	0.01	0.18	—	0.18	0.17	—	0.17	—	982	982	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.57	0.48	4.41	4.21	0.01	0.18	—	0.18	0.17	—	0.17	—	982	982	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.34	3.15	3.01	0.01	0.13	—	0.13	0.12	—	0.12	—	701	701	0.03	0.01	—	704

Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.58	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.11	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.0	18.0	< 0.005	< 0.005	0.07	18.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.0	16.0	< 0.005	< 0.005	< 0.005	16.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	0.02	12.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.96	1.96	< 0.005	< 0.005	< 0.005	1.99
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.69. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.54	0.45	4.05	4.10	0.01	0.17	—	0.17	0.15	—	0.15	—	982	982	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.54	0.45	4.05	4.10	0.01	0.17	—	0.17	0.15	—	0.15	—	982	982	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.38	0.32	2.89	2.93	0.01	0.12	—	0.12	0.11	—	0.11	—	701	701	0.03	0.01	—	704
Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.53	0.53	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.6	17.6	< 0.005	< 0.005	0.06	17.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.7	15.7	< 0.005	< 0.005	< 0.005	15.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.6	11.6	< 0.005	< 0.005	0.02	11.8

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.92	1.92	< 0.005	< 0.005	< 0.005	1.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.71. Grading (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.44	3.81	4.06	0.01	0.16	—	0.16	0.14	—	0.14	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.44	3.81	4.06	0.01	0.16	—	0.16	0.14	—	0.14	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.37	0.31	2.72	2.90	0.01	0.11	—	0.11	0.10	—	0.10	—	701	701	0.03	0.01	—	703
Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.50	0.53	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.3	17.3	< 0.005	< 0.005	0.06	17.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.3	15.3	< 0.005	< 0.005	< 0.005	15.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.3	11.3	< 0.005	< 0.005	0.02	11.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.88	1.88	< 0.005	< 0.005	< 0.005	1.91
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.73. Grading (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	0.43	3.62	4.04	0.01	0.15	—	0.15	0.13	—	0.13	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.51	0.43	3.62	4.04	0.01	0.15	—	0.15	0.13	—	0.13	—	981	981	0.04	0.01	—	985

Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.36	0.31	2.59	2.89	0.01	0.10	—	0.10	0.10	—	0.10	—	703	703	0.03	0.01	—	705
Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.47	0.53	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	117
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.09	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.9	16.9	< 0.005	< 0.005	0.05	17.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	< 0.005	15.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	0.02	11.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.85	1.85	< 0.005	< 0.005	< 0.005	1.88
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.75. Grading (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.49	0.42	3.38	4.00	0.01	0.14	—	0.14	0.13	—	0.13	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.49	0.42	3.38	4.00	0.01	0.14	—	0.14	0.13	—	0.13	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.30	2.42	2.85	0.01	0.10	—	0.10	0.09	—	0.09	—	701	701	0.03	0.01	—	703
Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.44	0.52	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.6	16.6	< 0.005	< 0.005	0.04	16.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.8	14.8	< 0.005	< 0.005	< 0.005	15.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.9	10.9	< 0.005	< 0.005	0.01	11.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.81	1.81	< 0.005	< 0.005	< 0.005	1.84
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.77. Grading (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	0.40	3.22	3.99	0.01	0.13	—	0.13	0.12	—	0.12	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.48	0.40	3.22	3.99	0.01	0.13	—	0.13	0.12	—	0.12	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.29	2.30	2.85	0.01	0.09	—	0.09	0.09	—	0.09	—	701	701	0.03	0.01	—	703
Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.42	0.52	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.3	16.3	< 0.005	< 0.005	0.04	16.4

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.5	14.5	< 0.005	< 0.005	< 0.005	14.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.7	10.7	< 0.005	< 0.005	0.01	10.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.78	1.78	< 0.005	< 0.005	< 0.005	1.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.79. Grading (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	0.40	3.07	3.96	0.01	0.13	—	0.13	0.12	—	0.12	—	981	981	0.04	0.01	—	985

Dust From Material Movemen	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.47	0.40	3.07	3.96	0.01	0.13	—	0.13	0.12	—	0.12	—	981	981	0.04	0.01	—	985
Dust From Material Movemen	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.28	2.19	2.83	0.01	0.09	—	0.09	0.08	—	0.08	—	701	701	0.03	0.01	—	703
Dust From Material Movemen	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.40	0.52	< 0.005	0.02	—	0.02	0.02	—	0.02	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movemen	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.1	16.1	< 0.005	< 0.005	0.03	16.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	< 0.005	14.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.6	10.6	< 0.005	< 0.005	0.01	10.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.75	1.75	< 0.005	< 0.005	< 0.005	1.76
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.81. Grading (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.45	0.38	2.89	3.83	0.01	0.12	—	0.12	0.11	—	0.11	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.45	0.38	2.89	3.83	0.01	0.12	—	0.12	0.11	—	0.11	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.27	2.07	2.75	0.01	0.08	—	0.08	0.08	—	0.08	—	703	703	0.03	0.01	—	705
Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.38	0.50	< 0.005	0.02	—	0.02	0.01	—	0.01	—	116	116	< 0.005	< 0.005	—	117
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.8	15.8	< 0.005	< 0.005	0.03	15.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.0	14.0	< 0.005	< 0.005	< 0.005	14.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.4	10.4	< 0.005	< 0.005	0.01	10.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.72	1.72	< 0.005	< 0.005	< 0.005	1.73
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.83. Grading (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	0.37	2.76	3.75	0.01	0.11	—	0.11	0.10	—	0.10	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	0.37	2.76	3.75	0.01	0.11	—	0.11	0.10	—	0.10	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.27	1.97	2.68	0.01	0.08	—	0.08	0.07	—	0.07	—	701	701	0.03	0.01	—	703
Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.36	0.49	< 0.005	0.01	—	0.01	0.01	—	0.01	—	116	116	< 0.005	< 0.005	—	116

Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.6	15.6	< 0.005	< 0.005	0.03	15.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	13.9	13.9	< 0.005	< 0.005	< 0.005	13.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.2	10.2	< 0.005	< 0.005	0.01	10.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.70	1.70	< 0.005	< 0.005	< 0.005	1.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.85. Grading (2034) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.36	2.64	3.73	0.01	0.10	—	0.10	0.09	—	0.09	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.43	0.36	2.64	3.73	0.01	0.10	—	0.10	0.09	—	0.09	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	1.89	2.66	0.01	0.07	—	0.07	0.07	—	0.07	—	701	701	0.03	0.01	—	703
Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.34	0.49	< 0.005	0.01	—	0.01	0.01	—	0.01	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	0.02	15.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	13.7	13.7	< 0.005	< 0.005	< 0.005	13.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.1	10.1	< 0.005	< 0.005	0.01	10.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.67	1.67	< 0.005	< 0.005	< 0.005	1.68
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.87. Grading (2035) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	0.35	2.50	3.66	0.01	0.09	—	0.09	0.09	—	0.09	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.42	0.35	2.50	3.66	0.01	0.09	—	0.09	0.09	—	0.09	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.25	1.79	2.61	0.01	0.07	—	0.07	0.06	—	0.06	—	701	701	0.03	0.01	—	703
Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.33	0.48	< 0.005	0.01	—	0.01	0.01	—	0.01	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.2	15.2	< 0.005	< 0.005	0.02	15.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	13.5	13.5	< 0.005	< 0.005	< 0.005	13.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.00	10.00	< 0.005	< 0.005	0.01	10.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.65	1.65	< 0.005	< 0.005	< 0.005	1.66
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.89. Grading (2036) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.34	2.36	3.59	0.01	0.09	—	0.09	0.08	—	0.08	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.34	2.36	3.59	0.01	0.09	—	0.09	0.08	—	0.08	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	0.24	1.69	2.57	0.01	0.06	—	0.06	0.06	—	0.06	—	703	703	0.03	0.01	—	705

Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.31	0.47	< 0.005	0.01	—	0.01	0.01	—	0.01	—	116	116	< 0.005	< 0.005	—	117
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	15.0	15.0	< 0.005	< 0.005	0.02	15.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.04	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	13.4	13.4	< 0.005	< 0.005	< 0.005	13.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.92	9.92	< 0.005	< 0.005	0.01	9.97
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.64	1.64	< 0.005	< 0.005	< 0.005	1.65
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.91. Grading (2037) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.33	2.27	3.56	0.01	0.08	—	0.08	0.08	—	0.08	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.40	0.33	2.27	3.56	0.01	0.08	—	0.08	0.08	—	0.08	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.28	0.24	1.62	2.54	0.01	0.06	—	0.06	0.05	—	0.05	—	701	701	0.03	0.01	—	703
Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.30	0.46	< 0.005	0.01	—	0.01	0.01	—	0.01	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.9	14.9	< 0.005	< 0.005	0.01	15.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.04	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	13.2	13.2	< 0.005	< 0.005	< 0.005	13.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.80	9.80	< 0.005	< 0.005	< 0.005	9.85

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.62	1.62	< 0.005	< 0.005	< 0.005	1.63
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.93. Grading (2038) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	0.32	2.13	3.45	0.01	0.08	—	0.08	0.07	—	0.07	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	0.32	2.13	3.45	0.01	0.08	—	0.08	0.07	—	0.07	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27	0.23	1.52	2.46	0.01	0.06	—	0.06	0.05	—	0.05	—	701	701	0.03	0.01	—	703
Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.28	0.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.8	14.8	< 0.005	< 0.005	0.01	14.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.04	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	13.1	13.1	< 0.005	< 0.005	< 0.005	13.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.71	9.71	< 0.005	< 0.005	< 0.005	9.76
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.61	1.61	< 0.005	< 0.005	< 0.005	1.62
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.95. Grading (2039) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	0.32	2.05	3.38	0.01	0.07	—	0.07	0.07	—	0.07	—	981	981	0.04	0.01	—	985
Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	0.32	2.05	3.38	0.01	0.07	—	0.07	0.07	—	0.07	—	981	981	0.04	0.01	—	985

Dust From Material Movement	—	—	—	—	—	—	1.37	1.37	—	0.54	0.54	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.27	0.22	1.46	2.41	0.01	0.05	—	0.05	0.05	—	0.05	—	699	699	0.03	0.01	—	701
Dust From Material Movement	—	—	—	—	—	—	0.98	0.98	—	0.39	0.39	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.27	0.44	< 0.005	0.01	—	0.01	0.01	—	0.01	—	116	116	< 0.005	< 0.005	—	116
Dust From Material Movement	—	—	—	—	—	—	0.18	0.18	—	0.07	0.07	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.7	14.7	< 0.005	< 0.005	0.01	14.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	< 0.005	< 0.005	0.04	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	13.0	13.0	< 0.005	< 0.005	< 0.005	13.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.61	9.61	< 0.005	< 0.005	< 0.005	9.66
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.59	1.59	< 0.005	< 0.005	< 0.005	1.60
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.97. Building Construction (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.13	1.79	16.7	19.5	0.03	0.74	—	0.74	0.68	—	0.68	—	3,562	3,562	0.14	0.03	—	3,574
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.13	1.79	16.7	19.5	0.03	0.74	—	0.74	0.68	—	0.68	—	3,562	3,562	0.14	0.03	—	3,574

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.53	1.28	11.9	14.0	0.02	0.53	—	0.53	0.49	—	0.49	—	2,551	2,551	0.10	0.02	—	2,560
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.28	0.23	2.18	2.55	< 0.005	0.10	—	0.10	0.09	—	0.09	—	422	422	0.02	< 0.005	—	424
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	36.3	34.3	18.7	305	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	46,519	46,519	2.76	1.94	186	47,352
Vendor	3.52	2.13	66.0	29.7	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	40,393	40,393	1.00	5.85	103	42,265
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	32.1	29.9	23.7	247	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	41,270	41,270	1.99	1.94	4.83	41,901
Vendor	3.32	1.93	70.3	30.8	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	40,464	40,464	0.93	5.85	2.68	42,234
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	23.4	21.9	14.7	179	0.00	0.00	28.8	28.8	0.00	6.74	6.74	—	30,620	30,620	2.10	1.39	57.7	31,143
Vendor	2.43	1.43	49.1	21.5	0.19	0.38	7.15	7.53	0.38	1.98	2.36	—	28,953	28,953	0.71	4.19	31.9	30,251
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	4.27	3.99	2.68	32.7	0.00	0.00	5.25	5.25	0.00	1.23	1.23	—	5,069	5,069	0.35	0.23	9.55	5,156
Vendor	0.44	0.26	8.96	3.92	0.03	0.07	1.30	1.37	0.07	0.36	0.43	—	4,793	4,793	0.12	0.69	5.28	5,008
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.99. Building Construction (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.00	1.67	15.5	19.4	0.03	0.64	—	0.64	0.59	—	0.59	—	3,562	3,562	0.14	0.03	—	3,574
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.00	1.67	15.5	19.4	0.03	0.64	—	0.64	0.59	—	0.59	—	3,562	3,562	0.14	0.03	—	3,574
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.43	1.20	11.1	13.8	0.02	0.46	—	0.46	0.42	—	0.42	—	2,544	2,544	0.10	0.02	—	2,553
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.26	0.22	2.02	2.53	< 0.005	0.08	—	0.08	0.08	—	0.08	—	421	421	0.02	< 0.005	—	423

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	34.1	32.2	17.1	280	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	45,527	45,527	1.32	1.94	170	46,308
Vendor	3.26	2.13	63.9	28.3	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	39,668	39,668	1.00	5.85	103	41,540
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	30.5	28.2	20.6	226	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	40,405	40,405	1.82	1.94	4.41	41,032
Vendor	2.99	1.93	68.0	29.7	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	39,742	39,742	0.93	5.85	2.68	41,511
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	21.9	20.5	13.4	164	0.00	0.00	28.7	28.7	0.00	6.72	6.72	—	29,894	29,894	1.18	1.38	52.6	30,389
Vendor	2.23	1.42	47.2	20.7	0.19	0.38	7.13	7.51	0.38	1.97	2.35	—	28,357	28,357	0.66	4.18	31.8	29,650
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.99	3.74	2.44	30.0	0.00	0.00	5.24	5.24	0.00	1.23	1.23	—	4,949	4,949	0.20	0.23	8.71	5,031
Vendor	0.41	0.26	8.62	3.77	0.03	0.07	1.30	1.37	0.07	0.36	0.43	—	4,695	4,695	0.11	0.69	5.26	4,909
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.101. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.90	1.59	14.6	19.3	0.03	0.56	—	0.56	0.52	—	0.52	—	3,561	3,561	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.90	1.59	14.6	19.3	0.03	0.56	—	0.56	0.52	—	0.52	—	3,561	3,561	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.36	1.14	10.5	13.8	0.02	0.40	—	0.40	0.37	—	0.37	—	2,544	2,544	0.10	0.02	—	2,552
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.91	2.51	< 0.005	0.07	—	0.07	0.07	—	0.07	—	421	421	0.02	< 0.005	—	423
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	31.8	29.9	15.5	257	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	44,579	44,579	1.32	1.94	155	45,344
Vendor	3.19	2.13	61.8	27.6	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	38,920	38,920	0.93	5.85	90.9	40,777
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	27.4	26.6	19.0	208	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	39,578	39,578	1.66	1.94	4.01	40,200
Vendor	2.99	1.93	65.9	28.9	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	38,995	38,995	0.93	5.85	2.36	40,764
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	20.7	19.3	12.2	151	0.00	0.00	28.7	28.7	0.00	6.72	6.72	—	29,280	29,280	1.06	1.38	47.7	29,766
Vendor	2.18	1.42	45.7	20.0	0.19	0.38	7.13	7.51	0.38	1.97	2.35	—	27,822	27,822	0.66	4.18	28.0	29,112
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.78	3.53	2.23	27.6	0.00	0.00	5.24	5.24	0.00	1.23	1.23	—	4,848	4,848	0.18	0.23	7.89	4,928
Vendor	0.40	0.26	8.35	3.66	0.03	0.07	1.30	1.37	0.07	0.36	0.43	—	4,606	4,606	0.11	0.69	4.63	4,820
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.103. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.83	1.53	13.9	19.2	0.03	0.50	—	0.50	0.46	—	0.46	—	3,561	3,561	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.83	1.53	13.9	19.2	0.03	0.50	—	0.50	0.46	—	0.46	—	3,561	3,561	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.31	1.09	9.96	13.7	0.02	0.36	—	0.36	0.33	—	0.33	—	2,543	2,543	0.10	0.02	—	2,552
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.24	0.20	1.82	2.51	< 0.005	0.07	—	0.07	0.06	—	0.06	—	421	421	0.02	< 0.005	—	423
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	28.9	28.2	13.9	238	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	43,650	43,650	1.16	1.77	140	44,347
Vendor	3.19	2.13	59.8	26.9	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	38,090	38,090	0.93	5.58	79.9	39,858
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	25.7	23.8	17.3	193	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	38,764	38,764	1.66	1.94	3.63	39,386
Vendor	2.99	1.93	63.6	28.0	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	38,167	38,167	0.93	5.58	2.07	39,857
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	18.6	18.1	11.1	140	0.00	0.00	28.7	28.7	0.00	6.72	6.72	—	28,675	28,675	0.95	1.38	43.1	29,154
Vendor	2.18	1.42	44.4	19.5	0.19	0.38	7.13	7.51	0.38	1.97	2.35	—	27,230	27,230	0.66	3.99	24.6	28,460

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.40	3.31	2.02	25.5	0.00	0.00	5.24	5.24	0.00	1.23	1.23	—	4,748	4,748	0.16	0.23	7.14	4,827
Vendor	0.40	0.26	8.10	3.56	0.03	0.07	1.30	1.37	0.07	0.36	0.43	—	4,508	4,508	0.11	0.66	4.08	4,712
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.105. Building Construction (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.76	1.47	13.3	19.2	0.03	0.45	—	0.45	0.41	—	0.41	—	3,561	3,561	0.14	0.03	—	3,574
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.76	1.47	13.3	19.2	0.03	0.45	—	0.45	0.41	—	0.41	—	3,561	3,561	0.14	0.03	—	3,574
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.26	1.05	9.50	13.8	0.02	0.32	—	0.32	0.29	—	0.29	—	2,551	2,551	0.10	0.02	—	2,560
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.23	0.19	1.73	2.51	< 0.005	0.06	—	0.06	0.05	—	0.05	—	422	422	0.02	< 0.005	—	424
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	27.5	25.8	12.3	221	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	42,808	42,808	1.16	1.77	126	43,490
Vendor	2.86	1.99	58.0	26.1	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	37,158	37,158	0.93	5.58	70.4	38,916
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	24.6	22.6	15.7	178	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	38,023	38,023	1.49	1.94	3.26	38,640
Vendor	2.66	1.93	61.6	27.3	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	37,236	37,236	0.93	5.58	1.83	38,925
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	17.8	16.4	9.95	130	0.00	0.00	28.8	28.8	0.00	6.74	6.74	—	28,203	28,203	0.95	1.27	38.9	28,644
Vendor	2.00	1.43	43.0	19.0	0.19	0.38	7.15	7.53	0.38	1.98	2.36	—	26,638	26,638	0.67	4.00	21.8	27,868
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.25	3.00	1.82	23.8	0.00	0.00	5.25	5.25	0.00	1.23	1.23	—	4,669	4,669	0.16	0.21	6.44	4,742
Vendor	0.36	0.26	7.86	3.48	0.03	0.07	1.30	1.37	0.07	0.36	0.43	—	4,410	4,410	0.11	0.66	3.60	4,614
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.107. Building Construction (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.71	1.43	12.7	19.2	0.03	0.41	—	0.41	0.38	—	0.38	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.71	1.43	12.7	19.2	0.03	0.41	—	0.41	0.38	—	0.38	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.22	1.02	9.11	13.7	0.02	0.29	—	0.29	0.27	—	0.27	—	2,543	2,543	0.10	0.02	—	2,552
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.19	1.66	2.50	< 0.005	0.05	—	0.05	0.05	—	0.05	—	421	421	0.02	< 0.005	—	422
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	25.9	24.1	10.8	206	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	42,016	42,016	0.99	1.77	112	42,681
Vendor	2.79	1.73	55.9	25.7	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	36,169	36,169	0.93	5.32	62.0	37,839
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	23.2	21.3	14.2	167	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	37,329	37,329	1.49	1.94	2.92	37,946
Vendor	2.66	1.60	59.5	26.8	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	36,247	36,247	0.93	5.32	1.60	37,857
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	16.7	15.3	8.89	121	0.00	0.00	28.7	28.7	0.00	6.72	6.72	—	27,612	27,612	0.83	1.27	34.6	28,044
Vendor	1.99	1.19	41.4	18.7	0.19	0.38	7.13	7.51	0.38	1.97	2.35	—	25,858	25,858	0.66	3.80	19.1	27,026
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.05	2.80	1.62	22.0	0.00	0.00	5.24	5.24	0.00	1.23	1.23	—	4,571	4,571	0.14	0.21	5.73	4,643
Vendor	0.36	0.22	7.56	3.41	0.03	0.07	1.30	1.37	0.07	0.36	0.43	—	4,281	4,281	0.11	0.63	3.16	4,474
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.109. Building Construction (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.67	1.40	12.5	19.1	0.03	0.39	—	0.39	0.36	—	0.36	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.67	1.40	12.5	19.1	0.03	0.39	—	0.39	0.36	—	0.36	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	1.00	8.90	13.7	0.02	0.28	—	0.28	0.25	—	0.25	—	2,543	2,543	0.10	0.02	—	2,552
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.62	2.49	< 0.005	0.05	—	0.05	0.05	—	0.05	—	421	421	0.02	< 0.005	—	422
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	24.6	22.8	10.5	192	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	41,270	41,270	0.99	0.50	99.9	41,543
Vendor	2.79	1.73	54.4	25.3	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	35,129	35,129	0.66	5.25	54.0	36,765
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	20.6	20.0	12.6	156	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	36,674	36,674	1.32	1.77	2.59	37,237
Vendor	2.66	1.53	57.7	26.3	0.27	0.53	10.1	10.6	0.53	2.80	3.33	—	35,208	35,208	0.66	5.32	1.40	36,811
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	15.9	14.6	7.75	112	0.00	0.00	28.7	28.7	0.00	6.72	6.72	—	27,126	27,126	0.83	1.27	30.9	27,555
Vendor	1.95	1.19	40.3	18.4	0.19	0.38	7.13	7.51	0.38	1.97	2.35	—	25,116	25,116	0.47	3.75	16.7	26,262

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.90	2.67	1.41	20.5	0.00	0.00	5.24	5.24	0.00	1.23	1.23	—	4,491	4,491	0.14	0.21	5.11	4,562
Vendor	0.36	0.22	7.36	3.35	0.03	0.07	1.30	1.37	0.07	0.36	0.43	—	4,158	4,158	0.08	0.62	2.77	4,348
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.111. Building Construction (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.36	12.1	19.1	0.03	0.36	—	0.36	0.33	—	0.33	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.63	1.36	12.1	19.1	0.03	0.36	—	0.36	0.33	—	0.33	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.16	0.97	8.61	13.6	0.02	0.26	—	0.26	0.24	—	0.24	—	2,543	2,543	0.10	0.02	—	2,552
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.21	0.18	1.57	2.49	< 0.005	0.05	—	0.05	0.04	—	0.04	—	421	421	0.02	< 0.005	—	422
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	21.8	21.3	9.07	180	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	40,587	40,587	0.83	0.50	88.4	40,845
Vendor	2.79	1.73	52.9	24.9	0.27	0.53	10.1	10.6	0.27	2.80	3.06	—	34,061	34,061	0.66	4.99	47.2	35,610
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	19.7	19.2	11.0	145	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	36,072	36,072	1.16	1.77	2.30	36,631
Vendor	2.53	1.46	56.2	25.9	0.27	0.53	10.1	10.6	0.27	2.80	3.06	—	34,141	34,141	0.66	5.05	1.22	35,664
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	14.2	13.8	7.63	105	0.00	0.00	28.7	28.7	0.00	6.72	6.72	—	26,680	26,680	0.71	0.35	27.2	26,831
Vendor	1.90	1.14	39.0	18.0	0.19	0.38	7.13	7.51	0.19	1.97	2.16	—	24,353	24,353	0.47	3.56	14.5	25,441
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.58	2.52	1.39	19.2	0.00	0.00	5.24	5.24	0.00	1.23	1.23	—	4,417	4,417	0.12	0.06	4.51	4,442
Vendor	0.35	0.21	7.12	3.29	0.03	0.07	1.30	1.37	0.03	0.36	0.39	—	4,032	4,032	0.08	0.59	2.40	4,212
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.113. Building Construction (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.59	1.33	11.7	19.0	0.03	0.33	—	0.33	0.31	—	0.31	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.59	1.33	11.7	19.0	0.03	0.33	—	0.33	0.31	—	0.31	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.14	0.95	8.37	13.6	0.02	0.24	—	0.24	0.22	—	0.22	—	2,550	2,550	0.10	0.02	—	2,559
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.53	2.48	< 0.005	0.04	—	0.04	0.04	—	0.04	—	422	422	0.02	< 0.005	—	424
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	20.3	20.0	8.91	169	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	39,953	39,953	0.83	0.50	77.7	40,199
Vendor	2.73	1.66	51.3	24.5	0.27	0.53	10.1	10.6	0.27	2.80	3.06	—	33,023	33,023	0.66	4.99	40.3	34,566
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	18.5	18.0	10.8	136	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	35,513	35,513	1.16	0.50	2.01	35,692
Vendor	2.53	1.46	54.7	25.5	0.27	0.53	10.1	10.6	0.27	2.80	3.06	—	33,104	33,104	0.66	4.99	1.05	34,607
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	13.4	13.0	6.50	99.5	0.00	0.00	28.8	28.8	0.00	6.74	6.74	—	26,338	26,338	0.71	0.36	24.0	26,486
Vendor	1.86	1.14	38.1	17.9	0.19	0.38	7.15	7.53	0.19	1.98	2.17	—	23,677	23,677	0.48	3.57	12.5	24,765
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.44	2.37	1.19	18.2	0.00	0.00	5.25	5.25	0.00	1.23	1.23	—	4,361	4,361	0.12	0.06	3.98	4,385
Vendor	0.34	0.21	6.95	3.26	0.03	0.07	1.30	1.37	0.03	0.36	0.40	—	3,920	3,920	0.08	0.59	2.07	4,100
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.115. Building Construction (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.56	1.30	11.4	19.0	0.03	0.30	—	0.30	0.28	—	0.28	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.56	1.30	11.4	19.0	0.03	0.30	—	0.30	0.28	—	0.28	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.11	0.93	8.13	13.6	0.02	0.22	—	0.22	0.20	—	0.20	—	2,543	2,543	0.10	0.02	—	2,552
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.48	2.47	< 0.005	0.04	—	0.04	0.04	—	0.04	—	421	421	0.02	< 0.005	—	422
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	19.5	19.2	7.47	159	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	39,395	39,395	0.83	0.50	67.8	39,632
Vendor	2.39	1.66	49.9	24.2	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	32,038	32,038	0.66	4.72	34.3	33,496
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	17.7	17.3	9.40	128	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	35,020	35,020	1.16	0.50	1.76	35,199
Vendor	2.26	1.46	53.3	25.1	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	32,119	32,119	0.66	4.72	0.89	33,544
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	12.7	12.5	6.36	93.6	0.00	0.00	28.7	28.7	0.00	6.72	6.72	—	25,901	25,901	0.71	0.35	21.0	26,045
Vendor	1.66	1.14	36.9	17.6	0.19	0.19	7.13	7.32	0.19	1.97	2.16	—	22,909	22,909	0.47	3.37	10.6	23,936

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.32	2.28	1.16	17.1	0.00	0.00	5.24	5.24	0.00	1.23	1.23	—	4,288	4,288	0.12	0.06	3.47	4,312
Vendor	0.30	0.21	6.74	3.21	0.03	0.03	1.30	1.34	0.03	0.36	0.39	—	3,793	3,793	0.08	0.56	1.75	3,963
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.117. Building Construction (2034) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.53	1.28	11.2	19.0	0.03	0.29	—	0.29	0.26	—	0.26	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.53	1.28	11.2	19.0	0.03	0.29	—	0.29	0.26	—	0.26	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.09	0.92	7.98	13.5	0.02	0.20	—	0.20	0.19	—	0.19	—	2,543	2,543	0.10	0.02	—	2,552
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.20	0.17	1.46	2.47	< 0.005	0.04	—	0.04	0.03	—	0.03	—	421	421	0.02	< 0.005	—	422
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	18.3	18.0	7.30	152	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	38,888	38,888	0.83	0.50	58.7	39,116
Vendor	2.39	1.66	48.7	23.9	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	31,112	31,112	0.66	4.72	28.9	32,564
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	16.8	16.3	9.24	121	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	34,571	34,571	0.99	0.50	1.52	34,746
Vendor	2.26	1.46	52.2	24.8	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	31,194	31,194	0.66	4.72	0.75	32,618
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	12.0	11.8	6.24	88.9	0.00	0.00	28.7	28.7	0.00	6.72	6.72	—	25,570	25,570	0.59	0.35	18.1	25,709
Vendor	1.66	1.14	36.1	17.3	0.19	0.19	7.13	7.32	0.19	1.97	2.16	—	22,247	22,247	0.47	3.37	8.91	23,273
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.19	2.15	1.14	16.2	0.00	0.00	5.24	5.24	0.00	1.23	1.23	—	4,233	4,233	0.10	0.06	3.00	4,256
Vendor	0.30	0.21	6.60	3.16	0.03	0.03	1.30	1.34	0.03	0.36	0.39	—	3,683	3,683	0.08	0.56	1.48	3,853
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.119. Building Construction (2035) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.26	10.9	18.8	0.03	0.27	—	0.27	0.25	—	0.25	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.50	1.26	10.9	18.8	0.03	0.27	—	0.27	0.25	—	0.25	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	0.90	7.78	13.5	0.02	0.19	—	0.19	0.18	—	0.18	—	2,543	2,543	0.10	0.02	—	2,552
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.16	1.42	2.46	< 0.005	0.03	—	0.03	0.03	—	0.03	—	421	421	0.02	< 0.005	—	422
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	17.8	17.7	7.14	145	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	38,435	38,435	0.66	0.50	50.7	38,650
Vendor	2.39	1.66	47.6	23.8	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	30,246	30,246	0.66	4.45	24.0	31,614
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	16.3	15.8	9.07	116	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	34,171	34,171	0.99	0.50	1.31	34,345
Vendor	2.19	1.40	51.1	24.5	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	30,328	30,328	0.66	4.45	0.62	31,672
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	11.8	11.4	5.33	84.5	0.00	0.00	28.7	28.7	0.00	6.72	6.72	—	25,273	25,273	0.59	0.35	15.6	25,409
Vendor	1.66	1.14	35.3	17.1	0.19	0.19	7.13	7.32	0.19	1.97	2.16	—	21,629	21,629	0.47	3.18	7.39	22,596
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.15	2.09	0.97	15.4	0.00	0.00	5.24	5.24	0.00	1.23	1.23	—	4,184	4,184	0.10	0.06	2.59	4,207
Vendor	0.30	0.21	6.45	3.12	0.03	0.03	1.30	1.34	0.03	0.36	0.39	—	3,581	3,581	0.08	0.53	1.22	3,741
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.121. Building Construction (2036) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.48	1.23	10.6	18.7	0.03	0.25	—	0.25	0.23	—	0.23	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.48	1.23	10.6	18.7	0.03	0.25	—	0.25	0.23	—	0.23	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.06	0.88	7.58	13.4	0.02	0.18	—	0.18	0.17	—	0.17	—	2,550	2,550	0.10	0.02	—	2,559
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.38	2.45	< 0.005	0.03	—	0.03	0.03	—	0.03	—	422	422	0.02	< 0.005	—	424
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	17.3	17.0	7.14	138	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	38,027	38,027	0.66	0.50	43.2	38,235
Vendor	2.39	1.66	46.7	23.5	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	29,467	29,467	0.66	4.45	19.7	30,830
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	16.0	15.7	7.63	110	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	33,808	33,808	0.99	0.50	1.12	33,982
Vendor	2.19	1.40	49.9	24.5	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	29,549	29,549	0.66	4.45	0.51	30,893
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	11.6	11.3	5.23	80.4	0.00	0.00	28.8	28.8	0.00	6.74	6.74	—	25,073	25,073	0.59	0.36	13.4	25,208
Vendor	1.67	1.14	34.8	17.1	0.19	0.19	7.15	7.34	0.19	1.98	2.17	—	21,130	21,130	0.48	3.19	6.10	22,099

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.11	2.07	0.95	14.7	0.00	0.00	5.25	5.25	0.00	1.23	1.23	—	4,151	4,151	0.10	0.06	2.23	4,173
Vendor	0.30	0.21	6.35	3.12	0.03	0.03	1.30	1.34	0.03	0.36	0.40	—	3,498	3,498	0.08	0.53	1.01	3,659
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.123. Building Construction (2037) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.45	1.22	10.4	18.6	0.03	0.23	—	0.23	0.22	—	0.22	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.45	1.22	10.4	18.6	0.03	0.23	—	0.23	0.22	—	0.22	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.04	0.87	7.41	13.3	0.02	0.17	—	0.17	0.15	—	0.15	—	2,543	2,543	0.10	0.02	—	2,552
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.19	0.16	1.35	2.42	< 0.005	0.03	—	0.03	0.03	—	0.03	—	421	421	0.02	< 0.005	—	422
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	16.3	16.0	5.70	133	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	37,668	37,668	0.66	0.50	36.8	37,869
Vendor	2.39	1.66	45.9	23.3	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	28,771	28,771	0.66	4.45	16.0	30,131
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	15.3	13.7	7.47	106	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	33,490	33,490	0.83	0.50	0.96	33,659
Vendor	2.19	1.40	49.1	24.1	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	28,854	28,854	0.60	4.45	0.41	30,197
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	10.8	9.82	5.10	77.1	0.00	0.00	28.7	28.7	0.00	6.72	6.72	—	24,770	24,770	0.59	0.35	11.4	24,902
Vendor	1.61	1.09	34.0	16.9	0.19	0.19	7.13	7.32	0.19	1.97	2.16	—	20,576	20,576	0.47	3.18	4.92	21,541
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.98	1.79	0.93	14.1	0.00	0.00	5.24	5.24	0.00	1.23	1.23	—	4,101	4,101	0.10	0.06	1.88	4,123
Vendor	0.29	0.20	6.20	3.08	0.03	0.03	1.30	1.34	0.03	0.36	0.39	—	3,407	3,407	0.08	0.53	0.81	3,566
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.125. Building Construction (2038) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.44	1.21	10.2	18.5	0.03	0.23	—	0.23	0.21	—	0.21	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.44	1.21	10.2	18.5	0.03	0.23	—	0.23	0.21	—	0.21	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.03	0.86	7.31	13.2	0.02	0.16	—	0.16	0.15	—	0.15	—	2,543	2,543	0.10	0.02	—	2,552
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.33	2.41	< 0.005	0.03	—	0.03	0.03	—	0.03	—	421	421	0.02	< 0.005	—	422
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	15.5	13.9	5.70	129	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	37,335	37,335	0.66	0.50	31.2	37,530
Vendor	2.39	1.66	45.1	23.2	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	28,152	28,152	0.66	4.19	12.8	29,430
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	14.9	13.2	7.47	101	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	33,194	33,194	0.83	0.50	0.81	33,363
Vendor	2.13	1.46	48.3	24.1	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	28,235	28,235	0.60	4.19	0.33	29,498
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	10.6	9.46	5.10	74.2	0.00	0.00	28.7	28.7	0.00	6.72	6.72	—	24,551	24,551	0.47	0.35	9.62	24,678
Vendor	1.61	1.09	33.4	16.9	0.19	0.19	7.13	7.32	0.19	1.97	2.16	—	20,133	20,133	0.43	2.99	3.94	21,040
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.94	1.73	0.93	13.5	0.00	0.00	5.24	5.24	0.00	1.23	1.23	—	4,065	4,065	0.08	0.06	1.59	4,086
Vendor	0.29	0.20	6.09	3.08	0.03	0.03	1.30	1.34	0.03	0.36	0.39	—	3,333	3,333	0.07	0.50	0.65	3,483
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.127. Building Construction (2039) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.43	1.20	10.1	18.4	0.03	0.22	—	0.22	0.20	—	0.20	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.43	1.20	10.1	18.4	0.03	0.22	—	0.22	0.20	—	0.20	—	3,560	3,560	0.14	0.03	—	3,573
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.02	0.85	7.17	13.1	0.02	0.15	—	0.15	0.14	—	0.14	—	2,536	2,536	0.10	0.02	—	2,545
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.31	2.40	< 0.005	0.03	—	0.03	0.03	—	0.03	—	420	420	0.02	< 0.005	—	421
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	14.9	13.2	5.53	125	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	37,059	37,059	0.66	0.50	26.3	37,250
Vendor	2.39	1.66	44.4	23.2	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	27,600	27,600	0.60	4.19	10.1	28,874
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	14.2	12.6	7.30	98.2	0.00	0.00	40.9	40.9	0.00	9.58	9.58	—	32,949	32,949	0.83	0.50	0.68	33,118
Vendor	2.13	1.46	47.6	24.1	0.27	0.27	10.1	10.4	0.27	2.80	3.06	—	27,684	27,684	0.60	4.19	0.26	28,947
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	9.99	8.84	4.06	72.1	0.00	0.00	28.6	28.6	0.00	6.70	6.70	—	24,303	24,303	0.47	0.35	8.06	24,428
Vendor	1.61	1.09	33.0	16.8	0.19	0.19	7.11	7.30	0.19	1.97	2.16	—	19,686	19,686	0.43	2.98	3.12	20,588

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.82	1.61	0.74	13.2	0.00	0.00	5.22	5.22	0.00	1.22	1.22	—	4,024	4,024	0.08	0.06	1.34	4,044
Vendor	0.29	0.20	6.02	3.07	0.03	0.03	1.30	1.33	0.03	0.36	0.39	—	3,259	3,259	0.07	0.49	0.52	3,409
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.129. Paving (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.82	1.05	< 0.005	0.04	—	0.04	0.04	—	0.04	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.09	0.82	1.05	< 0.005	0.04	—	0.04	0.04	—	0.04	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.06	0.59	0.75	< 0.005	0.03	—	0.03	0.03	—	0.03	—	114	114	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.11	0.14	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.9
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.79	9.79	< 0.005	< 0.005	0.04	9.96
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.68	8.68	< 0.005	< 0.005	< 0.005	8.82
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.44	6.44	< 0.005	< 0.005	0.01	6.55
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.07	1.07	< 0.005	< 0.005	< 0.005	1.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.131. Paving (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.78	1.05	< 0.005	0.04	—	0.04	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.78	1.05	< 0.005	0.04	—	0.04	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.56	0.75	< 0.005	0.03	—	0.03	0.02	—	0.02	—	113	113	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.58	9.58	< 0.005	< 0.005	0.04	9.74
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.50	8.50	< 0.005	< 0.005	< 0.005	8.63
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.29	6.29	< 0.005	< 0.005	0.01	6.39
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.04	1.04	< 0.005	< 0.005	< 0.005	1.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.133. Paving (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.75	1.04	< 0.005	0.03	—	0.03	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.75	1.04	< 0.005	0.03	—	0.03	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.53	0.75	< 0.005	0.02	—	0.02	0.02	—	0.02	—	113	113	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.38	9.38	< 0.005	< 0.005	0.03	9.54
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.33	8.33	< 0.005	< 0.005	< 0.005	8.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.16	6.16	< 0.005	< 0.005	0.01	6.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.02	1.02	< 0.005	< 0.005	< 0.005	1.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.135. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.73	1.05	< 0.005	0.03	—	0.03	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.73	1.05	< 0.005	0.03	—	0.03	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.52	0.75	< 0.005	0.02	—	0.02	0.02	—	0.02	—	113	113	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.10	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.18	9.18	< 0.005	< 0.005	0.03	9.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.16	8.16	< 0.005	< 0.005	< 0.005	8.29
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.03	6.03	< 0.005	< 0.005	0.01	6.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.00	1.00	< 0.005	< 0.005	< 0.005	1.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.137. Paving (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.70	1.04	< 0.005	0.03	—	0.03	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.70	1.04	< 0.005	0.03	—	0.03	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159

Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.50	0.75	< 0.005	0.02	—	0.02	0.02	—	0.02	—	114	114	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.9
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.01	9.01	< 0.005	< 0.005	0.03	9.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.00	8.00	< 0.005	< 0.005	< 0.005	8.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.93	5.93	< 0.005	< 0.005	0.01	6.03

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.98	0.98	< 0.005	< 0.005	< 0.005	1.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.139. Paving (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.68	1.04	< 0.005	0.03	—	0.03	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.68	1.04	< 0.005	0.03	—	0.03	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.48	0.74	< 0.005	0.02	—	0.02	0.02	—	0.02	—	113	113	< 0.005	< 0.005	—	114

Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.84	8.84	< 0.005	< 0.005	0.02	8.98
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.85	7.85	< 0.005	< 0.005	< 0.005	7.98
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.81	5.81	< 0.005	< 0.005	0.01	5.90
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.96	0.96	< 0.005	< 0.005	< 0.005	0.98
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.141. Paving (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.66	1.04	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.66	1.04	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.47	0.74	< 0.005	0.02	—	0.02	0.02	—	0.02	—	113	113	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8

Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.68	8.68	< 0.005	< 0.005	0.02	8.74
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.72	7.72	< 0.005	< 0.005	< 0.005	7.83
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.71	5.71	< 0.005	< 0.005	0.01	5.80
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.94	0.94	< 0.005	< 0.005	< 0.005	0.96
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.143. Paving (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.64	1.04	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.64	1.04	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.46	0.74	< 0.005	0.02	—	0.02	0.01	—	0.01	—	113	113	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.54	8.54	< 0.005	< 0.005	0.02	8.59
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.59	7.59	< 0.005	< 0.005	< 0.005	7.71
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.61	5.61	< 0.005	< 0.005	0.01	5.65
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.93
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.145. Paving (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.08	0.06	0.63	1.04	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.06	0.63	1.04	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.45	0.74	< 0.005	0.01	—	0.01	0.01	—	0.01	—	114	114	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.9
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.41	8.41	< 0.005	< 0.005	0.02	8.46
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.47	7.47	< 0.005	< 0.005	< 0.005	7.51
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.54	5.54	< 0.005	< 0.005	0.01	5.57
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.92	0.92	< 0.005	< 0.005	< 0.005	0.92
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.147. Paving (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.62	1.03	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.62	1.03	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.44	0.74	< 0.005	0.01	—	0.01	0.01	—	0.01	—	113	113	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.29	8.29	< 0.005	< 0.005	0.01	8.34
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.37	7.37	< 0.005	< 0.005	< 0.005	7.41

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.45	5.45	< 0.005	< 0.005	< 0.005	5.48
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.90	0.90	< 0.005	< 0.005	< 0.005	0.91
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.149. Paving (2034) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.61	1.03	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.61	1.03	< 0.005	0.02	—	0.02	0.02	—	0.02	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.44	0.74	< 0.005	0.01	—	0.01	0.01	—	0.01	—	113	113	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.18	8.18	< 0.005	< 0.005	0.01	8.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.27	7.27	< 0.005	< 0.005	< 0.005	7.31
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.38	5.38	< 0.005	< 0.005	< 0.005	5.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.89	0.89	< 0.005	< 0.005	< 0.005	0.90
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.151. Paving (2035) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.60	1.03	< 0.005	0.02	—	0.02	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.60	1.03	< 0.005	0.02	—	0.02	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.43	0.73	< 0.005	0.01	—	0.01	0.01	—	0.01	—	113	113	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.09	8.09	< 0.005	< 0.005	0.01	8.13
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.19	7.19	< 0.005	< 0.005	< 0.005	7.23
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.32	5.32	< 0.005	< 0.005	< 0.005	5.35
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.88	0.88	< 0.005	< 0.005	< 0.005	0.89
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.153. Paving (2036) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.59	1.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.59	1.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.42	0.74	< 0.005	0.01	—	0.01	0.01	—	0.01	—	114	114	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.9
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.00	8.00	< 0.005	< 0.005	0.01	8.04
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.11	7.11	< 0.005	< 0.005	< 0.005	7.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.28	5.28	< 0.005	< 0.005	< 0.005	5.30
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.87	0.87	< 0.005	< 0.005	< 0.005	0.88
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.155. Paving (2037) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.58	1.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.58	1.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.41	0.73	< 0.005	0.01	—	0.01	0.01	—	0.01	—	113	113	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.93	7.93	< 0.005	< 0.005	0.01	7.97
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.05	7.05	< 0.005	< 0.005	< 0.005	7.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.21	5.21	< 0.005	< 0.005	< 0.005	5.24
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.86	0.86	< 0.005	< 0.005	< 0.005	0.87
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.157. Paving (2038) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.57	1.02	< 0.005	0.01	—	0.01	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.57	1.02	< 0.005	0.01	—	0.01	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.40	0.73	< 0.005	0.01	—	0.01	0.01	—	0.01	—	113	113	< 0.005	< 0.005	—	114
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.8	18.8	< 0.005	< 0.005	—	18.8
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.86	7.86	< 0.005	< 0.005	0.01	7.90
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.98	6.98	< 0.005	< 0.005	< 0.005	7.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.17	5.17	< 0.005	< 0.005	< 0.005	5.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.86	0.86	< 0.005	< 0.005	< 0.005	0.86
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.159. Paving (2039) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.56	1.02	< 0.005	0.01	—	0.01	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159
Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.56	1.02	< 0.005	0.01	—	0.01	0.01	—	0.01	—	159	159	0.01	< 0.005	—	159

Paving	0.04	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.40	0.73	< 0.005	0.01	—	0.01	0.01	—	0.01	—	113	113	< 0.005	< 0.005	—	113
Paving	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.7	18.7	< 0.005	< 0.005	—	18.8
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.80	7.80	< 0.005	< 0.005	0.01	7.84
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.93	6.93	< 0.005	< 0.005	< 0.005	6.97
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.11	5.11	< 0.005	< 0.005	< 0.005	5.14

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.85	0.85	< 0.005	< 0.005	< 0.005	0.85
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.161. Architectural Coating (2024) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.10	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.1
Architectural Coatings	9.83	9.83	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.67
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.51	0.49	0.27	4.33	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	660	660	0.04	0.03	2.64	672
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.46	0.42	0.34	3.50	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	586	586	0.03	0.03	0.07	595
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.33	0.31	0.21	2.55	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	435	435	0.03	0.02	0.82	442

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.46	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	72.0	72.0	< 0.005	< 0.005	0.14	73.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.163. Architectural Coating (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.09	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.09	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.0
Architectural Coatings	9.81	9.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.66
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.48	0.46	0.24	3.97	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	646	646	0.02	0.03	2.42	657
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.43	0.40	0.29	3.21	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	574	574	0.03	0.03	0.06	582
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.29	0.19	2.33	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	424	424	0.02	0.02	0.75	431

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.03	0.43	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	70.3	70.3	< 0.005	< 0.005	0.12	71.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.165. Architectural Coating (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.09	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.09	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.0
Architectural Coatings	9.81	9.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.66
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.45	0.42	0.22	3.65	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	633	633	0.02	0.03	2.20	644
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.39	0.38	0.27	2.95	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	562	562	0.02	0.03	0.06	571
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.27	0.17	2.15	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	416	416	0.02	0.02	0.68	423

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.03	0.39	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	68.8	68.8	< 0.005	< 0.005	0.11	70.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.167. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.0
Architectural Coatings	9.81	9.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.66
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.41	0.40	0.20	3.37	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	620	620	0.02	0.03	1.98	629
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.37	0.34	0.25	2.74	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	550	550	0.02	0.03	0.05	559
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.26	0.16	1.98	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	407	407	0.01	0.02	0.61	414

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.03	0.36	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	67.4	67.4	< 0.005	< 0.005	0.10	68.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.169. Architectural Coating (2028) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.1
Architectural Coatings	9.83	9.83	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.67
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.39	0.37	0.17	3.14	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	608	608	0.02	0.03	1.79	617
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.35	0.32	0.22	2.53	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	540	540	0.02	0.03	0.05	548
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.23	0.14	1.85	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	400	400	0.01	0.02	0.55	407

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.03	0.34	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	66.3	66.3	< 0.005	< 0.005	0.09	67.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.171. Architectural Coating (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.0
Architectural Coatings	9.81	9.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.66
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.37	0.34	0.15	2.93	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	596	596	0.01	0.03	1.59	606
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.33	0.30	0.20	2.37	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	530	530	0.02	0.03	0.04	539
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.22	0.13	1.71	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	392	392	0.01	0.02	0.49	398

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.31	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	64.9	64.9	< 0.005	< 0.005	0.08	65.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.173. Architectural Coating (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.0
Architectural Coatings	9.81	9.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.66
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.35	0.32	0.15	2.72	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	586	586	0.01	0.01	1.42	590
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.28	0.18	2.21	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	521	521	0.02	0.03	0.04	529
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.21	0.11	1.60	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	385	385	0.01	0.02	0.44	391

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.29	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	63.7	63.7	< 0.005	< 0.005	0.07	64.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.175. Architectural Coating (2031) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.0
Architectural Coatings	9.81	9.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.66
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.30	0.13	2.55	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	576	576	0.01	0.01	1.25	580
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.27	0.16	2.05	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	512	512	0.02	0.03	0.03	520
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.20	0.11	1.49	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	379	379	0.01	0.01	0.39	381

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.02	0.27	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	62.7	62.7	< 0.005	< 0.005	0.06	63.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.177. Architectural Coating (2032) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.1
Architectural Coatings	9.83	9.83	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.67
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.28	0.13	2.40	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	567	567	0.01	0.01	1.10	571
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.26	0.15	1.92	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	504	504	0.02	0.01	0.03	507
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.19	0.18	0.09	1.41	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	374	374	0.01	0.01	0.34	376

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.26	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	61.9	61.9	< 0.005	< 0.005	0.06	62.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.179. Architectural Coating (2033) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.0
Architectural Coatings	9.81	9.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.66
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.28	0.27	0.11	2.26	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	559	559	0.01	0.01	0.96	563
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.25	0.13	1.82	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	497	497	0.02	0.01	0.02	500
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.18	0.09	1.33	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	368	368	0.01	0.01	0.30	370

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.24	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	60.9	60.9	< 0.005	< 0.005	0.05	61.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.181. Architectural Coating (2034) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.0
Architectural Coatings	9.81	9.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.66
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.26	0.26	0.10	2.16	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	552	552	0.01	0.01	0.83	555
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.24	0.23	0.13	1.72	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	491	491	0.01	0.01	0.02	493
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.17	0.09	1.26	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	363	363	0.01	0.01	0.26	365

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.23	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	60.1	60.1	< 0.005	< 0.005	0.04	60.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.183. Architectural Coating (2035) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.0
Architectural Coatings	9.81	9.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.66
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.25	0.10	2.06	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	546	546	0.01	0.01	0.72	549
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.22	0.13	1.64	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	485	485	0.01	0.01	0.02	487
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.17	0.16	0.08	1.20	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	359	359	0.01	0.01	0.22	361

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.01	0.22	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	59.4	59.4	< 0.005	< 0.005	0.04	59.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.185. Architectural Coating (2036) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.1
Architectural Coatings	9.83	9.83	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.67
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.25	0.24	0.10	1.96	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	540	540	0.01	0.01	0.61	543
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.22	0.11	1.56	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	480	480	0.01	0.01	0.02	482
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.16	0.07	1.14	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	356	356	0.01	0.01	0.19	358

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.01	0.21	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	58.9	58.9	< 0.005	< 0.005	0.03	59.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.187. Architectural Coating (2037) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.0
Architectural Coatings	9.81	9.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.66
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.23	0.23	0.08	1.89	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	535	535	0.01	0.01	0.52	538
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.20	0.11	1.50	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	475	475	0.01	0.01	0.01	478
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.14	0.07	1.09	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	352	352	0.01	0.01	0.16	353

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.01	0.20	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	58.2	58.2	< 0.005	< 0.005	0.03	58.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.189. Architectural Coating (2038) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.0	10.0	< 0.005	< 0.005	—	10.0
Architectural Coatings	9.81	9.81	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.66	1.66	< 0.005	< 0.005	—	1.66
Architectural Coatings	1.79	1.79	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.22	0.20	0.08	1.83	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	530	530	0.01	0.01	0.44	533
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.19	0.11	1.44	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	471	471	0.01	0.01	0.01	474
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.13	0.07	1.05	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	348	348	0.01	0.01	0.14	350

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.01	0.19	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	57.7	57.7	< 0.005	< 0.005	0.02	58.0
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.191. Architectural Coating (2039) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.0	14.0	< 0.005	< 0.005	—	14.1
Architectural Coatings	13.7	13.7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.99	9.99	< 0.005	< 0.005	—	10.0
Architectural Coatings	9.78	9.78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.65	1.65	< 0.005	< 0.005	—	1.66
Architectural Coatings	1.78	1.78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.21	0.19	0.08	1.78	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	526	526	0.01	0.01	0.37	529
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.20	0.18	0.10	1.39	0.00	0.00	0.58	0.58	0.00	0.14	0.14	—	468	468	0.01	0.01	0.01	470
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.13	0.06	1.02	0.00	0.00	0.41	0.41	0.00	0.10	0.10	—	345	345	0.01	0.01	0.11	347

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.01	0.19	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	57.1	57.1	< 0.005	< 0.005	0.02	57.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/1/2024	12/30/2039	5.00	4,175	—
Site Preparation	Site Preparation	1/1/2024	12/30/2039	5.00	4,175	—
Grading	Grading	1/1/2024	12/30/2039	5.00	4,175	—
Building Construction	Building Construction	1/1/2024	12/30/2039	5.00	4,175	—

Paving	Paving	1/1/2024	12/30/2039	5.00	4,175	—
Architectural Coating	Architectural Coating	1/1/2024	12/30/2039	5.00	4,175	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	0.77	367	0.40
Demolition	Excavators	Diesel	Average	3.00	0.77	36.0	0.38
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	0.77	33.0	0.73
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	0.46	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	0.46	84.0	0.37
Grading	Graders	Diesel	Average	1.00	1.19	148	0.41
Grading	Excavators	Diesel	Average	2.00	1.19	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	1.19	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	1.19	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	1.19	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	11.9	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	11.9	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	10.4	367	0.29
Building Construction	Welders	Diesel	Average	1.00	11.9	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	10.4	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	0.84	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	0.84	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	0.84	36.0	0.38

Architectural Coating	Air Compressors	Diesel	Average	1.00	0.63	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	1.44	7.70	LDA,LDT1,LDT2
Demolition	Vendor	—	4.00	HHDT,MHDT
Demolition	Hauling	0.92	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	—	—	—	—
Site Preparation	Worker	1.01	7.70	LDA,LDT1,LDT2
Site Preparation	Vendor	—	4.00	HHDT,MHDT
Site Preparation	Hauling	35.6	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	2.97	7.70	LDA,LDT1,LDT2
Grading	Vendor	—	4.00	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	7,509	7.70	LDA,LDT1,LDT2
Building Construction	Vendor	3,016	4.00	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—

Paving	Worker	1.58	7.70	LDA,LDT1,LDT2
Paving	Vendor	—	4.00	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	107	7.70	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	4.00	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	359,336	119,779	18,184,500	6,061,500	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	334,836	—
Site Preparation	—	1,188,705	360	0.00	—
Grading	—	—	1,863	0.00	—
Paving	0.00	0.00	0.00	0.00	70.6

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	1.00	0%
Supermarket	4.97	100%
Office Park	3.32	100%
Industrial Park	24.8	100%
General Heavy Industry	35.9	100%
General Office Building	0.57	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005
2029	0.00	204	0.03	< 0.005
2030	0.00	204	0.03	< 0.005
2031	0.00	204	0.03	< 0.005
2032	0.00	204	0.03	< 0.005
2033	0.00	204	0.03	< 0.005
2034	0.00	204	0.03	< 0.005
2035	0.00	204	0.03	< 0.005
2036	0.00	204	0.03	< 0.005

2037	0.00	204	0.03	< 0.005
2038	0.00	204	0.03	< 0.005
2039	0.00	204	0.03	< 0.005
2024	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit

Temperature and Extreme Heat	24.3	annual days of extreme heat
Extreme Precipitation	2.25	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	82.5
AQ-PM	97.7
AQ-DPM	98.7
Drinking Water	84.4
Lead Risk Housing	96.5

Pesticides	42.9
Toxic Releases	92.2
Traffic	60.4
Effect Indicators	—
CleanUp Sites	98.2
Groundwater	91.2
Haz Waste Facilities/Generators	96.3
Impaired Water Bodies	0.00
Solid Waste	80.0
Sensitive Population	—
Asthma	97.2
Cardio-vascular	92.2
Low Birth Weights	95.6
Socioeconomic Factor Indicators	—
Education	93.2
Housing	91.0
Linguistic	79.4
Poverty	98.9
Unemployment	93.8

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	2.75888618
Employed	4.709354549
Median HI	5.273963814

Education	—
Bachelor's or higher	9.547029385
High school enrollment	6.108045682
Preschool enrollment	17.00243809
Transportation	—
Auto Access	5.915565251
Active commuting	28.28179135
Social	—
2-parent households	31.82343128
Voting	0.936738098
Neighborhood	—
Alcohol availability	36.78942641
Park access	21.85294495
Retail density	40.81868343
Supermarket access	11.86962659
Tree canopy	46.63159245
Housing	—
Homeownership	31.38714231
Housing habitability	12.42140382
Low-inc homeowner severe housing cost burden	21.429488
Low-inc renter severe housing cost burden	32.77300141
Uncrowded housing	14.69267291
Health Outcomes	—
Insured adults	10.18863082
Arthritis	14.6
Asthma ER Admissions	2.3
High Blood Pressure	5.0

Cancer (excluding skin)	77.2
Asthma	1.3
Coronary Heart Disease	5.2
Chronic Obstructive Pulmonary Disease	2.6
Diagnosed Diabetes	1.8
Life Expectancy at Birth	11.9
Cognitively Disabled	7.6
Physically Disabled	8.5
Heart Attack ER Admissions	3.7
Mental Health Not Good	2.2
Chronic Kidney Disease	2.7
Obesity	1.5
Pedestrian Injuries	97.2
Physical Health Not Good	2.0
Stroke	1.8
Health Risk Behaviors	—
Binge Drinking	84.3
Current Smoker	4.4
No Leisure Time for Physical Activity	1.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	7.3
Elderly	70.0
English Speaking	21.6
Foreign-born	58.6
Outdoor Workers	2.7

Climate Change Adaptive Capacity	—
Impervious Surface Cover	50.0
Traffic Density	62.8
Traffic Access	0.0
Other Indices	—
Hardship	96.8
Other Decision Support	—
2016 Voting	1.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	100
Healthy Places Index Score for Project Location (b)	0.00
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	Central Fresno

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Modified to evenly distrubute all the construction phases between 2024 and 2040 (4175 work days).
Construction: Paving	Consistent with Draft EIR analysis, residential paved area is CalEEMod default and other land uses have 25% of lot acreage paved.
Construction: Off-Road Equipment	Scaled the default hours/day for each phase based on the corresponding adjustment factor to normalize the default schedule for each phase over 4175 work days.
Construction: Trips and VMT	Scaled default worker and vendor trips for each phase based on the corresponding adjustment factor to normalize the default schedule for each phase over 4175 work days.

Patrick Sutton, P.E.

Principal Environmental Engineer

Areas of Expertise

Air Quality, GHGs, Noise, Hazardous Materials, Geology, and Hydrology

Education

M.S., Civil and Environmental Engineering, University of California – Davis

B.S., Environmental Science, Dickinson College

Registration

Professional Engineer No. 13609 (RI)

Years of Experience

20 Years

Patrick Sutton is an environmental engineer who specializes in the assessment of hazardous materials released into the environment. Mr. Sutton prepares technical reports in support of environmental review, such as Phase I/II Environmental Site Investigations, Air Quality Reports, and Health Risk Assessments. He has prepared numerous CEQA/NEPA evaluations for air quality, GHGs, noise, energy, geology, hazardous materials, and water quality related to residential, commercial, and industrial projects, as well as large infrastructure developments. His proficiency in a wide range of modeling software (AERMOD, CalEEMod, RCEM, CT-EMFAC) as well as relational databases, GIS, and graphics design allows him to thoroughly and efficiently assess and mitigate environmental concerns.

For mixed-use development projects, Mr. Sutton has prepared health risk assessments for sensitive receptors exposed to toxic air contaminants based on air dispersion modeling. For large transportation improvement projects, Mr. Sutton has prepared air quality and hazardous materials technical reports in accordance with Caltrans requirements. The air quality assessments include the evaluation of criteria air pollutants, mobile source air toxics, and GHG emissions to support environmental review of the project under CEQA/NEPA and to determine conformity with the State Implementation Plan. The hazardous materials investigations include sampling and statistically analysis of aerially-deposited lead adjacent to highway corridors. Mr. Sutton is also an active member of ASTM International and is the author of the Standard Practice for Low-Flow Purging and Sampling Used for Groundwater Monitoring.

Project Experience

Oakland Downtown Specific Plan EIR. Prepared a program- and project-level Air Quality and GHG Emissions analysis. Developed a mitigation measure with performance standards to ensure GHG emissions from future projects comply with the Citywide 2030 GHG reduction target.

I-680 Express Lanes from SR 84 to Alcosta Boulevard Project. Prepared Initial Site Assessment and Preliminary Site Investigation to evaluate contaminants of potential concern in soil and groundwater. Prepared Air Quality Report to determine the project's conformity to federal air quality regulations and to support environmental review of the project under CEQA and NEPA.

Altamont Corridor Expressway (ACE/Forward) Project EIR/EIS. Prepared a program- and project-level Hazardous Materials analysis for over 120 miles of railroad corridor from San Jose to Merced. Hazardous materials concerns, such as release sites, petroleum pipelines, agricultural pesticides, and nearby school sites were evaluated in GIS.

Stonegate Residential Subdivision EIR. Prepared a project-level Hydrology and Water Quality analysis for a residential development located within the 100-year floodplain. The proposed project included modifications to existing levees and flood channels.

BART Silicon Valley Extension Project. Prepared Initial Site Assessment and Hazardous Materials EIS/EIR section for extending 6 miles of proposed BART service through the Cities of San Jose and Santa Clara.

EXHIBIT B

Pilot Study of High Performance Air Filtration for Classrooms Applications

Draft report: October 2009

Prepared by:

South Coast Air Quality Management District (AQMD)
[redacted] Diamond Bar, CA 91765

IQAir North America
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ABSTRACT

A pilot study was conducted between April and December 2008 to investigate the effectiveness of three different air purification systems in reducing the exposure of children to air contaminants inside nine classrooms at three Southern California schools (three classrooms per school). Two of them, Del Amo Elementary and Dominguez Elementary, are part of the Los Angeles Unified School District (LAUSD), while the third school, Hudson Elementary, is part of the Long Beach Unified School District (LBUSD). Continuous and integrated measurements were conducted to monitor the indoor and outdoor concentrations of the following species: ultrafine particles (UFP), particulate matter mass (both $PM_{2.5}$ and PM_{10}), black carbon (BC), and volatile organic compounds (VOCs). An HVAC-based high-performance panel filter (HP-PF), a register-based air purifier (RS), and a standalone system (SA) were tested alone and in different combinations for their ability to remove the monitored pollutants from the indoor air.

Overall, the coupling between a register system and a high-performance panel filter (RS + HP-PF) was the most effective solution for reducing the indoor concentrations of BC, UFP, and $PM_{2.5}$, with study average removal efficiencies varying from 87 to 96%. When using a HP-PF alone, reductions close to 90% were also obtained. Due to re-suspension of dust and other relatively large particles from common indoor activities such as walking and cleaning, the removal performance of PM_{10} was lower than that of other particle measurements (68% when using a RS + HP-PF combination). In all cases, air quality conditions were improved substantially with respect to the corresponding baseline (pre-existing) conditions, when removal efficiencies for the different particulate pollutants varied between 20% and 50%. Data obtained from the analysis of canister samples collected at Dominguez elementary showed that the total VOC removal performance of the register system (RS) was 28%. These values were substantially higher for the standalone unit (SA) operated with and without the use of the HVAC system (58 and 86%, respectively). Because gas-absorbing media may be subject to saturation after experiencing high short-term concentrations, the effectiveness, lifetime, costs, benefits, and maintenance of the gas removal systems tested in this pilot study must be further assessed before conclusions and recommendations can be made.

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INTRODUCTION

Background

Numerous epidemiological and toxicological studies have found positive associations between exposure to atmospheric particulate matter (PM) and adverse health effects (Pope and Dockery, 2006; Environmental Protection Agency Integrated Science Assessments, 2009). Although air quality standards have been established for outdoor ambient environments, a significant portion of human exposures to PM occurs indoors, where people spend around 85-90% of their time. Hence, it is important to understand and reduce the sources of both indoor and outdoor PM. Indoor PM consists of outdoor particles that have infiltrated indoors, particles emitted indoors (primary), and particles formed indoors (secondary) from precursors emitted both indoors and outdoors.

Children are regarded as particularly susceptible to potential health hazards related to PM exposure, which include asthma, lung inflammation, allergies and other types of respiratory and cardiovascular problems. School-aged children spend approximately 30% of their day in classrooms. For this reason, minimizing the concentration of PM (as well as that of other air contaminants) inside classrooms is important, especially at schools located in close proximity to roadways and other substantial sources of air pollution. One approach is the installation of panel filters inside the Heating, Ventilating, and Air Conditioning (HVAC) system. Common medium performance filters with a Minimum Performance Reporting Value (MERV) of 7 (those installed in most commercial buildings) remove only a small fraction of the particles with aerodynamic diameters lower than 0.3 μm, although higher removal efficiencies are generally achieved for larger particles. Diesel particulate matter, which is considered an air toxic, generally consists of particles less than 0.3 μm. New evidence also suggests that ultrafine particles, less than 0.1 μm by definition, have harmful health effects beyond those caused by particle mass.

Filtration in classrooms presents some unique challenges. The older HVAC systems that exist in older schools were not designed with air filtration in mind. The classroom is a noise sensitive environment, so filtration systems must meet strict decibel limits when in operation. Classrooms often have high ventilation rates with doors and windows that are frequently open to outside air. Finally, classrooms are large, densely occupied spaces with a lot of activity that can lead to indoor generation of particles and other pollutants.

Objectives and Study Design

The objective of this pilot study was to investigate the effectiveness of three different air purification systems/solutions in reducing the exposure of children to outdoor-infiltrated and indoor-generated air contaminants inside nine classrooms at three Southern California schools. To this end, the South Coast Air Quality Management District (SCAQMD; 21865 Copley Dr, Diamond Bar, CA 91765) worked in close collaboration with IQAir (IQAir North America, 10440 Ontiveros Place, Santa Fe Springs, CA 90670), a company that specializes in air purification solutions, and Thermal Comfort Systems (Thermal Comfort Systems Inc., 8038 Andasol Ave., Northridge, CA 91325), an HVAC contractor. Of particular interest was the removal of various sizes and types of particulate matter, especially the smaller sizes associated with diesel engine exhaust. Solutions for removing gaseous air contaminants that may be air toxics or cause odors were also examined. The types of pollutants for which the performance of the installed systems were tested are described below:

- Ultra-fine particles (UFPs; particles with an aerodynamic diameter less than 0.1 μm): UFP are primarily produced from the combustion of fossil fuels (e.g. motor-vehicle emissions). Recent health studies suggest that UFPs are more toxic than fine particles, possibly due to their chemical composition and their ability to penetrate cell walls, enter the blood stream, and translocate to organs throughout the body. UFP are currently unregulated in the United States.

- Fine PM ($PM_{2.5}$; particles with an aerodynamic diameter less than 2.5 μm): Sources of $PM_{2.5}$ include emissions from motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and other combustion activities. Fine particles have well established health effects, including multiple adverse respiratory and cardiovascular outcomes. $PM_{2.5}$ is a U.S. Environmental Protection Agency (U.S. EPA) criteria pollutant for which there exist National Ambient Air Quality Standards (NAAQS).

- PM_{10} (particles with an aerodynamic diameter less than 10 μm): PM_{10} includes all $PM_{2.5}$ particles, but also larger particles between 2.5 and 10 μm in diameter. Sources of these coarse particles include crushing or grinding operations, re-suspension of dust from vehicles traveling on roads, and other mechanical processes. PM_{10} is also a U.S. Environmental Protection Agency (U.S. EPA) criteria pollutant and also has associated National Ambient Air Quality Standards (NAAQS).

- Black Carbon (BC; sometimes referred to as soot; related closely to elemental carbon): BC is a component of PM and is formed through the incomplete combustion of fossil fuels and biomass, and is emitted from both natural and anthropogenic sources. Most atmospheric BC is in the fine or ultra-fine particle size ranges. The majority of BC in Southern California comes from diesel particulate matter (DPM) emissions. DPM is considered an air toxic by the State of California, and the SCAQMD has recently estimated that DPM accounts for more than 80% of the total cancer risk from air toxics in the South Coast Air Basin (MATES III Study, 2008).

- Volatile Organic Compounds (VOCs): these gases are emitted by a variety of evaporative processes and combustion sources, including paints, cleaning supplies, pesticides, building materials, household products, refineries, and mobile sources. Given some of the indoor sources, concentrations of many VOCs may be much higher indoors than outdoors (Jia et al., 2007; Bruno et al., 2008). Gasoline and diesel fuels are also important sources of VOCs. Exposure to many of these organic contaminants has also been associated with a wide array of toxic health effects.

METHODS

Schools and Classrooms Characteristics

Three elementary schools (all located in Southern Los Angeles County in the Carson-Long Beach area) were selected for this pilot study. Two of them, Del Amo Elementary and Dominguez Elementary, are part of the Los Angeles Unified School District (LAUSD), while the third school, Hudson Elementary, is part of the Long Beach Unified School District (LBUSD). All three schools are in close proximity to at least three large refineries and several heavily trafficked highways and freeways including the I-110, I-405, I-710, and CA-103 (Figure 1). The Los Angeles and Long Beach Port complexes and the Union Pacific Railroad Intermodal Container Transfer Facility (UPRR ICTF) are other major emissions sources in the area. The presence of these important emissions sources has lead to local concerns about the air quality in the surrounding communities.

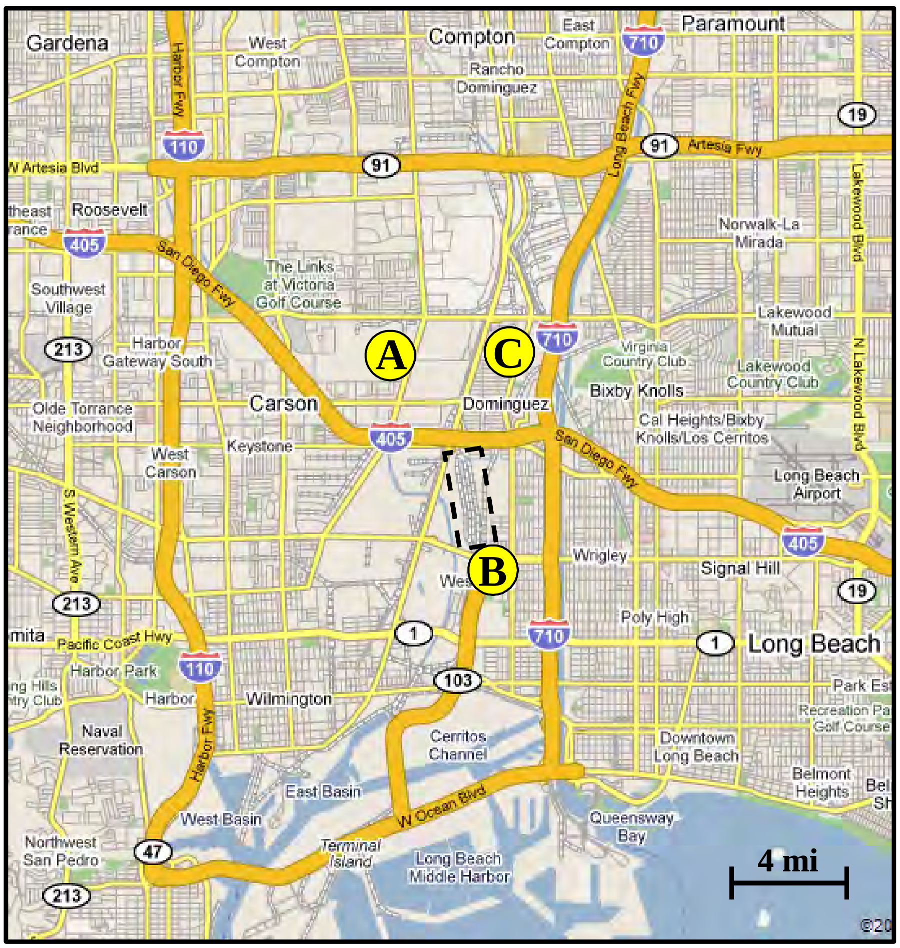


Figure 1. Map of the study area as obtained from Google Earth (Google Inc. 1400 Amphitheatre Pkwy, Mountain View, CA 94043). The yellow circles indicate the locations of the three elementary schools participating in this pilot study: Del Amo (A), Hudson (B), and Dominguez (C). The Union Pacific Railroad Intermodal Container Transfer Facility is marked by the black rectangle

At each of the three elementary schools, three classrooms with similar structural characteristics and ventilation conditions were selected to provide reproducible test conditions for the various air purification systems deployed. All classrooms (varying between 7533 and 9196 ft^3 in size) already included forced-air HVAC systems, although windows and doors were regularly used for additional ventilation. The most relevant characteristics of all nine classrooms are listed in Table 1, along with their respective identification numbers.

Table 1. Structural characteristics and ventilation conditions of the nine classrooms selected for this pilot study

	SCHOOL								
	DEL AMO			HUDSON			DOMINGUEZ		
Classroom ID	DA-6	DA-7	DA-8	H-11	H-15	H-52	DZ-7	DZ-9	DZ-11
Total Number of Occupants	18	19	22	21	11	17	28	28	29
Room Size (ft)	38×24×10	38×24×10	38×24×10	30×30×9	30×30×9	31×27×9	38×22×11	38×22×11	38×22×11
Room Volume (ft^3)	9120	9120	9120	8100	8100	7533	9196	9196	9196
HVAC System Type	DW-M*	DW-M*	DW-M*	DM-ZR**	DM-ZR**	DR***	DR***	DR***	DR***
HVAC Panel Filter Type	2" Pleated	2" Pleated	2" Pleated	2" Pleated	2" Pleated	2" Fiberglass	1" Pleated	1" Pleated	1" Pleated
Filter Rating	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	Unclassified	MERV 7	MERV 7	MERV 7
HVAC Operation	Manual	Manual	Manual	Automatic	Automatic	Manual	Manual	Manual	Manual
Number of Supply Vents	1	1	1	1	1	4	3	3	3
Supplied Airflow# (cfm)	1200	1200	1250	840	903	1236	1642	1681	1772
Air Exchange Rate	7.9	7.9	8.2	6.2	6.7	9.8	10.7	11.0	11.5

*DW-M = Ducted Wall-Mount
**DM-ZR = Ducted Multi-Zone Rooftop
***DR = Ducted Rooftop
#With existing panel filter

Prior to beginning this study, none of the selected classrooms featured any specific air purification device other than one or more medium performance panel filters (MERV 7) installed inside the respective HVAC systems. The typical replacement interval for these air filters is approximately three months according to schools schedules. The primary purpose of this panel filter is to remove coarser particles and dust to protect the HVAC system's heating and cooling coils. These filters generally provide little or no removal of smaller particles or gaseous pollutants.

Air Purification Solutions

Three different air purification solutions were tested for their ability to remove UFP, $PM_{2.5}$, PM_{10}, BC and, where possible, VOCs from the air stream:

a) an HVAC-based high-performance panel filter (**HP-PF**),

b) a register-based air purifier (here referred to as register system or **RS**), and

c) a standalone system (**SA**).

All air purification solutions were provided, installed, and maintained by IQAir, and their primary features are summarized in Table 2.

Table 2. Summary of the primary features of the three air purification devices adopted for this pilot study: high-performance panel filter (HP-PF), register system (RS), and standalone system (SA)

	High-performance Panel Filter (PF)	Register Sysyem (RS)	Standalone System (SA)
High UFP and $PM_{2.5}$ Filtration Efficiency	√	√	√
High Gas Phase Filtration Efficiency	0	√	√
Low Pressure Drop / High Air Flow	√	√	√
Low Noise	√	√	√
Low Maintenance	√	√	√
High Classroom Compatibility	√	√	√
No HVAC System Retrofit	√	0	√
Minimal Impact on Classroom Space	√	√	√
Low Power Consumption	N/A	N/A	√
Tamper-Resistant Design	N/A	N/A	√

√ = featured
0 = not featured

High-performance panel filter (HP-PF)

In most classrooms, the existing medium performance panel filters were replaced with one or more HP-PFs as shown to in Figure 2.

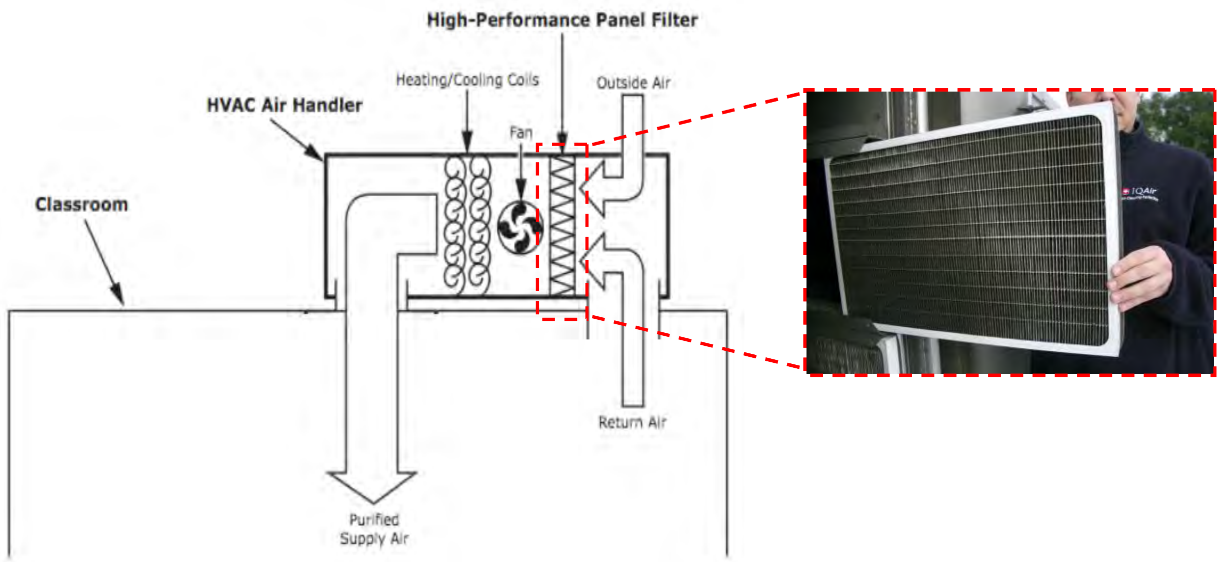


Figure 2. Schematic of a typical HVAC system. The picture on the right-hand side shows a typical high-performance panel filter (HP-PF) after several months of usage

Compared to standard/conventional medium performance MERV filters, the high-performance panel filters used for this pilot study are twice as thick (2" in depth) and have a much larger filter surface area (five to nine times larger). Due to the increased surface area and the special filter material used, they generally have similar air resistance properties as conventional filters and, thus, do not act to reduce the air flow through the HVAC system. Also, due to the increased surface area and specific design, these media have the potential to last longer than conventional filters before replacement is required. Because these filters are manufactured using a proprietary "nano-fiber" technology, their ability to remove UFPs and BC from the air stream is also higher. Table 3 shows a comparison between the characteristics of several conventional MERV filters available for residential and commercial applications and the HP-PF employed in this pilot study.

Table 3. Comparison between the main characteristics of several conventional MERV filters and the high-performance panel filters (HP-PF) tested in this study

Panel Filter Type	Filter Rating	Filter Efficiency (%)[1] at 0.3 µm	at 1.0 µm	Pressure Drop (in w.g.)[2]	Media Area (ft^2)	Filter Life (months)	Filter Cost ($)	Annual Filter Cost ($)	Annual Maintenance Cost ($)[3]	Total Annual Cost ($)
CONVENTIONAL PANEL FILTERS										
Low Efficiency 2" Fiberglass	(unrated)	1	10	0.28	4.0	3	3 to 5	12 to 20	50	62 to 70
Medium Efficiency 1" Pleated	MERV 7	3	25	0.48	7.5	3	5 to 7	20 to 28	50	70 to 78
Medium Efficiency 2" Pleated	MERV 7	5	35	0.30	11.8	3	7 to 10	28 to 40	50	78 to 90
High Efficiency 2" Pleated	MERV 11	15	58	0.39	17.8	3	13 to 20	52 to 80	50	102 to 130
High Efficiency 2" Pleated	MERV 13	30	85	0.41	21.1	3	25 to 40	100 to 160	50	150 to 210
High Efficiency 2" Mini-Pleat	MERV 16	90	99	2.00	55.0	3	80	320	50	370
PILOT STUDY HIGH-PERFORMANCE PANEL FILTER										
High-performance 2" Mini-Pleat	MERV 16	93	99	0.38	60.0	6 to 12	120	120 to 240	13 to 25	133 to 245

Data are based on a nominal 24" × 24" filter size

[1]Typical minimum efficiency at rated face velocity of 492 fpm

[2]Typical pressure drop of a new filter; based on a face velocity of 492 fpm

[3]Based on an estimated maintenance time of 15 min per filter change (at $50/hr)

Register system (RS)

This device is installed directly on the HVAC register, where the air supply enters the room. The unit is equipped with a "nano-technology" filter media for the removal of PM and high-capacity gas phase filter cartridges to eliminate certain gaseous pollutants from the air stream (e.g. VOCs) (Figure 3). This particular design allows for a longer contact time between the filtration media and the gaseous pollutants than would be permitted by using an activated carbon panel filter in the HVAC system. Nevertheless, the RS does not reduce the overall HVAC system airflow if installed by a trained specialist.

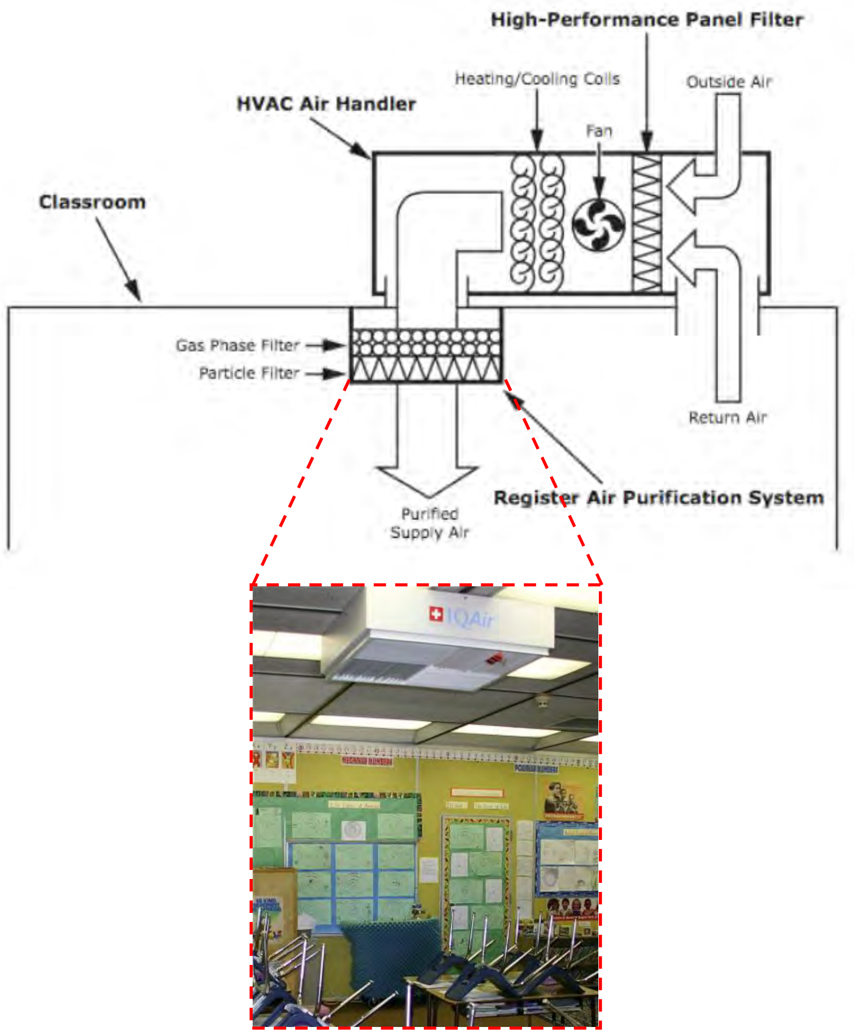


Figure 3. Schematic of the register system (RS) as installed in one of the study classrooms. A high-performance panel filter (HP-PF) may also be installed in the HVAC air handler to provide additional particle filtration

Standalone system (SA)

A standalone system (SA) is a self-contained air cleaning device that operates independently of a classroom's HVAC system. This air filtration system is 6 feet tall and has a footprint of about 4 ft^2 (Figure 4). The SA is tamper proof, runs on a standard power circuit, and is built with an energy efficient fan, located inside a specially designed box for ultra quiet operation (<45 db(A) at high airflow). Indoor air enters from the lower part of the system (about 6 inches off the ground) and passes, sequentially, through a large "nano-technology" filter media, for the removal of PM, and 12 high-capacity gas phase filter cartridges, for removal of the gaseous pollutants commonly found indoors (VOCs) (Figure 4).

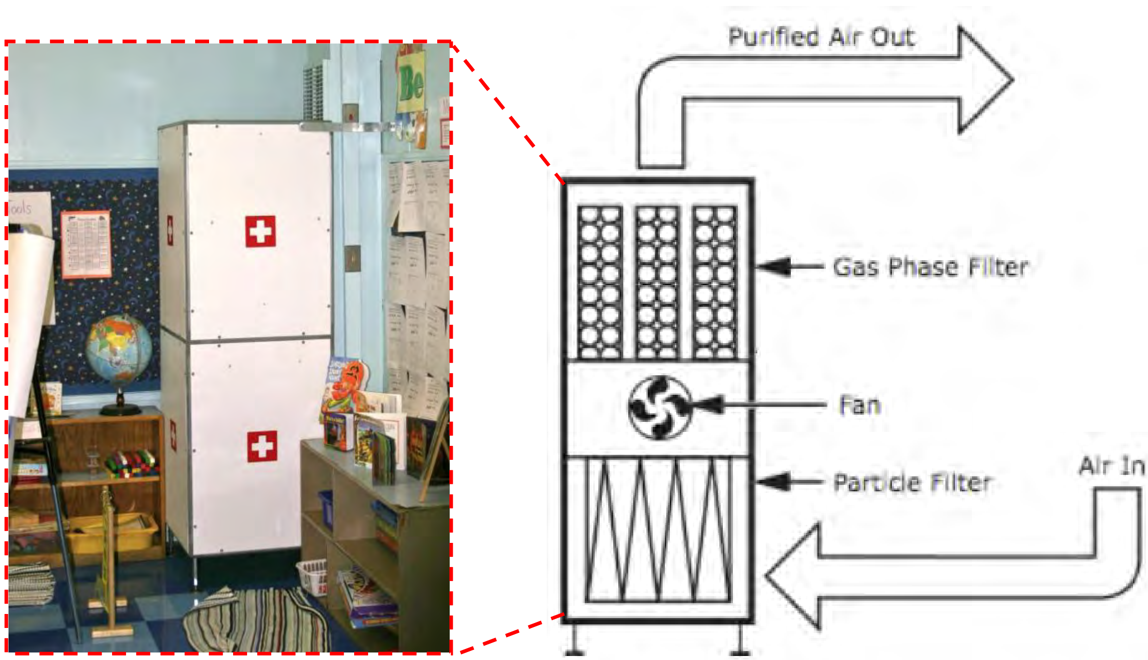


Figure 4. Schematic of the standalone system (SA) as installed in one of the classrooms

The main characteristics of the SA tested in this pilot study have been summarized in Table 4 and compared to those of other typical "residential" and "commercial" standalone units available on the market. A major design consideration for the SA was low noise. Many school districts have set a 45db(A) noise threshold for new in classroom equipment. At this noise level, available residential and commercial air purification devices offer less than two air changes per hour (ACH) in a typical classroom. This SA unit offers more than five ACH.

Table 4. Comparison between the main features of the standalone system used for this pilot study and those of other commercially available standalone air purifiers

	Residential Air Purifier	**Commercial Standalone**	**Pilot Study Standalone**
Particle Filtration Technology	Electronic / Media	Electronic / Media	Media
Removal Efficiency at 0.3 µm (%)	40 to 99	60 to 99	> 99
Maximum Airflow (cfm)	150 to 400	400 to 1200	1200
Airflow at 45 dB(A) (cfm)	25 to 100	100 to 200	800
Gas-phase Filtration Media (lb)	0.5 to 18	10 to 80	100
Price ($)	200 to 1,000	1,500 to 12,000	8,500
Price / CFM at 45 db(A) ($)	8 to 10	15 to 60	11
Classroom ACH at 45 db(A)*	0.2 to 0.7	0.7 to 1.3	5.3

*Air Changes per Hour (ACH) based on a 9000 ft^3 room

In-classroom configurations

Different combinations of the standalone system, HVAC-based high-performance panel filter, and register-based air purifier were used inside the studied classrooms to evaluate the performance of these air filtration devices:

1. High-performance panel filter alone: **HP-PF**
2. Register-based air purifier alone (RS). It should be noted that in some cases a conventional / medium performance panel filter (PF) was already installed inside the HVAC system prior to the beginning of the study: **RS+PF**
3. Register-based air purifier in conjunction with a high-performance panel filter: **RS + HP-PF**
4. Standalone system in classrooms with no HVAC running: **SA**
5. Standalone system in classrooms with a HVAC running, in which case a conventional / medium performance panel filter (PF) was already installed inside the HVAC system prior to the beginning of the study: **SA + PF**
6. Standalone system in conjunction with a high-performance panel filter: **SA + HP-PF**

A schematic representation of these six configurations is shown below (Figure 5).

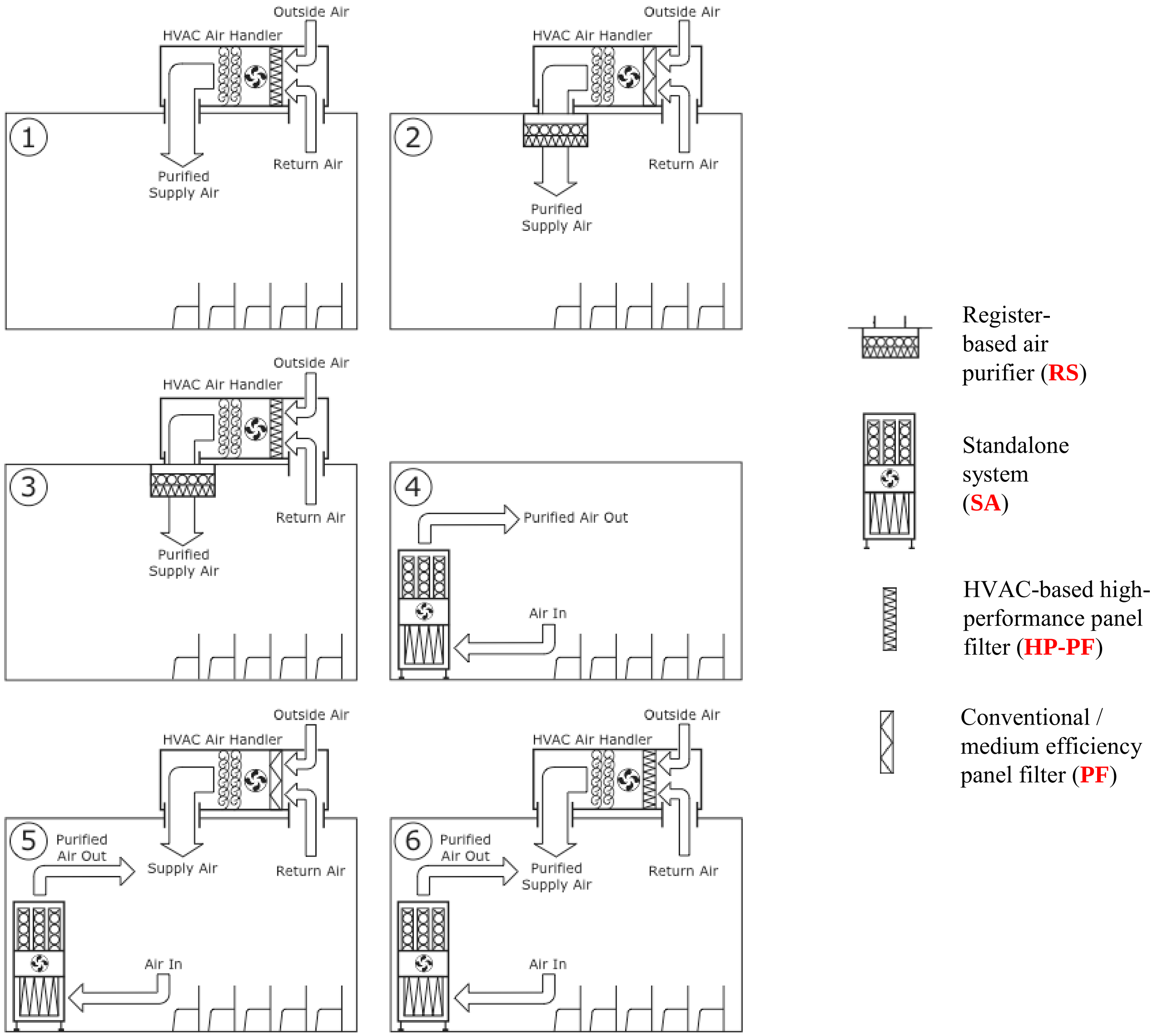


Figure 5. Schematic representation of the six air purification solutions tested in this pilot study

Indoor and outdoor measurements

Four mobile air quality monitoring stations were used to measure the indoor and outdoor concentrations of the targeted air pollutants. Each of these stations was comprised of a mobile cart supporting the following instruments (Figure 6):

- A portable Aethalometer (model AE42, Magee Scientific, 2800 Adeline St., Berkeley CA 94703) to provide continuous measurements of BC concentrations (ng/m^3)
- A water-based condensation particle counter (CPC model 3781, TSI, 500 Cardigan Road, Shoreview, MN 55126) to provide continuous measurements of the particle number concentration ($\#/cm^3$), an indicator of UFPs
- A laser particle counter (IQAir ParticleScan Pro): for determining the number concentration ($\#/cm^3$) of particles down to 0.3 μm in diameter. Since the $PM_{2.5}$ particle mass concentration in urban areas tends to be dominated by particles in the 0.3 – 1.0 μm range, this instrument provides a rough estimate of the $PM_{2.5}$ mass.
- A laser-based particle mass monitor (Aerocet 531 Aerosol Particulate Profiler, MetOne; 1600 Washington Blvd., Grants Pass, Oregon 97526): to provide continuous measurements of the mass concentration ($\mu g/m^3$) of both $PM_{2.5}$ and PM_{10}
- A low volume filter sampler (SKC Leland Legacy Sample Pump with SKC DPS Impactor, 863 Valley View Road Eighty Four, PA 15330): to collect time-integrated filter-based PM_{10} samples. Samples were collected at 10L/min on 47mm Teflon filters for the duration of a typical school day. These substrates were weighed before and after collection using a microbalance, and the PM_{10} concentration ($\mu g/m^3$) was calculated by dividing the difference in PM_{10} mass by the corresponding sampling volume. These gravimetric measurements were considered as primary indicators of the PM_{10} mass.
- 6L EPA TO-15 SUMMA canisters: to collect time-integrated air samples over the course of a typical school day. Samples were then analyzed by gas chromatography-mass spectrometry (GC-MS) to measure the concentrations of 61 specific VOCs (ppbv).

Figure 6. One of the four mobile stations used to monitor the indoor and outdoor concentrations of the targeted air pollutants

At each school, one air quality monitoring cart was set-up outside to sample outdoor air. The remaining three stations were placed indoors, one in each classroom, near one of the walls and just a few meters away from the students. Measurements were made away from all air conditioning vents to better represent mixed indoor air quality conditions as experienced by students and teachers. All sensors and inlets were approximately three feet above the floor, or about the height of a child's head when seated. The effectiveness of each of the tested air purification solutions was then evaluated by comparing the indoor concentrations of the targeted air pollutants to the corresponding outdoor levels. Baseline measurements were taken before installing any of the air purification solutions to estimate the pre-existing removal efficiencies of the classrooms before modification. Measurements that were found to be inaccurate or unrepresentative due to meteorological conditions (e.g. rain), improper cart placement, or instrument malfunction were not considered in the data analysis.

Before and after school hours, the four measurement stations were collocated in a storage room and the continuous instruments were run "side-by-side" to provide quality assurance of the measurements, to estimate the precision characteristics, and to identify any potential problems. Table 5 shows the specific air purification solutions that were tested inside each of the nine classrooms, along with the dates when all baseline and actual measurements were taken.

Table 5. Summary of the air purification solutions tested in each of the nine classrooms. The dates when all baseline and actual measurements were taken are also included

School / Class ID	Configurations Used			
	04 / 07-11 / 08	*04 / 14-18 / 08*	*04 / 21-25 / 08*	*04 / 28 / 08 to 05 / 02 / 08*
Del Amo / DA-6	Baseline	SA + PF	SA + PF	SA + HP-PF
Del Amo / DA-7	Baseline	RS	RS	RS
Del Amo / DA-8	Baseline	HP-PF	HP-PF	HP-PF
	05 / 12-16 / 08	*05 / 19-23 / 08*	*05 / 26-30 / 08*	*06 / 02-06 / 08*
Hudson / H-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-15	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-52	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
	11 / 18-26 / 08	*12 / 01-05 / 08*	*12 / 08-12 / 08*	*12 / 15-19 / 08*
Dominguez / DZ-7	Baseline	SA / SA + PF	SA + HP-PF	SA + HP-PF
Dominguez / DZ-9	Baseline	HP-PF	HP-PF	HP-PF
Dominguez / DZ-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

The three schools were tested one at a time from April to December 2008 for a total of over 150 valid measurement days across all schools and classrooms. The period of sampling was during regularly scheduled school hours, with minor adjustments for school schedule changes.

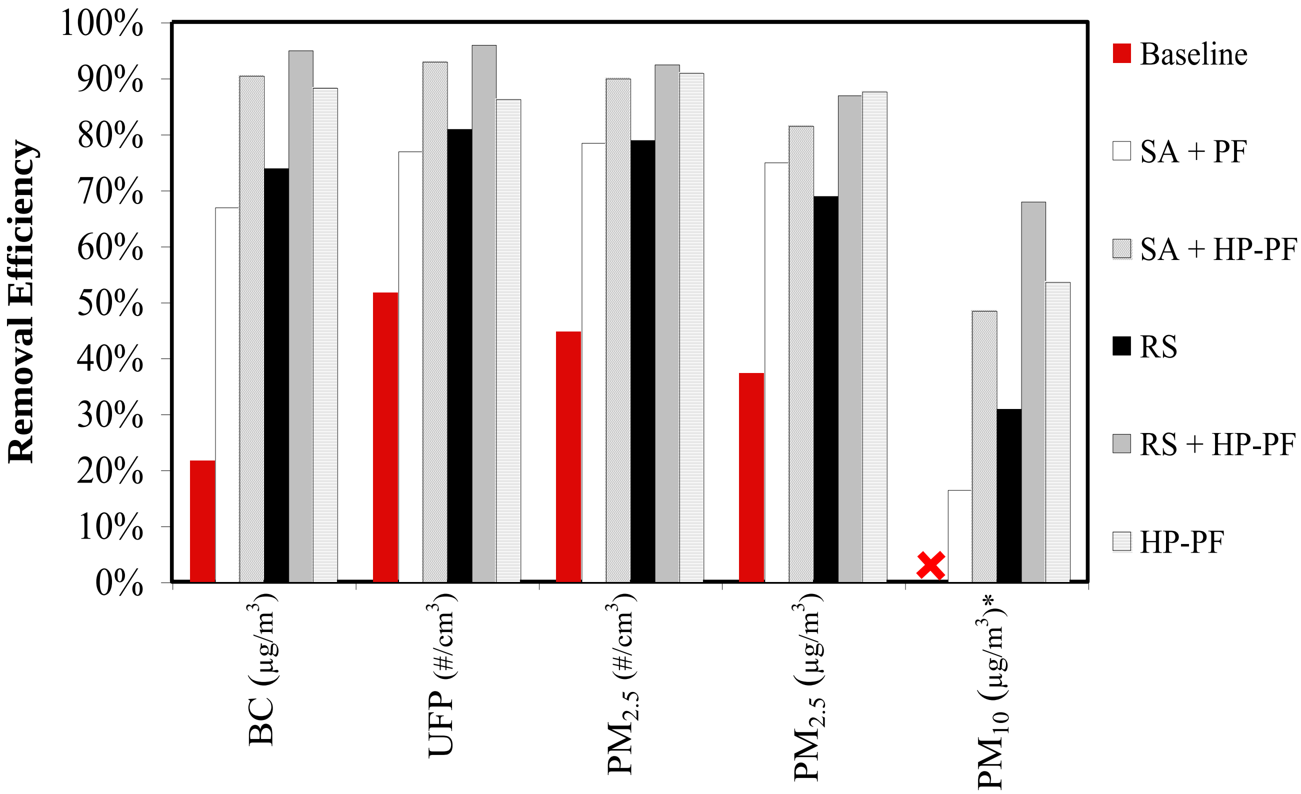
RESULTS AND DISCUSSION

Removal of PM and other particle species

Figure 7a summarizes the study average particle removal efficiencies (here defined as the percentage reduction in the indoor concentration of a particular pollutant relative to its concurrent outdoor concentration) achieved by the six air purification solutions. Indoor and outdoor mass and particle number concentrations were averaged over the duration of a typical school day and across all days, classrooms and schools. The corresponding study average particle removal efficiencies for each elementary school are shown in Figures 7b, 7c, and 7d for Del Amo, Hudson and Dominguez, respectively. Daily and weekly average indoor and outdoor concentrations of BC, UFP, $PM_{2.5}$ and PM_{10} at all schools and classrooms are provided in APPENDIX A, along with the corresponding average indoor/outdoor ratios and removal efficiencies.

Overall, the combination of a register system and a high-performance panel filter (RS + HP-PF) was the most effective solution for reducing the indoor concentrations of BC, UFP, and $PM_{2.5}$ (both mass and particle count), with average removal efficiencies varying from 87 to 96% (Figure 7a). Replacing a conventional HVAC-based panel filter (PF) with a HP-PF resulted in a substantial reduction in the indoor levels of all particulate pollutants inside all classrooms, especially when this high-performance panel filter was operated in conjunction with other air filtration devices. When using the HP-PF alone, the study average removal efficiencies were also close to 90% (88, 86, 91, and 88%, for BC, UFP, $PM_{2.5}$ count, and $PM_{2.5}$ mass, respectively). These average values are significantly higher than baseline (pre-existing) conditions, when removal efficiencies for the different pollutants were only about 20-50%.

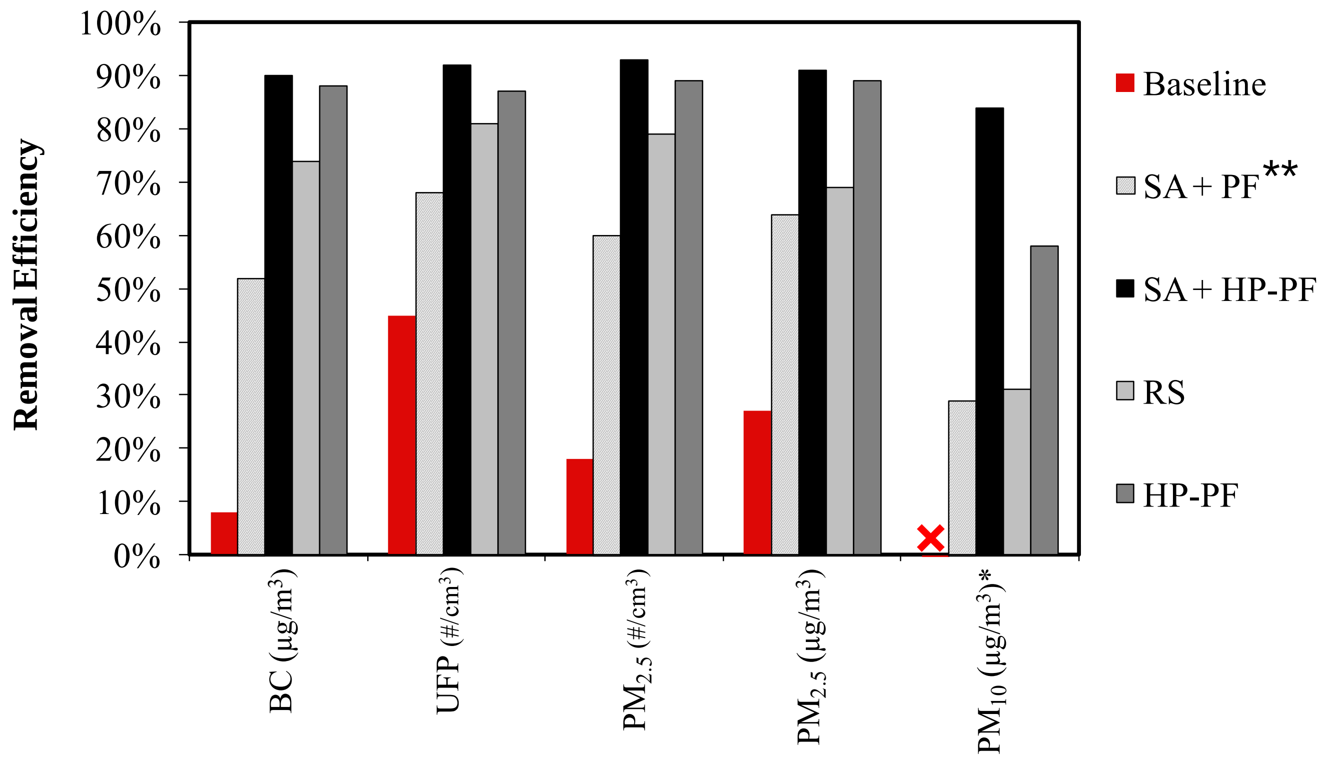
a) **ALL CLASSROOMS AT ALL SCHOOLS**



* From gravimetric / filter measurements

✕ The PM_{10} concentration was higher indoors than outdoors due to indoor sources

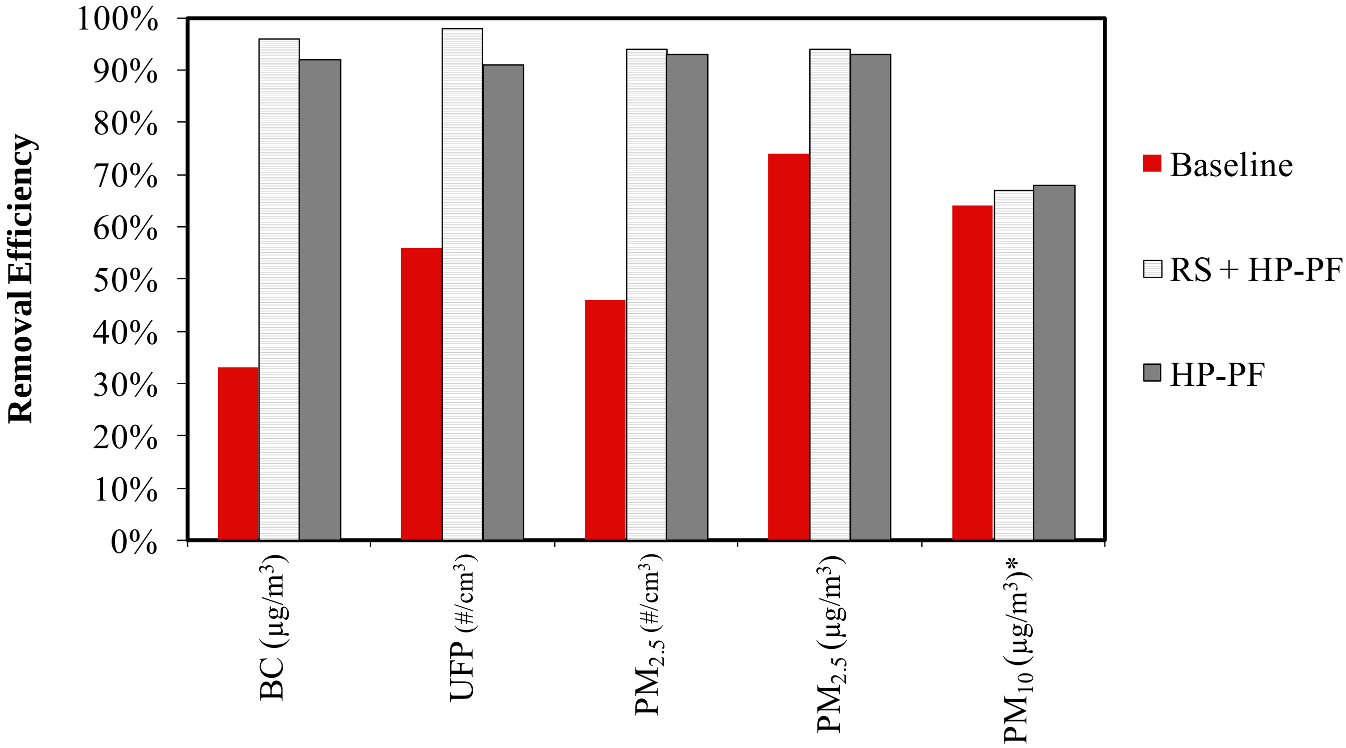
b) **DEL AMO ELEMENTARY SCHOOL**



* From gravimetric / filter measurements ** With HVAC

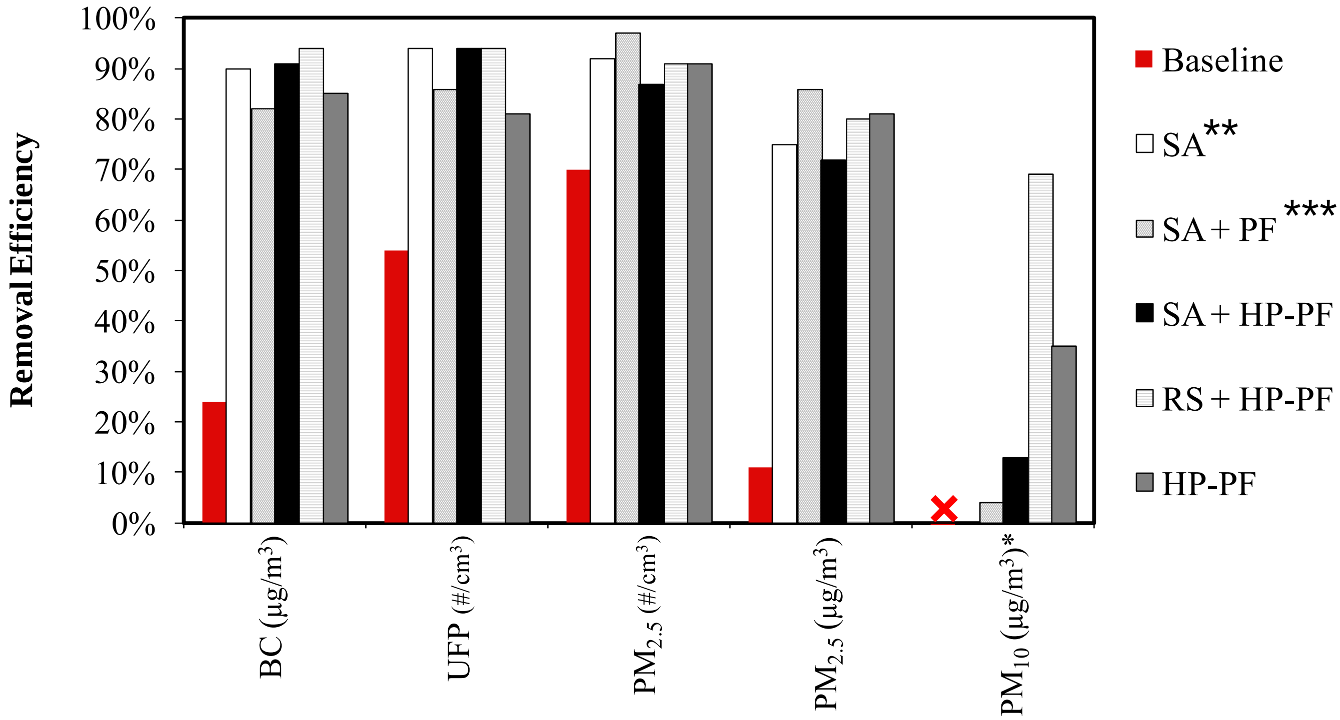
The PM_{10} concentration was higher indoors than outdoors due to indoor sources

c) HUDSON ELEMENTARY SCHOOL



* From gravimetric / filter measurements

d) **DOMINGUEZ ELEMENTARY SCHOOL**



* From gravimetric / filter measurements ** Without HVAC *** With HVAC

✕ The PM_{10} concentration was higher indoors than outdoors because of indoor sources

Figure 7. Particle removal efficiencies (%) achieved by the six air purification solutions. Bars indicate data averaged a) at all schools and in all classrooms, b) at Del Amo, c) at Hudson, and d) at Dominguez

In all cases, air quality conditions were improved substantially with respect to the corresponding baseline measurements. The intra-classroom variability of the measured removal efficiencies was low, as indicated by the low standard deviations given in Table 6a. This reflects the fact that all air purification solutions were highly effective at all schools and in all classrooms, as confirmed by the particle removal performance data for each of the three elementary schools in Tables 6b (Del Amo), 6c (Hudson) and 6d (Dominguez).

The stand-alone system (SA) is well suited for indoor environments not equipped with an HVAC. In order to simulate conditions similar to those encountered in older classrooms not equipped with a forced air climate control device, the HVAC in room DZ-7 (at Dominguez) was intentionally turned off for part of the study. When the SA unit was running with the HVAC off, removal efficiencies were close to 90% for BC, UFP and $PM_{2.5}$ (count) (Table 6d). For BC and UFP, these percentages were slightly lower when the HVAC was running since more of the smaller particles (mostly unfiltered by the existing conventional panel filter) were entering the classrooms from outdoors. Overall, our results confirmed that conventional HVAC panel filters are not particularly effective in removing UFP, although they can be effective in removing coarser particles.

Table 6. Particle removal efficiencies (%) achieved by the six air purification solutions. Data represent averages a) at all schools and in all classrooms, b) at Del Amo, c) at Hudson, and d) at Dominguez

a) ALL CLASSROOMS AND ALL SCHOOLS

	Study days (#)	BC (%)	UFP (%)	$PM_{2.5}$ count (%)	$PM_{2.5}$ mass (%)	PM_{10} gravimetric mass (%)[1]	PM_{10} mass monitor (%)[2]
Baseline	48	22 ± 13	52 ± 17	45 ± 14	37 ± 26	-67 ± 156	13 ± 36
SA + PF**	14	67 ± 6	77 ± 6	79 ± 5	75 ± 5	17 ± 71	59 ± 9
SA + HP-PF	11	91 ± 6	93 ± 4	90 ± 3	82 ± 12	49 ± 16	53 ± 33
RS + PF	15	74 ± 20	81 ± 10	79 ± 17	69 ± 24	31 ± 55	22 ± 46
RS + HP-PF	35	95 ± 2	96 ± 3	93 ± 5	87 ± 11	68 ± 11	42 ± 28
HP-PF	35	88 ± 5	86 ± 7	91 ± 4	88 ± 8	54 ± 25	53 ± 31

b) DEL AMO ELEMENTARY SCHOOL

	Study days (#)	BC (%)	UFP (%)	$PM_{2.5}$ count (%)	$PM_{2.5}$ mass (%)	PM_{10} gravimetric mass (%)[1]	PM_{10} mass monitor (%)[2]
Baseline	15	8 ± 9	45 ± 16	18 ± 20	27 ± 17	-224 ± 278	26 ± 26
SA*	N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A
SA + PF**	10	52 ± 7	68 ± 6	60 ± 7	64 ± 5	29 ± 102	51 ± 9
SA + HP-PF	5	90 ± 5	92 ± 3	93 ± 1	91 ± 4	84 ± 11	74 ± 11
RS + PF	15	74 ± 20	81 ± 10	79 ± 17	69 ± 24	31 ± 55	22 ± 46
RS + HP-PF	N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A
HP-PF	15	88 ± 4	87 ± 4	89 ± 5	89 ± 5	58 ± 28	62 ± 13

c) HUDSON ELEMENTARY SCHOOL

	Study days (#)	BC (%)	UFP (%)	$PM_{2.5}$ count (%)	$PM_{2.5}$ mass (%)	PM_{10} gravimetric mass (%)[1]	PM_{10} mass monitor (%)[2]
Baseline	15	33 ± 9	56 ± 18	46 ± 11	74 ± 5	64 ± 28	54 ± 23
SA*	N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A
SA + PF**	N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A
SA + HP-PF	N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A
RS + PF	N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A
RS + HP-PF	27	96 ± 2	98 ± 2	94 ± 4	94 ± 5	67 ± 8	51 ± 30
HP-PF	15	92 ± 2	91 ± 4	93 ± 2	93 ± 4	68 ± 19	59 ± 33

d) DOMINGUEZ ELEMENTARY SCHOOL

	Study days (#)	BC (%)	UFP (%)	$PM_{2.5}$ count (%)	$PM_{2.5}$ mass (%)	PM_{10} gravimetric mass (%)[1]	PM_{10} mass monitor (%)[2]
Baseline	18	24 ± 21	54 ± 16	70 ± 11	11 ± 55	-40 ± 161	-42 ± 60
SA*	3	90 ± 4	94 ± 2	92 ± 6	75 ± 10	0 ± 34	31 ± 42
SA + PF**	4	82 ± 5	86 ± 5	97 ± 2	86 ± 4	4 ± 40	66 ± 8
SA + HP-PF	6	91 ± 6	94 ± 4	87 ± 5	72 ± 20	13 ± 20	32 ± 55
RS + PF	N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A
RS + HP-PF	8	94 ± 2	94 ± 3	91 ± 6	80 ± 17	69 ± 14	33 ± 25
HP-PF	18	85 ± 8	81 ± 13	91 ± 5	81 ± 16	35 ± 28	39 ± 48

Note: Negative removal efficiencies indicate the presence of an indoor source of PM_{10}
[1]From gravimetric / filter measurements
[2]Using a particle mass monitor
*The HVAC system was turned off
**Operated in conjunction with a standard (MERV 7) panel filter installed in the HVAC system

It should be noted that the negative removal efficiencies associated with several baseline PM_{10} measurements indicate conditions where indoor concentrations were higher than the corresponding outdoor levels. This is likely due to re-suspension of dust and other relatively large particles caused by in-classroom activities such as walking and cleaning. Due to the presence of these indoor sources, the removal performance of PM_{10} was lower than that of other particle measurements.

Figure 8 illustrates the effect of indoor activities on in-classroom PM_{10} levels at Hudson Elementary School (Room H-15) on May 21, 2008. On this day removal efficiencies approached 100% before the school day started and during lunchtime (when students and staff members were outside the classroom) and were substantially lower when classes were in session.

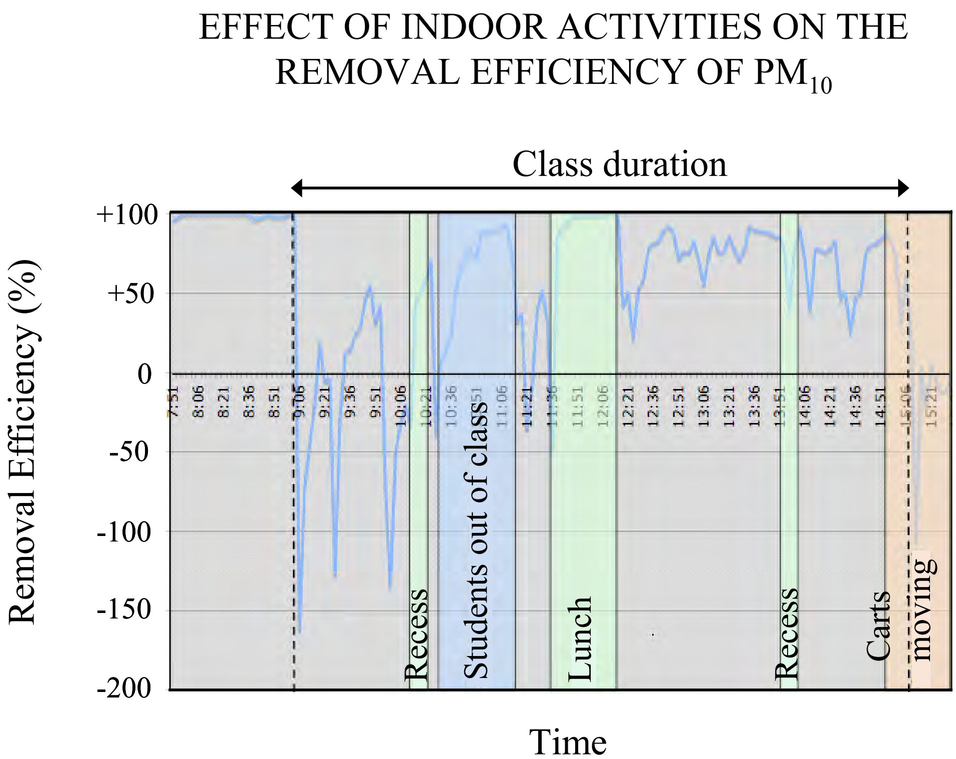


Figure 8. Effect of indoor activities on the removal performance of PM_{10} at Hudson elementary school (Room H-15) on May 21, 2008

Activities occurring immediately outside the school boundaries were observed to influence the indoor concentrations of some pollutants and, thus, their corresponding removal efficiencies. Figure 9 shows the effect of increased motor-vehicle emissions due to the morning drop-off of students (grey areas) on the outdoor concentrations of BC, and the associated spikes in indoor BC levels occurring just before the beginning of the school day, when the classroom doors were left open. Overall, these indoor peaks caused a relatively small decrease in the calculated removal performance when averaged over the course of the entire school day.

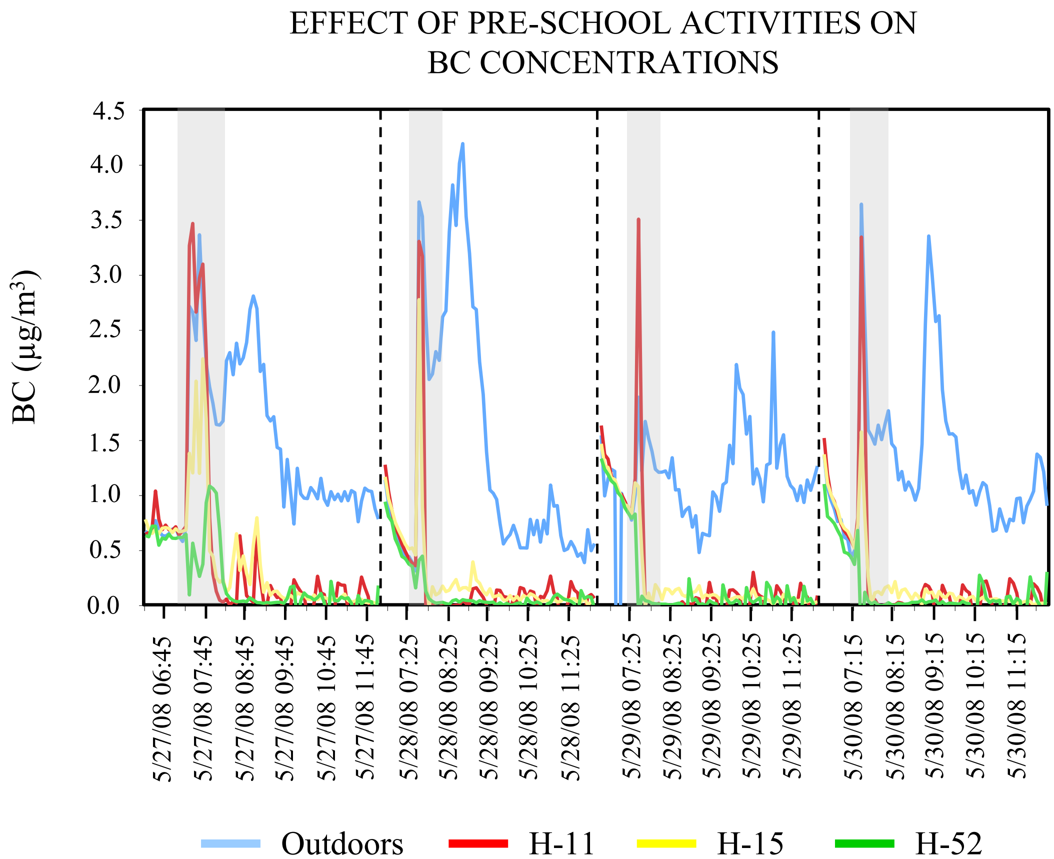


Figure 9. Effect of before school activities on BC concentrations. Grey areas show an increase in both indoor and outdoor levels due to morning drop-off traffic

Impact on the HVAC system airflow

As discussed earlier, the high-performance panel filters (HP-PF) used for this pilot study are thicker than standard/conventional medium performance MERV filters. However, due to their increased surface area and proprietary "nano-fiber" design, they generally have similar air resistance properties as conventional filters and, thus, do not reduce the airflow through the HVAC system.

As shown in Table 7, replacing a conventional panel filter (PF; typically 1" in depth) with a thicker high-performance panel filter (HP-PF; 2" deep) did not alter the measured airflow in any of the studied classrooms. Adding a register system without upgrading to a high-performance panel filter (see the RS-PF configuration data below) reduced the HVAC system airflow by an average of 9%. This small reduction is due to the increased pressure drop resulting from the addition of a gas-phase filtration media. Using a register system while also upgrading to a high-performance panel filter (RS + HP-PF configuration in Table 7) altered the airflow by only 1-3%. At Hudson elementary school, installation of the register system in classrooms H-11 and H-15 required a widening of the connection to the supply duct. This caused an airflow increase between 17 and 24%.

Table 7. Effect of a high-performance panel filter (HP-PF) and/or a register system (RS) on the HVAC system airflow

	DEL AMO ELEMENTARY SCHOOL					
	DA-6		**DA-7**		**DA-8**	
	Airflow (cfm)	Change (%)	Airflow (cfm)	Change (%)	Airflow (cfm)	Change (%)
Baseline	1200		1200		1250	
HP-PF	1210	1	N/A	N/A	1250	0
RS + PF	N/A	N/A	1090	-9	N/A	N/A

	HUDSON ELEMENTARY SCHOOL					
	H-11		**H-15**		**H-52**	
	Airflow (cfm)	Change (%)	Airflow (cfm)	Change (%)	Airflow (cfm)	Change (%)
Baseline	840		903		1236	
HP-PF	844	0	913	1	1246	1
RS + HP-PF	1039	24	1054	17	1194	-3

	DOMINGUEZ ELEMENTARY SCHOOL					
	DZ-7		**DZ-9**		**DZ-11**	
	Airflow (cfm)	Change (%)	Airflow (cfm)	Change (%)	Airflow (cfm)	Change (%)
Baseline	1642		1681		1722	
HP-PF	1661	1	1664	-1	1771	3
RS + HP-PF	N/A	N/A	N/A	N/A	1742	1

Removal of VOCs

Although canister samples were collected at all schools and classrooms, and all samples were analyzed for VOCs, the data recovery at Del Amo and Hudson was insufficient to guarantee an adequate interpretation of the results. The detection limits of the analysis method used at those schools were not low enough to quantify most of the VOCs of interest. After the analysis methods were modified to correct for this problem, reliable VOC data were obtained for Dominguez elementary. Therefore, only VOC data from Dominguez are discussed in this section. Table 8 summarizes the removal efficiencies for:

- Total VOCs: expressed as the sum of 61 individual compounds and 53 unspeciated organic compounds
- Ethanol: a chemical emitted from both indoor and outdoor evaporative sources
- Benzene: a species mostly emitted from gasoline-powered vehicles. This compound was used here as an indicator of VOCs of outdoor origin

Daily average concentrations of individual VOCs measured at Dominguez elementary school (i.e. DZ-7, DZ-9, and DZ-11) are given in APPENDIX B.

Table 8. Average removal efficiencies of total VOCs, ethanol, and benzene at Dominguez elementary school

	DOMINGUEZ ELEMENTARY SCHOOL			
	Study Days (#)	Total VOCs (%)[1]	Ethanol (%)	Benzene (%)
Baseline	18	-114 ± 731	-1230 ± 982	-11 ± 22
SA (HVAC off)*	3	15 ± 132	-349 ± 276	52 ± 35
SA + PF (HVAC on)**	4	19 ± 198	-587 ± 903	58 ± 33
SA + HP-PF	6	-6 ± 280	-929 ± 853	73 ± 11
RS	N/A	N/A ± N/A	N/A ± N/A	N/A ± N/A
RS + HP-PF	8	-3 ± 345	-534 ± 502	58 ± 49
HP-PF	18	-64 ± 404	-1111 ± 1164	1 ± 38

[1]Sum of 61 known VOCs and 53 unspeciated organic compounds

*Operated with the HVAC system turned off

**Operated with the HVAC system turned on

Large standard deviations reflect the wide concentration ranges for the different chemicals. As expected, existing and high-performance panel filters (PF and HP-PF, respectively) had virtually no effect on the VOC levels measured indoors, since these air filtration media did not include gas removal capabilities. The standalone system (SA) demonstrated a 52 to 73% removal performance for benzene.

At all three schools, the indoor concentrations of ethanol were consistently the highest among all measured VOCs and higher than outdoor levels. This organic compound is a common solvent used in whiteboard markers, detergents and other cleaning products, and has several potential indoor sources. The negative removal efficiencies shown in Table 8 indicate that the indoor concentrations of some VOCs were often higher than the corresponding outdoor levels. Our findings are in line with those from previous research studies (Jia et al., 2007; Bruno et al., 2008), and confirm that several measured indoor VOCs are mostly of indoor origin. For this reason, a direct comparison of indoor and outdoor total VOC concentrations is not appropriate when significant indoor sources exist.

Therefore, classroom DZ-9, whose air conditioning system was equipped with a HP-PF and no gas phase filtration device, was used as the “baseline” (rather than the outdoor monitoring site) to better evaluate the actual effectiveness of the standalone unit (SA) and the register system (RS) installed in classrooms DZ-7 and DZ-11, respectively (Table 9). When compared to the control classroom (DZ-9), the removal efficiencies for total VOCs in classrooms DZ-7 and DZ-11 showed a reduction in gaseous pollutants with respect to baseline conditions.

Table 9. Average removal efficiencies of total VOCs with respect to a control classroom (DZ-9) not equipped with any gas phase filtration device. All data refer to measurements taken at Dominguez elementary school

DOMINGUEZ ELEMENTARY SCHOOL (removal efficiency with respect to classroom DZ-9)			
	Classroom Comparison[1]	Study Days (#)	Total VOCs (%)[2]
Baseline	DZ-7 & DZ-11 vs DZ-9	14	-31 ± 367
RS	DZ-11 vs DZ-9	10	-3 ± 521
SA (HVAC off)*	DZ-7 vs DZ-9	2	55 ± 50
SA + PF (HVAC on)**	DZ-7 vs DZ-9	8	27 ± 198

[1]DZ-9 = "control classroom" (HP-PF but no gas-phase filtration)

[2]Sum of 61 known VOCs and 53 unspeciated organic compounds

*Operated with the HVAC system turned off

**Operated with the HVAC system turned on

Removal efficiencies corresponding to baseline measurements indicate that the total VOC concentration inside the two test rooms (DZ-7 and DZ-11) were, on average, 31% higher than that in the control classroom (DZ-9), probably because of differences in indoor activities (e.g. cleaning). Assuming this difference persisted throughout the entire duration of the study, the actual VOC removal performance of the register system (RS) was about 28% (-3% + 31%). Similarly, when normalizing for the initial conditions in the control classroom, the removal efficiencies of the standalone (SA) unit operated with and without the use of the HVAC system were about 58% (27% + 31%) and 86% (55% + 31%), respectively.

Overall, these solutions demonstrated some ability to reduce VOCs indoors, although not as consistently or effectively as the particle filtration. This may be due to the presence of one or more indoor sources of gaseous pollutants. The removal performance of gas-absorbing media (as opposed to filtration substrates) is dependent on media history and may be subject to saturation after experiencing high short-term concentrations or after longer-term use. Therefore, the lifetime, cost, benefits, and maintenance of the gas removal media must be further assessed before conclusions and recommendations can be made.

ACKNOWLEDGEMENTS
This pilot study was funded through the use of mitigation fees collected by the South Coast Air Quality Management District (SCAQMD) under Rule 1172 for VOC releases by local refineries. AQMD is the air pollution control agency for all of Orange County and urban portions of Los Angeles, Riverside and San Bernardino counties, the smoggiest region of the United States. IQAir North America, Inc., a leading specialist in air filtration solutions for homes, hospitals and schools, and Thermal Comfort Systems, specialist in HVAC system design, were selected by SCAQMD through a competitive bid process to provide for the design, engineering and installation of the air filtration devices used for this work.

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APPENDIX A. Daily and weekly average indoor and outdoor concentrations of black carbon (BC), ultra-fine particles (UFP), fine particulate matter ($PM_{2.5}$) and coarse PM (PM_{10}) at all schools and classrooms. The corresponding average indoor / outdoor ratios and removal efficiencies are also included. Missing data (mostly due to instrument malfunction) and periods affected by rain have been highlighted in yellow. The air purification solutions adopted in each classroom have been summarized below each Table

Del Amo Elementary School - Black Carbon

Date	Average Outdoor Concentration (ng/m^3)	Average Indoor Concentration (ng/m^3)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		DA-6	DA-7	DA-8	DA-6	DA-7	DA-8	DA-6	DA-7	DA-8
4/7/2008	1,611	1,392	1,490	1,465	0.86	0.92	0.91	14%	8%	9%
4/8/2008	948	902	1,094	887	0.95	1.15	0.94	5%	-15%	6%
4/9/2008	1,119	1,166	1,147	1,044	1.04	1.03	0.93	-4%	-3%	7%
4/10/2008	1,692	1,518	1,495	1,500	0.90	0.88	0.89	10%	12%	11%
4/11/2008	4,451	3,547	3,665	3,651	0.80	0.82	0.82	20%	18%	18%
Average (Week 1)	1,964	1,705	1,778	1,709	0.91	0.96	0.90	**9%**	**4%**	**10%**
Standard Deviation	1,426	1,056	1,071	1,117	0.09	0.13	0.05	**9%**	**13%**	**5%**
4/14/2008	3,688	1,802	383	410	0.49	0.10	0.11	51%	90%	89%
4/15/2008	1,128	595	851	93	0.53	0.75	0.08	47%	25%	92%
4/16/2008	1,353	824	703	333	0.61	0.52	0.25	39%	48%	75%
4/17/2008	4,392	2,301	1,656	435	0.52	0.38	0.10	48%	62%	90%
4/18/2008	3,387	1,752	1,061	254	0.52	0.31	0.07	48%	69%	93%
Average (Week 2)	2,789	1,455	931	305	0.53	0.41	0.12	**47%**	**59%**	**88%**
Standard Deviation	1,462	718	475	138	0.04	0.24	0.07	**4%**	**24%**	**7%**
4/21/2008	1,409	537	171	105	0.38	0.12	0.07	62%	88%	93%
4/22/2008	2,396	1,097	414	265	0.46	0.17	0.11	54%	83%	89%
4/23/2008	1,180	498	226	125	0.42	0.19	0.11	58%	81%	89%
4/24/2008	1,691	734	362	193	0.43	0.21	0.11	57%	79%	89%
4/25/2008	3,261	1,377	455	278	0.42	0.14	0.09	58%	86%	91%
Average (Week 3)	1,987	848	326	193	0.42	0.17	0.10	**58%**	**83%**	**90%**
Standard Deviation	846	379	122	79	0.03	0.04	0.02	**3%**	**4%**	**2%**
4/28/2008	3,789	209	349	375	0.06	0.09	0.10	94%	91%	90%
4/29/2008	1,908	135	269	279	0.07	0.14	0.15	93%	86%	85%
4/30/2008	1,077	104	108	127	0.10	0.10	0.12	90%	90%	88%
5/1/2008	1,055	191	156	160	0.18	0.15	0.15	82%	85%	85%
5/2/2008	3,338	292	1,899	505	0.09	0.57	0.15	91%	43%	85%
Average (Week 4)	2,233	186	556	289	0.10	0.21	0.13	**90%**	**79%**	**87%**
Standard Deviation	1,272	73	756	156	0.05	0.20	0.02	**5%**	**20%**	**2%**

School / Class ID	**Configurations Used**			
	04 / 07-11 / 08	*04 / 14-18 / 08*	*04 / 21-25 / 08*	*04 / 28 / 08 to 05 / 02 / 08*
Del Amo / DA-6	Baseline	SA + PF	SA + PF	SA + HP-PF
Del Amo / DA-7	Baseline	RS	RS	RS
Del Amo / DA-8	Baseline	HP-PF	HP-PF	HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Del Amo Elementary School - Ultra Fine Particles

Date	Average Outdoor Concentration (particles/cm^3)	Average Indoor Concentration (particles/cm^3)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		DA-6	DA-7	DA-8	DA-6	DA-7	DA-8	DA-6	DA-7	DA-8
4/7/2008	34,674		25,215			0.73			27%	
4/8/2008	39,291	15,555	17,984	14,386	0.40	0.46	0.37	60%	54%	63%
4/9/2008	19,124	11,354	18,384	12,960	0.59	0.96	0.68	41%	4%	32%
4/10/2008	41,814	19,800	21,327	19,463	0.47	0.51	0.47	53%	49%	53%
4/11/2008	42,613	19,833	22,452	19,935	0.47	0.53	0.47	53%	47%	53%
Average (Week 1)	35,503	16,635	21,072	16,686	0.48	0.64	0.49	**52%**	**36%**	**51%**
Standard Deviation	9,665	4,054	2,996	3,533	0.08	0.21	0.13	**8%**	**21%**	**13%**
4/14/2008	53,086	16,017	6,724	7,303	0.30	0.13	0.14	70%	87%	86%
4/15/2008		7,878	8,865	10,233						
4/16/2008	35,591	14,757	14,140	8,932	0.41	0.40	0.25	59%	60%	75%
4/17/2008	55,384	13,945	12,367	5,628	0.25	0.22	0.10	75%	78%	90%
4/18/2008	35,185	14,434	11,992	4,979	0.41	0.34	0.14	59%	66%	86%
Average (Week 2)	44,812	13,406	10,818	7,415	0.34	0.27	0.16	**66%**	**73%**	**84%**
Standard Deviation	10,923	3,184	2,974	2,201	0.08	0.12	0.06	**8%**	**12%**	**6%**
4/21/2008	57,526	20,259	6,007	5,267	0.35	0.10	0.09	65%	90%	91%
4/22/2008	46,241	13,552	8,158	7,011	0.29	0.18	0.15	71%	82%	85%
4/23/2008	34,366	9,741	5,891	3,039	0.28	0.17	0.09	72%	83%	91%
4/24/2008	38,854	10,831	7,090	5,171	0.28	0.18	0.13	72%	82%	87%
4/25/2008	33,004	8,965	4,695	2,794	0.27	0.14	0.08	73%	86%	92%
Average (Week 3)	41,998	12,670	6,368	4,656	0.30	0.16	0.11	**70%**	**84%**	**89%**
Standard Deviation	10,101	4,585	1,312	1,751	0.03	0.03	0.03	**3%**	**3%**	**3%**
4/28/2008	40,429	2,179	4,967	5,287	0.05	0.12	0.13	95%	88%	87%
4/29/2008	57,136	3,963	7,457	7,819	0.07	0.13	0.14	93%	87%	86%
4/30/2008	30,692	1,909	2,347	3,136	0.06	0.08	0.10	94%	92%	90%
5/1/2008	37,507	4,076	4,677	3,640	0.11	0.12	0.10	89%	88%	90%
5/2/2008	34,214	3,845	12,424	4,961	0.11	0.36	0.14	89%	64%	86%
Average (Week 4)	39,996	3,194	6,374	4,968	0.08	0.16	0.12	**92%**	**84%**	**88%**
Standard Deviation	10,249	1,058	3,836	1,827	0.03	0.11	0.02	**3%**	**11%**	**2%**

School / Class ID	Configurations Used			
	04 / 07-11 / 08	*04 / 14-18 / 08*	*04 / 21-25 / 08*	*04 / 28 / 08 to 05 / 02 / 08*
Del Amo / DA-6	Baseline	SA + PF	SA + PF	SA + HP-PF
Del Amo / DA-7	Baseline	RS	RS	RS
Del Amo / DA-8	Baseline	HP-PF	HP-PF	HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Del Amo Elementary School - $PM_{2.5}$ (count)

Date	Average Outdoor Concentration (particles/ft^3)	Average Indoor Concentration (particles/ft^3)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		DA-6	DA-7	DA-8	DA-6	DA-7	DA-8	DA-6	DA-7	DA-8
4/7/2008		1,425,737								
4/8/2008	1,129,234	860,458	818,779	859,380	0.76	0.73	0.76	24%	27%	24%
4/9/2008	606,772		589,396	761,753		0.97	1.26		3%	-26%
4/10/2008	878,513		621,944	654,570		0.71	0.75		29%	25%
4/11/2008	1,657,318	1,007,993	1,686,712	1,092,355	0.61	1.02	0.66	39%	-2%	34%
Average (Week 1)	1,067,959	1,098,063	929,208	842,014	0.69	0.86	0.86	**31%**	**14%**	**14%**
Standard Deviation	447,095	293,205	515,070	186,681	0.11	0.16	0.27	**11%**	**16%**	**27%**
4/14/2008	1,510,925	608,865	153,470	164,656	0.40	0.10	0.11	60%	90%	89%
4/15/2008	1,448,473	675,560	901,449	87,792	0.47	0.62	0.06	53%	38%	94%
4/16/2008	1,448,590	823,550	755,949	363,943	0.57	0.52	0.25	43%	48%	75%
4/17/2008	2,375,182	935,700	625,960	216,222	0.39	0.26	0.09	61%	74%	91%
4/18/2008	3,303,699	1,068,499	835,426	206,160	0.32	0.25	0.06	68%	75%	94%
Average (Week 2)	2,017,374	822,435	654,451	207,755	0.43	0.35	0.11	**57%**	**65%**	**89%**
Standard Deviation	819,499	187,458	298,268	100,893	0.09	0.21	0.08	**9%**	**21%**	**8%**
4/21/2008	1,117,692	445,613	132,034	89,866	0.40	0.12	0.08	60%	88%	92%
4/22/2008	1,962,746	721,027	258,062	184,328	0.37	0.13	0.09	63%	87%	91%
4/23/2008	1,677,902	639,840	235,809	136,928	0.38	0.14	0.08	62%	86%	92%
4/24/2008	1,606,064	565,163	258,425	167,180	0.35	0.16	0.10	65%	84%	90%
4/25/2008	1,649,781	558,423	189,268	127,409	0.34	0.11	0.08	66%	89%	92%
Average (Week 3)	1,602,837	586,013	214,719	141,142	0.37	0.13	0.09	**63%**	**87%**	**91%**
Standard Deviation	305,266	102,511	54,125	36,669	0.02	0.02	0.01	**2%**	**2%**	**1%**
4/28/2008	1,284,388	94,732	159,555	165,842	0.07	0.12	0.13	93%	88%	87%
4/29/2008	2,011,522	121,487	205,529	272,593	0.06	0.10	0.14	94%	90%	86%
4/30/2008	1,367,829	108,012	120,466	153,098	0.08	0.09	0.11	92%	91%	89%
5/1/2008			143,394	155,073						
5/2/2008			791,947	275,170						
Average (Week 4)	1,554,580	108,077	284,178	204,355	0.07	0.10	0.13	**93%**	**90%**	**87%**
Standard Deviation	397,917	13,378	285,555	63,660	0.01	0.02	0.01	**1%**	**2%**	**1%**

School / Class ID	Configurations Used			
	04 / 07-11 / 08	*04 / 14-18 / 08*	*04 / 21-25 / 08*	*04 / 28 / 08 to 05 / 02 / 08*
Del Amo / DA-6	Baseline	SA + PF	SA + PF	SA + HP-PF
Del Amo / DA-7	Baseline	RS	RS	RS
Del Amo / DA-8	Baseline	HP-PF	HP-PF	HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Del Amo Elementary School - $PM_{2.5}$ (mass)

Date	Average Outdoor Concentration (µg/m³)	Average Indoor Concentration (µg/m³) DA-6	DA-7	DA-8	Average Indoor/Outdoor Ratio DA-6	DA-7	DA-8	Average Removal Efficiency DA-6	DA-7	DA-8
4/7/2008	8.74	10.50	6.68	6.51	1.20	0.76	74%	-20%	24%	26%
4/8/2008	14.25		10.54	7.04		0.74	0.49		26%	51%
4/9/2008	8.61	5.07	6.43	6.05	0.59	0.75	0.70	41%	25%	30%
4/10/2008	7.48	6.53	5.73	4.55	0.87	0.77	0.61	13%	23%	39%
4/11/2008	7.24	3.89	5.94	4.73	0.54	0.82	0.65	46%	18%	35%
Average (Week 1)	9.27	6.50	7.06	5.77	0.80	0.77	0.64	**20%**	**23%**	**36%**
Standard Deviation	2.86	2.88	1.98	1.10	0.31	0.03	0.10	**31%**	**3%**	**10%**
4/14/2008	10.14	3.61	1.93	0.90	0.36	0.19	0.09	64%	81%	91%
4/15/2008	15.06	4.75	12.40	1.15	0.32	0.82	0.08	68%	18%	92%
4/16/2008	12.49	5.44	9.75	3.31	0.44	0.78	0.26	56%	22%	74%
4/17/2008	10.60		5.21	0.62		0.49	0.06		51%	94%
4/18/2008	8.25	3.76	3.68	1.05	0.46	0.45	0.13	54%	55%	87%
Average (Week 2)	11.31	4.39	6.59	1.41	0.39	0.55	0.12	**61%**	**45%**	**88%**
Standard Deviation	2.58	0.86	4.35	1.08	0.07	0.26	0.08	**7%**	**26%**	**8%**
4/21/2008	10.99	3.56	2.28	0.81	0.32	0.21	0.07	68%	79%	93%
4/22/2008	11.03	3.65	1.82	1.31	0.33	0.17	0.12	67%	83%	88%
4/23/2008	8.59	2.81	2.54	1.18	0.33	0.30	0.14	67%	70%	86%
4/24/2008	12.72	4.27	2.74	1.70	0.34	0.22	0.13	66%	78%	87%
4/25/2008	7.09	2.44	1.31	0.52	0.34	0.19	0.07	66%	81%	93%
Average (Week 3)	10.08	3.35	2.14	1.10	0.33	0.21	0.11	**67%**	**79%**	**89%**
Standard Deviation	2.23	0.73	0.58	0.45	0.01	0.05	0.03	**1%**	**5%**	**3%**
4/28/2008	5.61	0.69	1.05	0.34	0.12	0.19	0.06	88%	81%	94%
4/29/2008	17.88	0.87	1.61	1.79	0.05	0.09	0.10	95%	91%	90%
4/30/2008	14.50	1.35	1.25	1.87	0.09	0.09	0.13	91%	91%	87%
5/1/2008	12.95	1.78	1.17	1.62	0.14	0.09	0.13	86%	91%	88%
5/2/2008	14.08	0.75	5.79	2.10	0.05	0.41	0.15	95%	59%	85%
Average (Week 4)	13.00	1.09	2.17	1.55	0.09	0.17	0.11	**91%**	**83%**	**89%**
Standard Deviation	4.52	0.46	2.03	0.69	0.04	0.14	0.03	**4%**	**14%**	**3%**

School / Class ID	Configurations Used			
	04 / 07-11 / 08	*04 / 14-18 / 08*	*04 / 21-25 / 08*	*04 / 28 / 08 to 05 / 02 / 08*
Del Amo / DA-6	Baseline	SA + PF	SA + PF	SA + HP-PF
Del Amo / DA-7	Baseline	RS	RS	RS
Del Amo / DA-8	Baseline	HP-PF	HP-PF	HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Del Amo Elementary School - PM_{10} (from particle mass monitor measurements)

Date	Average Outdoor Concentration (µg/m³)	Average Indoor Concentration (µg/m³)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		DA-6	DA-7	DA-8	DA-6	DA-7	DA-8	DA-6	DA-7	DA-8
4/7/2008	35.78	35.22	28.42	21.97	0.98	0.79	61%	2%	21%	39%
4/8/2008	45.40		55.07	23.04		1.21	0.51		-21%	49%
4/9/2008	28.99	20.88	24.58	23.40	0.72	0.85	0.81	28%	15%	19%
4/10/2008	29.55	34.72	22.50	18.44	1.18	0.76	0.62	-18%	24%	38%
4/11/2008	41.44	11.06	25.65	20.46	0.27	0.62	0.49	73%	38%	51%
Average (Week 1)	36.23	25.47	31.25	21.46	0.79	0.85	0.61	**21%**	**15%**	**39%**
Standard Deviation	7.22	11.68	13.49	2.04	0.39	0.22	0.13	**39%**	**22%**	**13%**
4/14/2008	37.29	16.79	31.87	11.31	0.45	0.85	0.30	55%	15%	70%
4/15/2008	49.49	18.09	81.10	17.11	0.37	1.64	0.35	63%	-64%	65%
4/16/2008	43.89	27.44	75.71	22.75	0.63	1.72	0.52	37%	-72%	48%
4/17/2008	43.78		48.13	11.29		1.10	0.26		-10%	74%
4/18/2008	33.84	19.71	38.90	16.90	0.58	1.15	0.50	42%	-15%	50%
Average (Week 2)	41.66	20.51	55.14	15.87	0.51	1.29	0.38	**49%**	**-29%**	**62%**
Standard Deviation	6.14	4.77	22.09	4.79	0.12	0.37	0.12	**12%**	**37%**	**12%**
4/21/2008	45.13	17.94	31.35	14.58	0.40	0.69	0.32	60%	31%	68%
4/22/2008	39.96	23.99	20.92	18.86	0.60	0.52	0.47	40%	48%	53%
4/23/2008	33.54	14.53	32.46	18.54	0.43	0.97	0.55	57%	3%	45%
4/24/2008	40.68	21.02	26.43	21.74	0.52	0.65	0.53	48%	35%	47%
4/25/2008	35.52	15.42	18.02	10.66	0.43	0.51	0.30	57%	49%	70%
Average (Week 3)	38.96	18.58	25.83	16.88	0.48	0.67	0.44	**52%**	**33%**	**56%**
Standard Deviation	4.56	3.94	6.33	4.31	0.08	0.19	0.12	**8%**	**19%**	**12%**
4/28/2008	5.61	0.69	1.05	0.34	0.12	0.19	0.06	88%	81%	94%
4/29/2008	49.89	12.13	17.43	13.57	0.24	0.35	0.27	76%	65%	73%
4/30/2008	55.49	19.75	18.17	23.04	0.36	0.33	0.42	64%	67%	58%
5/1/2008	44.69	17.16	17.06	21.40	0.38	0.38	0.48	62%	62%	52%
5/2/2008	52.56	9.90	32.02	19.66	0.19	0.61	0.37	81%	39%	63%
Average (Week 4)	41.65	11.93	17.14	15.60	0.26	0.37	0.32	**74%**	**63%**	**68%**
Standard Deviation	20.53	7.40	10.97	9.25	0.11	0.15	0.16	**11%**	**15%**	**16%**

School / Class ID	Configurations Used			
	04 / 07-11 / 08	*04 / 14-18 / 08*	*04 / 21-25 / 08*	*04 / 28 / 08 to 05 / 02 / 08*
Del Amo / DA-6	Baseline	SA + PF	SA + PF	SA + HP-PF
Del Amo / DA-7	Baseline	RS	RS	RS
Del Amo / DA-8	Baseline	HP-PF	HP-PF	HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Del Amo Elementary School - PM_{10} (from filter-based measurements)

Date	Average Outdoor Concentration (μg/m³)	Average Indoor Concentration (μg/m³)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		DA-6	DA-7	DA-8	DA-6	DA-7	DA-8	DA-6	DA-7	DA-8
4/7/2008	11	72	44	80	6.55	4.00	727%	-555%	-300%	-627%
4/8/2008	15		72	22		4.80	1.47		-380%	-47%
4/9/2008		66	60	11						
4/10/2008		53	29	65						
4/11/2008	64	47	29	43	0.73	0.45	0.67	27%	55%	33%
Average (Week 1)	30	60	47	44	3.64	3.08	3.14	**-264%**	**-208%**	**-214%**
Standard Deviation	30	12	19	29	4.11	2.31	3.60	**411%**	**231%**	**360%**
4/14/2008	83	87	150	11	1.05	1.81	0.13	-5%	-81%	87%
4/15/2008	61	25	76	52	0.41	1.25	0.85	59%	-25%	15%
4/16/2008	84	41	71	42	0.49	0.85	0.50	51%	15%	50%
4/17/2008	85	20	61	32	0.24	0.72	0.38	76%	28%	62%
4/18/2008	73	11	29	53	0.15	0.40	0.73	85%	60%	27%
Average (Week 2)	77	37	77	38	0.47	1.00	0.52	**53%**	**0%**	**48%**
Standard Deviation	10	30	45	17	0.35	0.54	0.28	**35%**	**54%**	**28%**
4/21/2008	100	71	31	11	0.71	0.31	0.11	29%	69%	89%
4/22/2008	14	49	26	14	3.50	1.86	1.00	-250%	-86%	0%
4/23/2008	110	11	46	21	0.10	0.42	0.19	90%	58%	81%
4/24/2008	61	20	33	43	0.33	0.54	0.70	67%	46%	30%
4/25/2008	73	12	29	21	0.16	0.40	0.29	84%	60%	71%
Average (Week 3)	72	33	33	22	0.96	0.70	0.46	**4%**	**30%**	**54%**
Standard Deviation	38	26	8	13	1.44	0.65	0.38	**144%**	**65%**	**38%**
4/28/2008	88	11	59	30	0.13	0.67	0.34	88%	33%	66%
4/29/2008	780	14	25	36	0.02	0.03	0.05	98%	97%	95%
4/30/2008	67	12	12	22	0.18	0.18	0.33	82%	82%	67%
5/1/2008	63	21	42	28	0.33	0.67	0.44	67%	33%	56%
5/2/2008	86	12	28	28	0.14	0.33	0.33	86%	67%	67%
Average (Week 4)	217	14	33	29	0.16	0.37	0.30	**84%**	**63%**	**70%**
Standard Deviation	315	4	18	5	0.11	0.29	0.15	**11%**	**29%**	**15%**

School / Class ID	Configurations Used			
	04 / 07-11 / 08	*04 / 14-18 / 08*	*04 / 21-25 / 08*	*04 / 28 / 08 to 05 / 02 / 08*
Del Amo / DA-6	Baseline	SA + PF	SA + PF	SA + HP-PF
Del Amo / DA-7	Baseline	RS	RS	RS
Del Amo / DA-8	Baseline	HP-PF	HP-PF	HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Hudson Elementary School - Black Carbon

Date	Average Outdoor Concentration (ng/m^3)	Average Indoor Concentration (ng/m^3)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		H-11	H-15	H-52	H-11	H-15	H-52	H-11	H-15	H-52
5/12/2008	889	557	643	666	0.63	0.72	0.75	37%	28%	25%
5/13/2008	1,765	983	1,155	1,208	0.56	0.65	0.68	44%	35%	32%
5/14/2008	1,906	1,031	1,297	1,616	0.54	0.68	0.85	46%	32%	15%
5/15/2008	3,632	2,026	2,597	2,903	0.56	0.72	0.80	44%	28%	20%
5/16/2008	3,756	2,163	2,486	2,771	0.58	0.66	0.74	42%	34%	26%
Average (Week 1)	2,390	1,352	1,636	1,833	0.57	0.69	0.76	**43%**	**31%**	**24%**
Standard Deviation	1,253	704	863	978	0.03	0.03	0.06	**3%**	**3%**	**6%**
5/19/2008	2,007	78	97	194	0.04	0.05	0.10	96%	95%	90%
5/20/2008	1,066	74	71	96	0.07	0.07	0.09	93%	93%	91%
5/21/2008	1,344	104	75	111	0.08	0.06	0.08	92%	94%	92%
5/22/2008	903	95	67	82	0.11	0.07	0.09	89%	93%	91%
5/23/2008	731	68	71	73	0.09	0.10	0.10	91%	90%	90%
Average (Week 2)	1,210	84	76	111	0.08	0.07	0.09	**92%**	**93%**	**91%**
Standard Deviation	499	15	12	49	0.03	0.02	0.01	**3%**	**2%**	**1%**
5/26/2008										
5/27/2008	1,028	63	72	26	0.06	0.07	0.03	94%	93%	97%
5/28/2008	778	59	58	19	0.08	0.07	0.02	92%	93%	98%
5/29/2008	1,098	37	53	23	0.03	0.05	0.02	97%	95%	98%
5/30/2008	1,140	35	41	27	0.03	0.04	0.02	97%	96%	98%
Average (Week 3)	1,011	48	56	24	0.05	0.06	0.02	**95%**	**94%**	**98%**
Standard Deviation	162	15	13	4	0.02	0.02	0.00	**2%**	**2%**	**0%**
6/2/2008	1,128		45	36		0.04	0.03		96%	97%
6/3/2008	1,495	50	69	33	0.03	0.05	0.02	97%	95%	98%
6/4/2008	1,106	55	63	18	0.05	0.06	0.02	95%	94%	98%
6/5/2008	1,320	60	58	65	0.05	0.04	0.05	95%	96%	95%
6/6/2008	2,046	51	52	38	0.03	0.03	0.02	97%	97%	98%
Average (Week 4)	1,419	54	57	38	0.04	0.04	0.03	**96%**	**96%**	**97%**
Standard Deviation	384	5	9	17	0.01	0.01	0.01	**1%**	**1%**	**1%**

School / Class ID	Configurations Used			
	05 / 12-16 / 08	*05 / 19-23 / 08*	*05 / 26-30 / 08*	*06 / 02-06 / 08*
Hudson / H-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-15	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-52	Baseline	HP-PF	RS + HP-PF	RS + HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Hudson Elementary School - Ultra Fine Particles

Date	Average Outdoor Concentration (particles/cm^3)	Average Indoor Concentration (particles/cm^3)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		H-11	H-15	H-52	H-11	H-15	H-52	H-11	H-15	H-52
5/12/2008	14,643	4,083	5,190	8,433	0.28	0.35	0.58	72%	65%	42%
5/13/2008	40,865	10,619	9,421	19,956	0.26	0.23	0.49	74%	77%	51%
5/14/2008	47,145	11,563	14,730	19,466	0.25	0.31	0.41	75%	69%	59%
5/15/2008	44,862	18,397	27,694	29,422	0.41	0.62	0.66	59%	38%	34%
5/16/2008	38,322	10,435	24,291	29,818	0.27	0.63	0.78	73%	37%	22%
Average (Week 1)	37,167	11,019	16,265	21,419	0.29	0.43	0.58	**71%**	**57%**	**42%**
Standard Deviation	13,049	5,083	9,577	8,792	0.07	0.18	0.14	**7%**	**18%**	**14%**
5/19/2008	38,368	1,835	2,732	5,456	0.05	0.07	0.14	95%	93%	86%
5/20/2008	17,442	755	2,099	2,033	0.04	0.12	0.12	96%	88%	88%
5/21/2008	80,163	6,255	4,714	10,681	0.08	0.06	0.13	92%	94%	87%
5/22/2008	27,886	1,381	1,291	3,353	0.05	0.05	0.12	95%	95%	88%
5/23/2008	20,524	1,792	1,367	3,214	0.09	0.07	0.16	91%	93%	84%
Average (Week 2)	36,877	2,404	2,440	4,947	0.06	0.07	0.13	**94%**	**93%**	**87%**
Standard Deviation	25,505	2,197	1,401	3,434	0.02	0.03	0.02	**2%**	**3%**	**2%**
5/26/2008										
5/27/2008	50,891	763	1,295	793	0.01	0.03	0.02	99%	97%	98%
5/28/2008	36,964	452	458	594	0.01	0.01	0.02	99%	99%	98%
5/29/2008	40,035	367	435	572	0.01	0.01	0.01	99%	99%	99%
5/30/2008	57,760	456	566	1,006	0.01	0.01	0.02	99%	99%	98%
Average (Week 3)	46,413	510	689	741	0.01	0.01	0.02	**99%**	**99%**	**98%**
Standard Deviation	9,639	174	408	203	0.00	0.01	0.00	**0%**	**1%**	**0%**
6/2/2008	35,495		430	426		0.01	0.01		99%	99%
6/3/2008	32,336		700	432		0.02	0.01		98%	99%
6/4/2008	18,941	1,656	393	346	0.09	0.02	0.02	91%	98%	98%
6/5/2008	39,083	53	570	3,727	0.00	0.01	0.10	100%	99%	90%
6/6/2008	43,572	609	607	950	0.01	0.01	0.02	99%	99%	98%
Average (Week 4)	33,885	773	540	1,176	0.03	0.02	0.03	**97%**	**98%**	**97%**
Standard Deviation	9,343	814	127	1,446	0.05	0.00	0.04	**5%**	**0%**	**4%**

School / Class ID	Configurations Used			
	05 / 12-16 / 08	*05 / 19-23 / 08*	*05 / 26-30 / 08*	*06 / 02-06 / 08*
Hudson / H-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-15	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-52	Baseline	HP-PF	RS + HP-PF	RS + HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Hudson Elementary School - $PM_{2.5}$ (count)

Date	Average Outdoor Concentration (particles/ft³)	Average Indoor Concentration (particles/ft³) H-11	H-15	H-52	Average Indoor/Outdoor Ratio H-11	H-15	H-52	Average Removal Efficiency H-11	H-15	H-52
5/12/2008	1,109,627	576,204	511,734	718,130	0.52	0.46	0.65	48%	54%	35%
5/13/2008	1,850,803	757,977	897,986	1,156,730	0.41	0.49	0.62	59%	51%	38%
5/14/2008	1,760,128	682,498	838,534	1,199,580	0.39	0.48	0.68	61%	52%	32%
5/15/2008	1,839,611	767,375	1,011,002	1,191,460	0.42	0.55	0.65	58%	45%	35%
5/16/2008	1,128,564	525,461	723,482	781,768	0.47	0.64	0.69	53%	36%	31%
Average (Week 1)	1,537,747	661,903	796,548	1,009,534	0.44	0.52	0.66	**56%**	**48%**	**34%**
Standard Deviation	383,828	108,096	190,066	238,576	0.05	0.07	0.03	**5%**	**7%**	**3%**
5/19/2008	660,607	44,930	61,168	59,352	0.07	0.09	0.09	93%	91%	91%
5/20/2008	1,477,586	68,443	70,820	131,786	0.05	0.05	0.09	95%	95%	91%
5/21/2008	1,613,826	103,883	73,924	125,633	0.06	0.05	0.08	94%	95%	92%
5/22/2008	1,530,791	106,300	69,737	94,795	0.07	0.05	0.06	93%	95%	94%
5/23/2008	987,855	77,470	71,330	70,589	0.08	0.07	0.07	92%	93%	93%
Average (Week 2)	1,254,133	80,205	69,396	96,431	0.07	0.06	0.08	**93%**	**94%**	**92%**
Standard Deviation	412,015	25,650	4,850	32,203	0.01	0.02	0.01	**1%**	**2%**	**1%**
5/26/2008										
5/27/2008	440,181	52,467	51,042	26,303	0.12	0.12	0.06	88%	88%	94%
5/28/2008	362,533	66,769	46,541	18,906	0.18	0.13	0.05	82%	87%	95%
5/29/2008	369,467	33,173	50,616	17,735	0.09	0.14	0.05	91%	86%	95%
5/30/2008	529,995	35,119	28,628	23,916	0.07	0.05	0.05	93%	95%	95%
Average (Week 3)	425,544	46,882	44,207	21,715	0.11	0.11	0.05	**89%**	**89%**	**95%**
Standard Deviation	77,973	15,843	10,582	4,067	0.05	0.04	0.01	**5%**	**4%**	**1%**
6/2/2008	1,472,339		38,432	36,347		0.03	0.02		97%	98%
6/3/2008	2,102,152	56,800	81,009	39,991	0.03	0.04	0.02	97%	96%	98%
6/4/2008	1,346,575	64,055	66,975	19,669	0.05	0.05	0.01	95%	95%	99%
6/5/2008	1,167,940	77,692	56,657	29,352	0.07	0.05	0.03	93%	95%	97%
6/6/2008	998,499	67,890	40,091	24,490	0.07	0.04	0.02	93%	96%	98%
Average (Week 4)	1,417,501	66,609	56,633	29,970	0.05	0.04	0.02	**95%**	**96%**	**98%**
Standard Deviation	422,678	8,703	18,070	8,331	0.02	0.01	0.00	**2%**	**1%**	**0%**

School / Class ID	Configurations Used			
	05 / 12-16 / 08	*05 / 19-23 / 08*	*05 / 26-30 / 08*	*06 / 02-06 / 08*
Hudson / H-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-15	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-52	Baseline	HP-PF	RS + HP-PF	RS + HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Hudson Elementary School - $PM_{2.5}$ (mass)

Date	Average Outdoor Concentration (µg/m^3)	Average Indoor Concentration (µg/m^3)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		H-11	H-15	H-52	H-11	H-15	H-52	H-11	H-15	H-52
5/12/2008	8.19	2.68	2.55	1.82	0.33	0.31	0.22	67%	69%	78%
5/13/2008	13.38	3.36	3.62	3.02	0.25	0.27	0.23	75%	73%	77%
5/14/2008	14.65	2.55	3.74	4.09	0.17	0.25	0.28	83%	75%	72%
5/15/2008	20.11	3.60	5.52	4.92	0.18	0.27	0.24	82%	73%	76%
5/16/2008	14.66	3.13	4.81	4.41	0.21	0.33	0.30	79%	67%	70%
Average (Week 1)	14.20	3.06	4.05	3.65	0.23	0.29	0.25	**77%**	**71%**	**75%**
Standard Deviation	4.25	0.45	1.15	1.23	0.06	0.03	0.03	**6%**	**3%**	**3%**
5/19/2008	7.86	0.56	0.84	0.04	0.07	0.11	0.01	93%	89%	99%
5/20/2008	6.19	1.00	0.82	0.28	0.16	0.13	0.05	84%	87%	95%
5/21/2008	14.18	1.37	0.79	0.28	0.10	0.06	0.02	90%	94%	98%
5/22/2008	29.03	2.09	1.00	0.93	0.07	0.03	0.03	93%	97%	97%
5/23/2008	17.46	1.32	1.20	0.29	0.08	0.07	0.02	92%	93%	98%
Average (Week 2)	14.95	1.27	0.93	0.37	0.10	0.08	0.02	**90%**	**92%**	**98%**
Standard Deviation	9.11	0.56	0.17	0.33	0.04	0.04	0.02	**4%**	**4%**	**2%**
5/26/2008										
5/27/2008	3.12	0.92	0.91	0.10	0.30	0.29	0.03	70%	71%	97%
5/28/2008	2.34	1.48	0.88		0.63	0.38		37%	62%	
5/29/2008	3.36	0.47	0.84	0.07	0.14	0.25	0.02	86%	75%	98%
5/30/2008	4.65	0.54	0.59	0.17	0.12	0.13	0.04	88%	87%	96%
Average (Week 3)	3.37	0.86	0.81	1.64	0.30	0.26	0.03	**70%**	**74%**	**97%**
Standard Deviation	0.96	0.46	0.15	3.05	0.24	0.10	0.01	**24%**	**10%**	**1%**
6/2/2008	12.73		0.49	0.45		0.04	0.04		96%	96%
6/3/2008	15.40	1.09	1.07	0.31	0.07	0.07	0.02	93%	93%	98%
6/4/2008	9.62	1.43	1.10	0.00	0.15	0.11	0.00	85%	89%	100%
6/5/2008	12.63	1.72	1.16	0.22	0.14	0.09	0.02	86%	91%	98%
6/6/2008	16.85	1.25	0.79	0.17	0.07	0.05	0.01	93%	95%	99%
Average (Week 4)	13.45	1.38	0.92	0.23	0.11	0.07	0.02	**89%**	**93%**	**98%**
Standard Deviation	2.80	0.27	0.28	0.17	0.04	0.03	0.01	**4%**	**3%**	**1%**

School / Class ID	Configurations Used			
	05 / 12-16 / 08	*05 / 19-23 / 08*	*05 / 26-30 / 08*	*06 / 02-06 / 08*
Hudson / H-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-15	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-52	Baseline	HP-PF	RS + HP-PF	RS + HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Hudson Elementary School - PM_{10} (from particle mass monitor measurements)

Date	Average Outdoor Concentration (μg/m^3)	Average Indoor Concentration (μg/m^3)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		H-11	H-15	H-52	H-11	H-15	H-52	H-11	H-15	H-52
5/12/2008	34.99	35.13	29.94	9.35	1.00	0.86	0.27	0%	14%	73%
5/13/2008	72.87	36.97	35.03	14.02	0.51	0.48	0.19	49%	52%	81%
5/14/2008	57.56	23.93	32.32	13.91	0.42	0.56	0.24	58%	44%	76%
5/15/2008	73.56	33.55	33.75	11.95	0.46	0.46	0.16	54%	54%	84%
5/16/2008	65.32	28.13	36.48	18.64	0.43	0.56	0.29	57%	44%	71%
Average (Week 1)	60.86	31.54	33.50	13.57	0.56	0.58	0.23	**44%**	**42%**	**77%**
Standard Deviation	15.86	5.38	2.52	3.41	0.25	0.16	0.05	**25%**	**16%**	**5%**
5/19/2008	44.62	22.67	31.37	3.21	0.51	0.70	0.07	49%	30%	93%
5/20/2008	29.90	32.03	32.45	7.32	1.07	1.09	0.24	-7%	-9%	76%
5/21/2008	99.04	30.71	30.14	5.48	0.31	0.30	0.06	69%	70%	94%
5/22/2008	97.14	48.80	26.72	6.28	0.50	0.28	0.06	50%	72%	94%
5/23/2008	62.98	28.55	30.00	3.31	0.45	0.48	0.05	55%	52%	95%
Average (Week 2)	66.74	32.55	30.14	5.12	0.57	0.57	0.10	**43%**	**43%**	**90%**
Standard Deviation	30.94	9.77	2.15	1.82	0.29	0.34	0.08	**29%**	**34%**	**8%**
5/26/2008										
5/27/2008	21.70	31.71	35.38	3.04	1.46	1.63	0.14	-46%	-63%	86%
5/28/2008	18.66	37.53	29.44		2.01	1.58		-101%	-58%	
5/29/2008	24.67	20.97	32.20	3.62	0.85	1.31	0.15	15%	-31%	85%
5/30/2008	28.26	22.01	18.07	6.19	0.78	0.64	0.22	22%	36%	78%
Average (Week 3)	23.32	28.06	28.77	5.26	1.28	1.29	0.17	**-28%**	**-29%**	**83%**
Standard Deviation	4.10	7.96	7.54	2.38	0.58	0.46	0.04	**58%**	**46%**	**4%**
6/2/2008	47.55		23.85	10.14		0.50	0.21		50%	79%
6/3/2008	55.46	33.55	38.16	8.32	0.61	0.69	0.15	39%	31%	85%
6/4/2008	42.76	37.37	37.82	3.91	0.87	0.88	0.09	13%	12%	91%
6/5/2008	48.79	40.38	34.67	7.35	0.83	0.71	0.15	17%	29%	85%
6/6/2008	58.51	34.10	23.89	6.60	0.58	0.41	0.11	42%	59%	89%
Average (Week 4)	50.61	36.35	31.68	7.27	0.72	0.64	0.14	**28%**	**36%**	**86%**
Standard Deviation	6.33	3.17	7.26	2.30	0.15	0.19	0.05	**15%**	**19%**	**5%**

School / Class ID	Configurations Used			
	05 / 12-16 / 08	*05 / 19-23 / 08*	*05 / 26-30 / 08*	*06 / 02-06 / 08*
Hudson / H-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-15	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-52	Baseline	HP-PF	RS + HP-PF	RS + HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Hudson Elementary School - PM_{10} (from filter-based measurements)

Date	Average Outdoor Concentration (µg/m³)	Average Indoor Concentration (µg/m³)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		H-11	H-15	H-52	H-11	H-15	H-52	H-11	H-15	H-52
5/12/2008	120	68		92	0.57		0.77	43%		23%
5/13/2008	110	46	20		0.42	0.18		58%	82%	
5/14/2008		45	43	24						
5/15/2008	130		42	26	0.00		0.20	100%		80%
5/16/2008		26		27						
Average (Week 1)	120	46	35	42	0.33	0.18	0.48	**67%**	**82%**	**52%**
Standard Deviation	10	17	13	33	0.29		0.40	**29%**		**40%**
5/19/2008	120	35		24	0.29		0.20	71%		80%
5/20/2008	78	29		61	0.37		0.78	63%		22%
5/21/2008	60	11		28	0.18		0.47	82%		53%
5/22/2008	130	39		29	0.30		0.22	70%		78%
5/23/2008	99	20		15	0.20		0.15	80%		85%
Average (Week 2)	97	27	46	31	0.27		0.36	**73%**		**64%**
Standard Deviation	29	11	19	17	0.08		0.26	**8%**		**26%**
5/26/2008										
5/27/2008	210	31		53	0.15		0.25	85%		75%
5/28/2008	120	34		23	0.28		0.19	72%		81%
5/29/2008	99	11		35	0.11		0.35	89%		65%
5/30/2008	87	20		19	0.23		0.22	77%		78%
Average (Week 3)	129	24	90	33	0.19		0.25	**81%**		**75%**
Standard Deviation	56	11	34	15	0.08		0.07	**8%**		**7%**
6/2/2008	120			41			0.34			66%
6/3/2008	110	30		30	0.27		0.27	73%		73%
6/4/2008	82	27		41	0.33		0.50	67%		50%
6/5/2008	100	35		36	0.35		0.36	65%		64%
6/6/2008	120	27		39	0.23		0.33	78%		68%
Average (Week 4)	106	30		37	0.29		0.36	**71%**		**64%**
Standard Deviation	16	4		5	0.06		0.08	**6%**		**8%**

School / Class ID	Configurations Used			
	05 / 12-16 / 08	*05 / 19-23 / 08*	*05 / 26-30 / 08*	*06 / 02-06 / 08*
Hudson / H-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-15	Baseline	HP-PF	RS + HP-PF	RS + HP-PF
Hudson / H-52	Baseline	HP-PF	RS + HP-PF	RS + HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Dominguez Elementary School - Black Carbon

Date	Average Outdoor Concentration (ng/m³)	Average Indoor Concentration (ng/m³)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		DZ-7	DZ-9	DZ-11	DZ-7	DZ-9	DZ-11	DZ-7	DZ-9	DZ-11
11/17/2008										
11/18/2008	5,137	2,149	4,384	5,096	0.42	0.85	0.99	58%	15%	1%
11/19/2008	8,787	3,951	5,935	6,332	0.45	0.68	0.72	55%	32%	28%
11/20/2008	9,243	3,932	7,292	6,616	0.43	0.79	0.72	57%	21%	28%
11/21/2008	11,210	6,967	8,270	8,928	0.62	0.74	0.80	38%	26%	20%
Average (Week 1)	8,594	4,250	6,470	6,743	0.48	0.76	0.81	**52%**	**24%**	**19%**
Standard Deviation	2,533	1,999	1,688	1,599	0.10	0.08	0.13	**10%**	**8%**	**13%**
11/24/2008	4,474	2,918	4,828	4,903	0.65	1.08	1.10	35%	-8%	-10%
11/25/2008	5,234	4,005	4,944	5,166	0.77	0.94	0.99	23%	6%	1%
11/26/2008										
11/27/2008										
11/28/2008										
Average (Week 2)	4,854	3,462	4,886	5,035	0.71	1.01	1.04	**29%**	**-1%**	**-4%**
Standard Deviation	538	768	82	186	0.08	0.10	0.08	**8%**	**10%**	**8%**
12/1/2008	8,642	2,023	2,996	2,744	0.23	0.35	0.32	77%	65%	68%
12/2/2008	2,434	268	217	187	0.11	0.09	0.08	89%	91%	92%
12/3/2008	4,351	557	1,024	444	0.13	0.24	0.10	87%	76%	90%
12/4/2008	3,953	819	354	267	0.21	0.09	0.07	79%	91%	93%
12/5/2008	5,734	766	856	346	0.13	0.15	0.06	87%	85%	94%
Average (Week 3)	5,023	887	1,089	798	0.16	0.18	0.12	**84%**	**82%**	**88%**
Standard Deviation	2,340	671	1,117	1,092	0.05	0.11	0.11	**5%**	**11%**	**11%**
12/8/2008	2,112	290	269	105	0.14	0.13	0.05	86%	87%	95%
12/9/2008	5,452	549	816	311	0.10	0.15	0.06	90%	85%	94%
12/10/2008	2,819	136	351	249	0.05	0.12	0.09	95%	88%	91%
12/11/2008	9,169	515	892	222	0.06	0.10	0.02	94%	90%	98%
12/12/2008	4,670	342	687	444	0.07	0.15	0.10	93%	85%	90%
Average (Week 4)	4,844	366	603	266	0.08	0.13	0.06	**92%**	**87%**	**94%**
Standard Deviation	2,769	169	279	124	0.04	0.02	0.03	**4%**	**2%**	**3%**
12/15/2008										
12/16/2008	3,274	209	432	187	0.06	0.13	0.06	94%	87%	94%
12/17/2008										
12/18/2008	1,976	397	325	109	0.20	0.16	0.05	80%	84%	95%
12/19/2008	4,558	320	904	234	0.07	0.20	0.05	93%	80%	95%
Average (Week 5)	3,269	308	554	177	0.11	0.16	0.05	**89%**	**84%**	**95%**
Standard Deviation	1,291	95	308	63	0.08	0.03	0.00	**8%**	**3%**	**0%**

School / Class ID	Configurations Used			
	11 / 18-26 / 08	*12 / 01-05 / 08*	*12 / 08-12 / 08*	*12 / 15-19 / 08*
Dominguez / DZ-7	Baseline	SA / SA + PF	SA + HP-PF	SA + HP-PF
Dominguez / DZ-9	Baseline	HP-PF	HP-PF	HP-PF
Dominguez / DZ-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Dominguez Elementary School - Ultra Fine Particles

Date	Average Outdoor Concentration (particles/cm^3)	Average Indoor Concentration (particles/cm^3)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		DZ-7	DZ-9	DZ-11	DZ-7	DZ-9	DZ-11	DZ-7	DZ-9	DZ-11
11/17/2008										
11/18/2008	25,476	5,422	12,344	12,550	0.21	0.48	0.49	79%	52%	51%
11/19/2008	42,651	9,488	19,540	24,676	0.22	0.46	0.58	78%	54%	42%
11/20/2008	39,794	10,924	24,111	21,528	0.27	0.61	0.54	73%	39%	46%
11/21/2008	38,976	12,874	18,814	22,150	0.33	0.48	0.57	67%	52%	43%
Average (Week 1)	36,724	9,677	18,702	20,226	0.26	0.51	0.55	**74%**	**49%**	**45%**
Standard Deviation	7,663	3,158	4,844	5,295	0.05	0.07	0.04	**5%**	**7%**	**4%**
11/24/2008	34,386	8,720	18,565	24,049	0.25	0.54	0.70	75%	46%	30%
11/25/2008	31,838	10,383	17,528	23,812	0.33	0.55	0.75	67%	45%	25%
11/26/2008										
11/27/2008										
11/28/2008										
Average (Week 2)	33,112	9,552	18,047	23,930	0.29	0.55	0.72	**71%**	**45%**	**28%**
Standard Deviation	1,802	1,176	733	168	0.05	0.01	0.03	**5%**	**1%**	**3%**
12/1/2008	41,439	8,349	9,891	13,190	0.20	0.24	0.32	80%	76%	68%
12/2/2008	17,370	1,000	1,962	1,613	0.06	0.11	0.09	94%	89%	91%
12/3/2008	16,420	1,805	3,508	2,413	0.11	0.21	0.15	89%	79%	85%
12/4/2008	16,970	2,768	2,214	1,469	0.16	0.13	0.09	84%	87%	91%
12/5/2008	29,061	2,522	5,130	2,277	0.09	0.18	0.08	91%	82%	92%
Average (Week 3)	24,252	3,289	4,541	4,192	0.12	0.17	0.14	**88%**	**83%**	**86%**
Standard Deviation	10,957	2,911	3,244	5,046	0.06	0.05	0.10	**6%**	**5%**	**10%**
12/8/2008	16,048	1,148	9,995	440	0.07	0.62	0.03	93%	38%	97%
12/9/2008	34,610	2,241	4,785	1,755	0.06	0.14	0.05	94%	86%	95%
12/10/2008	32,657	817	5,299	2,790	0.03	0.16	0.09	97%	84%	91%
12/11/2008	29,250	1,146	3,203	812	0.04	0.11	0.03	96%	89%	97%
12/12/2008	23,839	1,262	4,040	2,750	0.05	0.17	0.12	95%	83%	88%
Average (Week 4)	27,281	1,323	5,464	1,709	0.05	0.24	0.06	**95%**	**76%**	**94%**
Standard Deviation	7,492	539	2,653	1,080	0.02	0.22	0.04	**2%**	**22%**	**4%**
12/15/2008										
12/16/2008	26,441	1,066	4,072	1,209	0.04	0.15	0.05	96%	85%	95%
12/17/2008										
12/18/2008	23,513	3,355	2,871	1,283	0.14	0.12	0.05	86%	88%	95%
12/19/2008	28,783	1,247	7,747	2,101	0.04	0.27	0.07	96%	73%	93%
Average (Week 5)	26,246	1,889	4,897	1,531	0.08	0.18	0.06	**92%**	**82%**	**94%**
Standard Deviation	2,641	1,272	2,540	495	0.06	0.08	0.01	**6%**	**8%**	**1%**

School / Class ID	Configurations Used			
	11 / 18-26 / 08	*12 / 01-05 / 08*	*12 / 08-12 / 08*	*12 / 15-19 / 08*
Dominguez / DZ-7	Baseline	SA / SA + PF	SA + HP-PF	SA + HP-PF
Dominguez / DZ-9	Baseline	HP-PF	HP-PF	HP-PF
Dominguez / DZ-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Dominguez Elementary School - $PM_{2.5}$ (count)

Date	Average Outdoor Concentration (particles/ft^3)	Average Indoor Concentration (particles/ft^3)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		DZ-7	DZ-9	DZ-11	DZ-7	DZ-9	DZ-11	DZ-7	DZ-9	DZ-11
11/17/2008										
11/18/2008										
11/19/2008	8,866,226	1,411,242	2,600,108	3,571,960	0.16	0.29	0.40	84%	71%	60%
11/20/2008	8,237,390	1,286,754	3,015,586	2,734,509	0.16	0.37	0.33	84%	63%	67%
11/21/2008	7,625,250	1,471,170	2,634,126	3,393,425	0.19	0.35	0.45	81%	65%	55%
Average (Week 1)	8,242,955	1,389,722	2,749,940	3,233,298	0.17	0.33	0.39	**87%**	**75%**	**71%**
Standard Deviation	620,507	94,073	230,684	441,091	0.02	0.04	0.06	**9%**	**17%**	**20%**
11/24/2008	8,511,436	1,151,144	3,000,744	3,943,011	0.14	0.35	0.46	86%	65%	54%
11/25/2008	6,035,358	949,498	1,853,996	2,542,878	0.16	0.31	0.42	84%	69%	58%
11/26/2008										
11/27/2008										
11/28/2008										
Average (Week 2)	7,273,397	1,050,321	2,427,370	3,242,944	0.15	0.33	0.44	**85%**	**67%**	**56%**
Standard Deviation	1,750,852	142,585	810,873	990,043	0.02	0.03	0.03	**2%**	**3%**	**3%**
12/1/2008	7,115,843	375,673	1,197,684	1,210,391	0.05	0.17	0.17	95%	83%	83%
12/2/2008	6,472,443	120,635	344,786	289,496	0.02	0.05	0.04	98%	95%	96%
12/3/2008	10,298,411	190,597	1,628,370	753,983	0.02	0.16	0.07	98%	84%	93%
12/4/2008	10,129,374	294,693	520,489	458,324	0.03	0.05	0.05	97%	95%	95%
12/5/2008	5,018,869	103,392	368,715	228,546	0.02	0.07	0.05	98%	93%	95%
Average (Week 3)	7,806,988	216,998	812,009	588,148	0.03	0.10	0.08	**97%**	**90%**	**92%**
Standard Deviation	2,325,563	116,301	573,363	403,128	0.01	0.06	0.05	**1%**	**6%**	**5%**
12/8/2008	1,539,967	207,455	112,870		0.13	0.07		87%	93%	
12/9/2008	2,540,284	271,444	165,653	85,637	0.11	0.07	0.03	89%	93%	97%
12/10/2008	425,792	74,899	59,053	73,412	0.18	0.14	0.17	82%	86%	83%
12/11/2008	2,040,036	147,307	136,505	62,538	0.07	0.07	0.03	93%	93%	97%
12/12/2008	2,259,506	157,821	151,593	190,241	0.07	0.07	0.08	93%	93%	92%
Average (Week 4)	1,761,117	171,785	125,135	102,957	0.11	0.08	0.08	**89%**	**92%**	**92%**
Standard Deviation	831,458	73,119	41,798	58,950	0.04	0.03	0.07	**4%**	**3%**	**7%**
12/15/2008										
12/16/2008	518,108	83,088	73,452	54,664	0.16	0.14	0.11	84%	86%	89%
12/17/2008										
12/18/2008		148,282	83,984	1,067						
12/19/2008		108,951	203,523	2,678						
Average (Week 5)	518,108	113,440	120,320	19,470	0.16	0.14	0.11	**84%**	**86%**	**89%**
Standard Deviation		32,828	72,249	30,490						

School / Class ID	Configurations Used			
	11 / 18-26 / 08	*12 / 01-05 / 08*	*12 / 08-12 / 08*	*12 / 15-19 / 08*
Dominguez / DZ-7	Baseline	SA / SA + PF	SA + HP-PF	SA + HP-PF
Dominguez / DZ-9	Baseline	HP-PF	HP-PF	HP-PF
Dominguez / DZ-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Dominguez Elementary School - $PM_{2.5}$ (mass)

Date	Average Outdoor Concentration (µg/m³)	Average Indoor Concentration (µg/m³)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		DZ-7	DZ-9	DZ-11	DZ-7	DZ-9	DZ-11	DZ-7	DZ-9	DZ-11
11/17/2008										
11/18/2008	4.11	4.66	3.70	11.47	1.13	0.90	2.79	-13%	10%	-179%
11/19/2008	13.52	9.93	6.52	10.89	0.73	0.48	0.81	27%	52%	19%
11/20/2008	30.59	10.79	14.26	12.27	0.35	0.47	0.40	65%	53%	60%
11/21/2008	16.15	11.71	8.78	11.07	0.72	0.54	0.69	28%	46%	31%
Average (Week 1)	16.09	9.27	8.31	11.43	0.74	0.60	1.17	**26%**	**40%**	**-17%**
Standard Deviation	10.96	3.16	4.48	0.61	0.32	0.20	1.09	**32%**	**20%**	**109%**
11/24/2008	17.12	11.75	12.16	18.94	0.69	0.71	1.11	31%	29%	-11%
11/25/2008	12.77	15.62	11.33	17.13	1.22	0.89	1.34	-22%	11%	-34%
11/26/2008										
11/27/2008										
11/28/2008										
Average (Week 2)	14.95	13.69	11.74	18.04	0.95	0.80	1.22	**5%**	**20%**	**-22%**
Standard Deviation	3.07	2.73	0.58	1.28	0.38	0.13	0.17	**38%**	**13%**	**17%**
12/1/2008	17.46	3.27	5.87	3.81	0.19	0.34	0.22	81%	66%	78%
12/2/2008	9.45	2.08	0.87	0.87	0.22	0.09	0.09	78%	91%	91%
12/3/2008	35.25	3.24	8.29	2.21	0.09	0.24	0.06	91%	76%	94%
12/4/2008	27.93	4.50	1.85	1.27	0.16	0.07	0.05	84%	93%	95%
12/5/2008	13.35	1.84	1.71	1.22	0.14	0.13	0.09	86%	87%	91%
Average (Week 3)	20.69	2.99	3.72	1.87	0.16	0.17	0.10	**84%**	**83%**	**90%**
Standard Deviation	10.67	1.07	3.21	1.19	0.05	0.11	0.07	**5%**	**11%**	**7%**
12/8/2008	5.77	2.08	1.10	0.79	0.36	0.19	0.14	64%	81%	86%
12/9/2008	7.96	2.55	0.87	0.87	0.32	0.11	0.11	68%	89%	89%
12/10/2008	1.80	0.84	1.02	1.10	0.47	0.57	0.61	53%	43%	39%
12/11/2008	5.82	1.01	0.79	0.88	0.17	0.14	0.15	83%	86%	85%
12/12/2008	10.99	0.94	1.35	1.91	0.09	0.12	0.17	91%	88%	83%
Average (Week 4)	6.47	1.49	1.03	1.11	0.28	0.23	0.24	**72%**	**77%**	**76%**
Standard Deviation	3.37	0.78	0.22	0.46	0.15	0.20	0.21	**15%**	**20%**	**21%**
12/15/2008										
12/16/2008	3.31	0.55	0.41	0.57	0.17	0.12	0.17	83%	88%	83%
12/17/2008										
12/18/2008	1.29	0.73	0.75	0.14	0.57	0.58	0.11	43%	42%	89%
12/19/2008	6.18	0.59	1.48	0.68	0.10	0.24	0.11	90%	76%	89%
Average (Week 5)	3.59	0.63	0.88	0.46	0.28	0.31	0.13	**72%**	**69%**	**87%**
Standard Deviation	2.46	0.09	0.55	0.29	0.25	0.24	0.04	**25%**	**24%**	**4%**

School / Class ID	Configurations Used			
	11 / 18-26 / 08	*12 / 01-05 / 08*	*12 / 08-12 / 08*	*12 / 15-19 / 08*
Dominguez / DZ-7	Baseline	SA / SA + PF	SA + HP-PF	SA + HP-PF
Dominguez / DZ-9	Baseline	HP-PF	HP-PF	HP-PF
Dominguez / DZ-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Dominguez Elementary School - PM_{10} (from particle mass monitor measurements)

Date	Average Outdoor Concentration (μg/m³)	Average Indoor Concentration (μg/m³)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		DZ-7	DZ-9	DZ-11	DZ-7	DZ-9	DZ-11	DZ-7	DZ-9	DZ-11
11/17/2008										
11/18/2008	51.98	64.34	34.38	91.83	1.24	0.66	1.77	-24%	34%	-77%
11/19/2008	52.85	73.95	47.85	79.93	1.40	0.91	1.51	-40%	9%	-51%
11/20/2008	84.85	62.75	69.89	85.40	0.74	0.82	1.01	26%	18%	-1%
11/21/2008	61.53	69.08	58.16	72.86	1.12	0.95	1.18	-12%	5%	-18%
Average (Week 1)	62.81	67.53	52.57	82.51	1.12	0.83	1.37	**-12%**	**17%**	**-37%**
Standard Deviation	15.32	5.06	15.11	8.06	0.28	0.13	0.34	**28%**	**13%**	**34%**
11/24/2008	50.13	74.55	76.61	135.45	1.49	1.53	2.70	-49%	-53%	-170%
11/25/2008	48.79	98.76	88.63	128.96	2.02	1.82	2.64	-102%	-82%	-164%
11/26/2008										
11/27/2008										
11/28/2008										
Average (Week 2)	49.46	86.66	82.62	132.21	1.76	1.67	2.67	**-76%**	**-67%**	**-167%**
Standard Deviation	0.95	17.12	8.49	4.59	0.38	0.20	0.04	**38%**	**20%**	**4%**
12/1/2008	86.09	27.81	54.38	37.73	0.32	0.63	0.44	68%	37%	56%
12/2/2008	25.06	26.79	16.38	15.78	1.07	0.65	0.63	-7%	35%	37%
12/3/2008	57.34	13.40	43.07	18.36	0.23	0.75	0.32	77%	25%	68%
12/4/2008	52.74	23.08	13.42	12.93	0.44	0.25	0.25	56%	75%	75%
12/5/2008	41.97	14.59	17.31	18.03	0.35	0.41	0.43	65%	59%	57%
Average (Week 3)	52.64	21.13	28.91	20.56	0.48	0.54	0.41	**52%**	**46%**	**59%**
Standard Deviation	22.45	6.76	18.58	9.84	0.34	0.20	0.15	**34%**	**20%**	**15%**
12/8/2008	28.57	21.91	19.27	18.93	0.77	0.67	0.66	23%	33%	34%
12/9/2008	39.04	23.09	11.40	17.01	0.59	0.29	0.44	41%	71%	56%
12/10/2008	21.52	11.43	16.69	18.02	0.53	0.78	0.84	47%	22%	16%
12/11/2008	44.75	11.02	12.31	15.96	0.25	0.28	0.36	75%	72%	64%
12/12/2008	46.70	11.24	18.51	24.48	0.24	0.40	0.52	76%	60%	48%
Average (Week 4)	36.12	15.74	15.63	18.88	0.48	0.48	0.56	**52%**	**52%**	**44%**
Standard Deviation	10.78	6.19	3.59	3.32	0.23	0.23	0.19	**23%**	**23%**	**19%**
12/15/2008										
12/16/2008	15.49	8.83	8.94	14.83	0.57	0.58	0.96	43%	42%	4%
12/17/2008										
12/18/2008	7.99	14.10	19.02	8.39	1.76	2.38	1.05	-76%	-138%	-5%
12/19/2008	27.12	10.76	23.70	14.98	0.40	0.87	0.55	60%	13%	45%
Average (Week 5)	16.87	11.23	17.22	12.73	0.91	1.28	0.85	**9%**	**-28%**	**15%**
Standard Deviation	9.64	2.66	7.54	3.76	0.74	0.97	0.26	**74%**	**97%**	**26%**

School / Class ID	Configurations Used			
	11 / 18-26 / 08	*12 / 01-05 / 08*	*12 / 08-12 / 08*	*12 / 15-19 / 08*
Dominguez / DZ-7	Baseline	SA / SA + PF	SA + HP-PF	SA + HP-PF
Dominguez / DZ-9	Baseline	HP-PF	HP-PF	HP-PF
Dominguez / DZ-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

Dominguez Elementary School - PM_{10} (from filter-based measurements)

Date	Average Outdoor Concentration (µg/m³)	Average Indoor Concentration (µg/m³)			Average Indoor/Outdoor Ratio			Average Removal Efficiency		
		DZ-7	DZ-9	DZ-11	DZ-7	DZ-9	DZ-11	DZ-7	DZ-9	DZ-11
11/17/2008										
11/18/2008	720	940	740	310	1.31	1.03	0.43	-31%	-3%	57%
11/19/2008	290	100	250	160	0.34	0.86	0.55	66%	14%	45%
11/20/2008	33	220	150	38	6.67	4.55	1.15	-567%	-355%	-15%
11/21/2008	200	120	180	25	0.60	0.90	0.13	40%	10%	88%
Average (Week 1)	311	345	330	133	2.23	1.83	0.56	**-123%**	**-83%**	**44%**
Standard Deviation	293	400	277	133	2.99	1.81	0.43	**299%**	**181%**	**43%**
11/24/2008	180	220	200	180	1.22	1.11	1.00	-22%	-11%	0%
11/25/2008	150	220	140	140	1.47	0.93	0.93	-47%	7%	7%
11/26/2008										
11/27/2008										
11/28/2008										
Average (Week 2)	165	220	170	160	1.34	1.02	0.97	**-34%**	**-2%**	**3%**
Standard Deviation	21	0	42	28	0.17	0.13	0.05	**17%**	**13%**	**5%**
12/1/2008	180	280	180	82	1.56	1.00	0.46	-56%	0%	54%
12/2/2008	130	170	110	40	1.31	0.85	0.31	-31%	15%	69%
12/3/2008	150	110	120	36	0.73	0.80	0.24	27%	20%	76%
12/4/2008	140	120	90	36	0.86	0.64	0.26	14%	36%	74%
12/5/2008	130	91	87	41	0.70	0.67	0.32	30%	33%	68%
Average (Week 3)	146	154	117	47	1.03	0.79	0.32	**-3%**	**21%**	**68%**
Standard Deviation	21	76	38	20	0.38	0.14	0.08	**38%**	**14%**	**8%**
12/8/2008	140	150	120	25	1.07	0.86	0.18	-7%	14%	82%
12/9/2008	130	100	100	30	0.77	0.77	0.23	23%	23%	77%
12/10/2008	91	95	100	34	1.04	1.10	0.37	-4%	-10%	63%
12/11/2008	130	82	77	33	0.63	0.59	0.25	37%	41%	75%
12/12/2008	140	78	36	87	0.56	0.26	0.62	44%	74%	38%
Average (Week 4)	126	101	87	42	0.81	0.71	0.33	**19%**	**29%**	**67%**
Standard Deviation	20	29	32	26	0.23	0.31	0.18	**23%**	**31%**	**18%**
12/15/2008										
12/16/2008	91	84	70	30	0.92	0.77	0.33	8%	23%	67%
12/17/2008										
12/18/2008	71	79	68	17	1.11	0.96	0.24	-11%	4%	76%
12/19/2008	93	75	73	23	0.81	0.78	0.25	19%	22%	75%
Average (Week 5)	85	79	70	23	0.95	0.84	0.27	**5%**	**16%**	**73%**
Standard Deviation	12	5	3	7	0.15	0.10	0.05	**15%**	**10%**	**5%**

School / Class ID	Configurations Used			
	11 / 18-26 / 08	*12 / 01-05 / 08*	*12 / 08-12 / 08*	*12 / 15-19 / 08*
Dominguez / DZ-7	Baseline	SA / SA + PF	SA + HP-PF	SA + HP-PF
Dominguez / DZ-9	Baseline	HP-PF	HP-PF	HP-PF
Dominguez / DZ-11	Baseline	HP-PF	RS + HP-PF	RS + HP-PF

HP-PF = HVAC-based high-performance panel filter
RS = register-based air purifier
SA = stand alone system
PF = conventional / medium efficiency panel filter

APPENDIX B. Daily average concentrations of individual VOCs measured outside Dominguez elementary school and inside three of its classrooms (here referred to as DZ-7, DZ-9, and DZ-11)

Dominguez Elementary School - Outdoor VOC data

			VOC concentration (ppbv)					
SPECIATED ORGANIC COMPOUNDS	**Reporting Limit (ppbv)**	**Method Detection limit (ppbv)**	**11/18/08**	**11/19/08**	**11/20/08**	**11/21/08**	**11/24/08**	**11/25/08**
Propylene	1.0	0.04	7.7	5.7	4.5		4.7	3.2
Freon 12 (Dichlorodifluoromethane)	0.5	0.04	0.7	0.7	0.7	0.7	0.6	0.6
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03	0.03		0.02		0.02	0.02
Chloromethane	0.5	0.08	0.6	0.7	0.6	0.6	0.6	0.6
Vinyl chloride	0.5	0.04						
Bromomethane	0.5	0.05			0.07			0.03
Ethanol	1.5	0.30	47	36	24	24	15	14
Freon 11(Trichlorofluoromethane)	0.5	0.04			0.3			0.2
Isopropyl alcohol(2-Propanol)	1.5	0.03	7.7	5.4	2.1	4.9	2	1.9
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06	0.07	0.06	0.06	0.07	0.06	0.06
Acetone	3.0	0.08	25	23	16	20	17	11
Carbon disulfide	1.0	0.04	0.04	0.06	0.03	0.04	0.04	0.01
Methylene chloride	1.5	0.04	1.2	1	0.6	1.1	0.6	0.4
Methyl-tert-butyl ether(MTBE)	0.5	0.05						
trans-1,2-Dichloroethene	0.5	0.04						
n-Hexane	0.5	0.03	1	1	1.2	1.2	0.5	0.4
1,-Dichloroethane	0.5	0.04						
Vinyl acetate	0.5	0.05						
2-Butanone(MEK)	1.5	0.07	1.8	3	3	1.9	1.8	0.9
cis-1,2-Dichloroethene	0.5	0.05						
Ethyl acetate	0.5	0.07	0.5	0.6	0.2	0.4	0.2	0.2
Chloroform	0.5	0.03		0.08	0.06	0.08	0.03	0.03
Tetrahydrofuran	0.5	0.07		0.2	0.2	0.3	0.3	0.2
1,1,1-Trichloroethane	0.5	0.04				0.02		
Cyclohexane	0.5	0.04	0.7	0.6	0.6	0.7	0.2	0.2
Carbon tetrachloride	0.5	0.04	0.08	0.07	0.07	0.07	0.07	0.06
n-Heptane	0.5	0.04	0.9	0.7	0.7	0.8	0.4	0.3
1,2-Dichlroethane	0.5	0.02						
Benzene	0.5	0.02	1.2	1.2	1	1.4	0.6	0.5
Trichloroethene	0.5	0.04	0.1	0.09	0.05	0.06	0.03	0.05
1,2-Dichloropropane	0.5	0.05						
Bromodichloromethane	0.5	0.04			0.04			
4-Methyl-2-pentanone(MIBK)	0.5	0.06		0.2	0.2	0.2	0.2	0.09
cis-1,3-Dichloropropene	0.5	0.04						
Toluene	0.5	0.05	5.2	4.8	3.8	5.5	2.2	1.8
trans-1,3-Dichloropropene	0.5	0.04						
1,1,2-Trichloroethane	0.5	0.06						
2-Hexanone(MBK)	1.5	0.05		0.2	0.4		0.1	
Tetrachloroethene	0.5	0.04	0.3	0.2	0.09	0.2	0.08	0.08
Dibromochloromethane	0.5	0.06	0.02		0.01			
1,2-Dibromoethane	0.5	0.06						
Chlorobenzene	0.5	0.04						
Ethylbenzene	0.5	0.05	0.7	0.8	0.6	0.8	0.4	0.3
Xylene (para & meta)	1.0	0.10	2.3	2.2	1.9	2.6	1.2	1
Xylene (Ortho)	0.5	0.05	0.9	0.9	0.8	1	0.5	0.4
Styrene	0.5	0.05	1.4	0.7	0.8	0.4	0.9	0.2
Bromoform	0.5	0.05			0.01			
1,1,2,2-Tetrachloroethane	0.5	0.08						
4-Ethyltoluene	0.5	0.06	0.8	0.8	0.6	0.9	0.4	0.3
1,3,5-Trimethylbenzene	0.5	0.05	0.2	0.2		0.3	0.1	0.09
1,2,4-Trimethylbenzene	0.5	0.08	0.8	0.7	0.6	0.9	0.4	0.3
1,3-Dichlorobenzene	0.5	0.06						
1,4-Dichlorobenzene	0.5	0.05	0.09	0.1	0.09		0.07	0.04
Benzyl chloride	0.5	0.06						
1,2-Dichlorobenzene	0.5	0.10			0.01			
1,2,4-Trichlorobenzene	1.0	0.10						
Hexachloro-1,3-butadiene	0.5	0.30	0.03	0.02				

Dominguez Elementary School - Outdoor VOC data

SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv) 11/26/08	12/1/08	12/2/08	12/3/08	12/4/08	12/5/08
Propylene	1.0	0.04		4.6	1.5		1.4	2.6
Freon 12 (Dichlorodifluoromethane)	0.5	0.04	1	0.5	0.5		0.4	0.6
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03	0.02	0.01	0.02	0.05	0.04	0.05
Chloromethane	0.5	0.08	0.6	0.5	0.5	0.5	0.7	0.5
Vinyl chloride	0.5	0.04				0.06		
Bromomethane	0.5	0.05	0.03	0.07		0.07	0.04	
Ethanol	1.5	0.30	21	14	6.4	7	11	13
Freon 11(Trichlorofluoromethane)	0.5	0.04	0.4		0.2	0.2	0.2	0.4
Isopropyl alcohol(2-Propanol)	1.5	0.03	4.8	1.4	1.1	0.6	1.7	1.5
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06	0.07	0.07		0.1	0.07	0.08
Acetone	3.0	0.08	15	18	20	13	17	19
Carbon disulfide	1.0	0.04	0.03	0.03		0.08	0.07	0.1
Methylene chloride	1.5	0.04	0.2	0.4	0.1	0.3	0.4	0.5
Methyl-tert-butyl ether(MTBE)	0.5	0.05					0.04	
trans-1,2-Dichloroethene	0.5	0.04					0.03	
n-Hexane	0.5	0.03	0.2	1.4	0.3	0.3	0.3	0.5
1,-Dichloroethane	0.5	0.04					0.03	
Vinyl acetate	0.5	0.05					0.06	
2-Butanone(MEK)	1.5	0.07	1.6	2.5	5.4	2.3	4.4	1.5
cis-1,2-Dichloroethene	0.5	0.05					0.03	
Ethyl acetate	0.5	0.07					0.2	0.2
Chloroform	0.5	0.03		0.06		0.08	0.05	0.08
Tetrahydrofuran	0.5	0.07						
1,1,1-Trichloroethane	0.5	0.04					0.03	
Cyclohexane	0.5	0.04		0.7		0.2	0.2	0.3
Carbon tetrachloride	0.5	0.04	0.07	0.07	0.07	0.1	0.07	0.06
n-Heptane	0.5	0.04	0.3			0.2	0.2	0.4
1,2-Dichlroethane	0.5	0.02					0.05	
Benzene	0.5	0.02	0.3	1.2	0.2	0.4	0.3	0.8
Trichloroethene	0.5	0.04	0.03	0.05		0.06	0.09	0.05
1,2-Dichloropropane	0.5	0.05					0.04	
Bromodichloromethane	0.5	0.04				0.04	0.04	
4-Methyl-2-pentanone(MIBK)	0.5	0.06	0.08	0.08	0.1	0.1	0.2	0.09
cis-1,3-Dichloropropene	0.5	0.04					0.03	
Toluene	0.5	0.05	0.9	4.2	0.6	0.9	1.2	2.4
trans-1,3-Dichloropropene	0.5	0.04				0.03	0.03	0.03
1,1,2-Trichloroethane	0.5	0.06					0.04	
2-Hexanone(MBK)	1.5	0.05	0.3	0.2	0.4	0.3	0.9	0.1
Tetrachloroethene	0.5	0.04	0.02	0.09		0.07	0.07	0.09
Dibromochloromethane	0.5	0.06				0.04	0.02	
1,2-Dibromoethane	0.5	0.06					0.03	
Chlorobenzene	0.5	0.04					0.04	0.03
Ethylbenzene	0.5	0.05	0.2	0.6	0.08	0.2	0.2	0.3
Xylene (para & meta)	1.0	0.10	0.4	1.9	0.2	0.4	0.6	1
Xylene (Ortho)	0.5	0.05	0.2	0.8	0.1	0.2	0.3	0.4
Styrene	0.5	0.05	0.09	0.8	0.06	0.1	0.1	1
Bromoform	0.5	0.05					0.02	
1,1,2,2-Tetrachloroethane	0.5	0.08				0.06	0.06	0.04
4-Ethyltoluene	0.5	0.06	0.2	0.6	0.08	0.1	0.2	0.3
1,3,5-Trimethylbenzene	0.5	0.05	0.05	0.1	0.02	0.06		0.1
1,2,4-Trimethylbenzene	0.5	0.08	0.2	0.6	0.08	0.1	0.2	0.3
1,3-Dichlorobenzene	0.5	0.06				0.04	0.04	0.03
1,4-Dichlorobenzene	0.5	0.05	0.05	0.06		0.05	0.05	0.04
Benzyl chloride	0.5	0.06				0.04	0.05	
1,2-Dichlorobenzene	0.5	0.10	0.02			0.04	0.04	0.03
1,2,4-Trichlorobenzene	1.0	0.10	0.2			0.07	0.06	0.04
Hexachloro-1,3-butadiene	0.5	0.30	0.04			0.05	0.05	0.04

Dominguez Elementary School - Outdoor VOC data

SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			12/8/08	12/9/08	12/10/08	12/11/08	12/12/08	12/15/08
Propylene	1.0	0.04	1.2		1.6	2.3	2.6	1.1
Freon 12 (Dichlorodifluoromethane)	0.5	0.04	0.5	0.6	0.5	0.4	0.4	0.4
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03	0.03	0.03	0.03	0.02	0.03	
Chloromethane	0.5	0.08	0.4	0.04	0.4	0.5	0.4	0.5
Vinyl chloride	0.5	0.04						
Bromomethane	0.5	0.05						
Ethanol	1.5	0.30	3.1	13	6.3	9.4	9.1	14
Freon 11(Trichlorofluoromethane)	0.5	0.04	0.3	0.3	0.3			0.2
Isopropyl alcohol(2-Propanol)	1.5	0.03	0.7	3.3	1	1.6		4.6
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06	0.08	0.08	0.08	0.05	0.06	0.05
Acetone	3.0	0.08	4.3	23	9.8	13	11	8
Carbon disulfide	1.0	0.04	0.03	0.05	0.04	0.04	0.04	0.01
Methylene chloride	1.5	0.04	0.2	0.5	0.3	0.5	0.5	
Methyl-tert-butyl ether(MTBE)	0.5	0.05						
trans-1,2-Dichloroethene	0.5	0.04						
n-Hexane	0.5	0.03	0.2	0.8	0.2	0.7	0.8	0.2
1,-Dichloroethane	0.5	0.04						
Vinyl acetate	0.5	0.05						
2-Butanone(MEK)	1.5	0.07	0.4	1.3	0.8	1.8	1.5	0.8
cis-1,2-Dichloroethene	0.5	0.05						
Ethyl acetate	0.5	0.07		0.4		0.1	0.2	
Chloroform	0.5	0.03	0.04	0.07				
Tetrahydrofuran	0.5	0.07		1.4				
1,1,1-Trichloroethane	0.5	0.04						
Cyclohexane	0.5	0.04	0.1	0.5	0.2	0.3	0.4	0.1
Carbon tetrachloride	0.5	0.04	0.08	0.07	0.07	0.05	0.06	0.06
n-Heptane	0.5	0.04	0.1	0.5		0.4	0.4	0.2
1,2-Dichlroethane	0.5	0.02						
Benzene	0.5	0.02	0.3	1.5	0.4	0.6	0.7	0.3
Trichloroethene	0.5	0.04	0.02	0.05	0.02	0.03	0.03	0.02
1,2-Dichloropropane	0.5	0.05						
Bromodichloromethane	0.5	0.04						
4-Methyl-2-pentanone(MIBK)	0.5	0.06	0.04	0.1	0.05	0.08	0.2	
cis-1,3-Dichloropropene	0.5	0.04						
Toluene	0.5	0.05	0.7	4.5	1.3	2.2	2.2	0.8
trans-1,3-Dichloropropene	0.5	0.04						
1,1,2-Trichloroethane	0.5	0.06						
2-Hexanone(MBK)	1.5	0.05	0.03		0.1	0.3	0.3	0.1
Tetrachloroethene	0.5	0.04	0.03	0.1	0.04	0.08	0.08	0.04
Dibromochloromethane	0.5	0.06						
1,2-Dibromoethane	0.5	0.06						
Chlorobenzene	0.5	0.04	0.01					
Ethylbenzene	0.5	0.05	0.1	0.6	0.2	0.4	0.4	0.2
Xylene (para & meta)	1.0	0.10	0.3	2.1	0.6	1.1	1.2	0.5
Xylene (Ortho)	0.5	0.05	0.1	0.8	0.2	0.4	0.4	0.2
Styrene	0.5	0.05	0.05	1.7	0.5	0.2	0.3	0.1
Bromoform	0.5	0.05						
1,1,2,2-Tetrachloroethane	0.5	0.08					0.06	
4-Ethyltoluene	0.5	0.06	0.1	0.6	0.2	0.3	0.4	0.2
1,3,5-Trimethylbenzene	0.5	0.05	0.03	0.2	0.05	0.09	0.1	0.05
1,2,4-Trimethylbenzene	0.5	0.08	0.1	0.6	0.2	0.3	0.4	0.2
1,3-Dichlorobenzene	0.5	0.06	0.01				0.03	
1,4-Dichlorobenzene	0.5	0.05	0.02	0.04	0.01	0.04	0.05	0.02
Benzyl chloride	0.5	0.06		0.02				
1,2-Dichlorobenzene	0.5	0.10	0.01			0.01	0.03	
1,2,4-Trichlorobenzene	1.0	0.10	0.02		0.02	0.05	0.08	0.03
Hexachloro-1,3-butadiene	0.5	0.30				0.02		

Dominguez Elementary School - Outdoor VOC data

SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv) 12/16/08	12/17/08	12/18/08	12/19/08
Propylene	1.0	0.04	2.4		1.4	2.6
Freon 12 (Dichlorodifluoromethane)	0.5	0.04	0.4	0.4	0.4	0.4
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03				
Chloromethane	0.5	0.08	0.5	0.5	0.4	0.4
Vinyl chloride	0.5	0.04				
Bromomethane	0.5	0.05				
Ethanol	1.5	0.30	7.6	1.7	4.3	8.4
Freon 11(Trichlorofluoromethane)	0.5	0.04	0.2	0.2	0.2	0.2
Isopropyl alcohol(2-Propanol)	1.5	0.03	1.7			1.4
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06	0.06	0.05		
Acetone	3.0	0.08	10	1.2	6.8	13
Carbon disulfide	1.0	0.04			0.02	
Methylene chloride	1.5	0.04	0.3	0.08	0.1	0.3
Methyl-tert-butyl ether(MTBE)	0.5	0.05				
trans-1,2-Dichloroethene	0.5	0.04				
n-Hexane	0.5	0.03	0.3	0.03	0.2	0.3
1,-Dichloroethane	0.5	0.04				
Vinyl acetate	0.5	0.05				
2-Butanone(MEK)	1.5	0.07	0.9	0.1	1.1	1.3
cis-1,2-Dichloroethene	0.5	0.05				
Ethyl acetate	0.5	0.07				
Chloroform	0.5	0.03				
Tetrahydrofuran	0.5	0.07				
1,1,1-Trichloroethane	0.5	0.04				
Cyclohexane	0.5	0.04	0.2		0.1	0.2
Carbon tetrachloride	0.5	0.04	0.06	0.05	0.05	0.05
n-Heptane	0.5	0.04	0.5			0.4
1,2-Dichlroethane	0.5	0.02				
Benzene	0.5	0.02	0.5	0.1	0.3	0.6
Trichloroethene	0.5	0.04	0.02			0.02
1,2-Dichloropropane	0.5	0.05				
Bromodichloromethane	0.5	0.04				
4-Methyl-2-pentanone(MIBK)	0.5	0.06				
cis-1,3-Dichloropropene	0.5	0.04				
Toluene	0.5	0.05	1.4	0.2	0.8	1.8
trans-1,3-Dichloropropene	0.5	0.04				
1,1,2-Trichloroethane	0.5	0.06				
2-Hexanone(MBK)	1.5	0.05	0.1		0.2	0.3
Tetrachloroethene	0.5	0.04	0.06			0.04
Dibromochloromethane	0.5	0.06				
1,2-Dibromoethane	0.5	0.06				
Chlorobenzene	0.5	0.04				
Ethylbenzene	0.5	0.05	0.2	0.03	0.1	0.3
Xylene (para & meta)	1.0	0.10	0.7	0.09	0.4	0.9
Xylene (Ortho)	0.5	0.05	0.3	0.04	0.2	0.4
Styrene	0.5	0.05	0.2		0.04	0.7
Bromoform	0.5	0.05				
1,1,2,2-Tetrachloroethane	0.5	0.08				
4-Ethyltoluene	0.5	0.06	0.2	0.03	0.1	0.3
1,3,5-Trimethylbenzene	0.5	0.05		0.01	0.04	0.08
1,2,4-Trimethylbenzene	0.5	0.08	0.2	0.03	0.1	0.3
1,3-Dichlorobenzene	0.5	0.06				
1,4-Dichlorobenzene	0.5	0.05	0.01		0.01	0.02
Benzyl chloride	0.5	0.06				
1,2-Dichlorobenzene	0.5	0.10				
1,2,4-Trichlorobenzene	1.0	0.10				
Hexachloro-1,3-butadiene	0.5	0.30				

Dominguez Elementary School - Outdoor VOC data

TENTATIVELY IDENTIFIED COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			11/18/08	11/19/08	11/20/08	11/21/08	11/24/08	11/25/08
2,2,3,3-Tetramethyl butane	N/A	N/A						
2,2,4-Trimethyl pentane	N/A	N/A						
2,2-Dimethyl hexane	N/A	N/A	2.1	2.1	2.1	2.5		
2,3-Dimethyl pentane	N/A	N/A	1.4	1.2	1	1.5		
2,4-Dimethyl hexane	N/A	N/A						
2-Methyl butane	N/A	N/A	7.8	7.9	9.2	9	4.2	3.6
2-Methyl hexane	N/A	N/A	1.2			1.2		
2-Methyl pentane	N/A	N/A	3.2	3.3	3.5	3.9	1.6	1.3
2-Pentene	N/A	N/A						
3-Methyl hexane	N/A	N/A	1.5	1.2	1.1	1.5		
3-Methyl pentane	N/A	N/A	1.7	1.8	2	2.1		
Acetaldehyde	N/A	N/A		1.6	2.1		1.8	
Butanal	N/A	N/A						
Butane	N/A	N/A	5.5	6.8	8.6	6.5	3.5	2.9
Difluorochloromethane	N/A	N/A				5.6		
Heptanal	N/A	N/A						
Hexamethyl cyclotrisiloxane	N/A	N/A					2.6	
Isobutane	N/A	N/A	4.4	5.1	4.5	4.6	3.1	2.6
Limonene	N/A	N/A						
Methyl cyclohexane	N/A	N/A						
Methyl cyclopentane	N/A	N/A	1.4	1.5	1.8	1.8		
Octamethyl cyclotrisiloxane	N/A	N/A						
Pentane	N/A	N/A	3.5	3.7		4.1	2.3	
Trimethyl silanol	N/A	N/A						

Dominguez Elementary School - Outdoor VOC data

TENTATIVELY IDENTIFIED COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			11/26/08	12/1/08	12/2/08	12/3/08	12/4/08	12/5/08
2,2,3,3-Tetramethyl butane	N/A	N/A						
2,2,4-Trimethyl pentane	N/A	N/A						1.2
2,2-Dimethyl hexane	N/A	N/A						
2,3-Dimethyl pentane	N/A	N/A		1				
2,4-Dimethyl hexane	N/A	N/A						
2-Methyl butane	N/A	N/A	2.6	8.8	1.8	2.2	1.8	3.2
2-Methyl hexane	N/A	N/A						
2-Methyl pentane	N/A	N/A		3.3				1.6
2-Pentene	N/A	N/A						
3-Methyl hexane	N/A	N/A		1.1				
3-Methyl pentane	N/A	N/A		2				
Acetaldehyde	N/A	N/A	2	2.1	4	2.8	2.4	1
Butanal	N/A	N/A			1.3	1.1	1.7	
Butane	N/A	N/A	2.4	8.6	2.6	2.4	1.6	2.4
Difluorochloromethane	N/A	N/A	2.6					
Heptanal	N/A	N/A	1.1					
Hexamethyl cyclotrisiloxane	N/A	N/A			2.3			
Isobutane	N/A	N/A	2.4	5.8	1.7		1.2	1.9
Limonene	N/A	N/A						
Methyl cyclohexane	N/A	N/A		1				
Methyl cyclopentane	N/A	N/A		2.2				
Octamethyl cyclotrisiloxane	N/A	N/A			1.1			
Pentane	N/A	N/A		4.8				
Trimethyl silanol	N/A	N/A						

Dominguez Elementary School - Outdoor VOC data

TENTATIVELY IDENTIFIED COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			12/8/08	12/9/08	12/10/08	12/11/08	12/12/08	12/15/08
2,2,3,3-Tetramethyl butane	N/A	N/A				1.1	1.2	
2,2,4-Trimethyl pentane	N/A	N/A		1.9				
2,2-Dimethyl hexane	N/A	N/A						
2,3-Dimethyl pentane	N/A	N/A						
2,4-Dimethyl hexane	N/A	N/A						
2-Methyl butane	N/A	N/A	1.2	4.8	1.5	4	3.9	
2-Methyl hexane	N/A	N/A		1.1				
2-Methyl pentane	N/A	N/A				2.5	2.6	
2-Pentene	N/A	N/A		1.4				
3-Methyl hexane	N/A	N/A		1.4				
3-Methyl pentane	N/A	N/A				1.4	1.5	
Acetaldehyde	N/A	N/A						
Butanal	N/A	N/A						
Butane	N/A	N/A		3.5	1	2.5	2.6	
Difluorochloromethane	N/A	N/A						
Heptanal	N/A	N/A						
Hexamethyl cyclotrisiloxane	N/A	N/A						
Isobutane	N/A	N/A		2.1		1.4	1.4	
Limonene	N/A	N/A						
Methyl cyclohexane	N/A	N/A						
Methyl cyclopentane	N/A	N/A		1.5		1.2	1.2	
Octamethyl cyclotrisiloxane	N/A	N/A						
Pentane	N/A	N/A				1.7	1.7	
Trimethyl silanol	N/A	N/A						

Dominguez Elementary School - Outdoor VOC data

TENTATIVELY IDENTIFIED COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)			
			12/16/08	12/17/08	12/18/08	12/19/08
2,2,3,3-Tetramethyl butane	N/A	N/A				
2,2,4-Trimethyl pentane	N/A	N/A				
2,2-Dimethyl hexane	N/A	N/A				
2,3-Dimethyl pentane	N/A	N/A				
2,4-Dimethyl hexane	N/A	N/A				1.1
2-Methyl butane	N/A	N/A	1.3			1.5
2-Methyl hexane	N/A	N/A				
2-Methyl pentane	N/A	N/A	1.1			
2-Pentene	N/A	N/A				
3-Methyl hexane	N/A	N/A				
3-Methyl pentane	N/A	N/A				
Acetaldehyde	N/A	N/A				
Butanal	N/A	N/A				
Butane	N/A	N/A				1.1
Difluorochloromethane	N/A	N/A				
Heptanal	N/A	N/A				
Hexamethyl cyclotrisiloxane	N/A	N/A				
Isobutane	N/A	N/A				
Limonene	N/A	N/A				
Methyl cyclohexane	N/A	N/A				
Methyl cyclopentane	N/A	N/A				
Octamethyl cyclotrisiloxane	N/A	N/A				
Pentane	N/A	N/A				
Trimethyl silanol	N/A	N/A	1.4			

Dominguez Elementary School - Room 7 (DZ-7) VOC data

SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			11/18/08	11/19/08	11/20/08	11/21/08	11/24/08	11/25/08
Propylene	1.0	0.04	9.5	4.4	3.4	5.9	5.3	2.8
Freon 12 (Dichlorodifluoromethane)	0.5	0.04	0.7	0.6	0.6	0.6	0.7	0.5
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03			0.01		0.02	0.02
Chloromethane	0.5	0.08	0.8	0.9	0.7	0.8	0.6	0.92
Bromomethane	0.5	0.05			0.02	0.02		0.02
Ethanol	1.5	0.30	140	310	480	380	59	480
Freon 11(Trichlorofluoromethane)	0.5	0.04			0.3			
Isopropyl alcohol(2-Propanol)	1.5	0.03	14	35	39	31	6.9	32
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06	0.08	0.08	0.06	0.06	0.06	0.06
Acetone	3.0	0.08	37	44	22	35	16	33
1,1-Dichloroethene	0.5	0.03						
Carbon disulfide	1.0	0.04	0.08	0.08	0.08	0.07	0.06	0.1
Methylene chloride	1.5	0.04	1.8	1	0.6	2.2	0.7	0.5
n-Hexane	0.5	0.03	2.2	1	0.9	1.8	0.8	0.5
2-Butanone(MEK)	1.5	0.07	2.5	2.3	1.4	2.5	1.2	2.7
Ethyl acetate	0.5	0.07	1	0.7	0.3	0.5	0.3	0.3
Chloroform	0.5	0.03	0.1	0.07	0.06	0.1	0.06	0.05
Tetrahydrofuran	0.5	0.07	1.7	0.4	0.2	0.6	0.4	0.4
1,1,1-Trichloroethane	0.5	0.04			0.02			
Cyclohexane	0.5	0.04	1.5	0.8	0.5	3.3	0.5	0.4
Carbon tetrachloride	0.5	0.04	0.07	0.07	0.07	0.07	0.06	0.06
n-Heptane	0.5	0.04	2.6	1.9		1.1	0.8	
Benzene	0.5	0.02	2.1	1	0.8	1.6	1	0.6
Trichloroethene	0.5	0.04	0.05	0.05	0.04	0.06	0.03	0.06
Bromodichloromethane	0.5	0.04						
4-Methyl-2-pentanone(MIBK)	0.5	0.06	0.4	0.4	0.4	4	0.2	0.9
cis-1,3-Dichloropropene	0.5	0.04						
Toluene	0.5	0.05	8.3	4.2	2.8	7.2	4.5	3.2
trans-1,3-Dichloropropene	0.5	0.04						
1,1,2-Trichloroethane	0.5	0.06						
2-Hexanone(MBK)	1.5	0.05			0.1	0.2	0.2	0.5
Tetrachloroethene	0.5	0.04	0.3	0.1	0.08	0.4	0.1	0.1
Chlorobenzene	0.5	0.04						
Ethylbenzene	0.5	0.05	1.1	0.6	0.5	1.1	0.7	0.5
Xylene (para & meta)	1.0	0.10	3.9	1.8	1.5	3.7	2.3	1.4
Xylene (Ortho)	0.5	0.05	1.4	0.7	0.7	1.4	0.8	0.6
Styrene	0.5	0.05	1.3	0.5	0.4	0.7	0.4	0.6
1,1,2,2-Tetrachloroethane	0.5	0.08						
4-Ethyltoluene	0.5	0.06	1.3	0.7	0.6	1.2	0.7	0.5
1,3,5-Trimethylbenzene	0.5	0.05	0.4	0.2		0.4	0.2	0.2
1,2,4-Trimethylbenzene	0.5	0.08	1.4	0.8	0.6	1.3	0.7	0.6
1,3-Dichlorobenzene	0.5	0.06						
1,4-Dichlorobenzene	0.5	0.05	0.5	0.7	0.5	0.7	0.2	0.8
1,2-Dichlorobenzene	0.5	0.10						
1,2,4-Trichlorobenzene	1.0	0.10						
Hexachloro-1,3-butadiene	0.5	0.30		0.02				

Dominguez Elementary School - Room 7 (DZ-7) VOC data

SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			11/26/08	12/1/08	12/2/08	12/3/08	12/4/08	12/5/08
Propylene	1.0	0.04	1.1	3				
Freon 12 (Dichlorodifluoromethane)	0.5	0.04	0.5	0.4	0.5	0.4	3.6	1.4
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03	0.02			0.03	0.04	0.05
Chloromethane	0.5	0.08	0.9	0.7	0.8	1	0.7	0.7
Bromomethane	0.5	0.05	0.02	0.04				
Ethanol	1.5	0.30	130	32	40	160	49	49
Freon 11(Trichlorofluoromethane)	0.5	0.04	0.2			0.1	0.7	0.3
Isopropyl alcohol(2-Propanol)	1.5	0.03	16	3.9	6.6	5.9	2.5	7.6
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06	0.06			0.05	0.05	
Acetone	3.0	0.08	17	19	6.8	10	12	9
1,1-Dichloroethene	0.5	0.03					0.02	
Carbon disulfide	1.0	0.04	0.04	0.02	0.02	0.08	0.07	0.09
Methylene chloride	1.5	0.04	0.2	0.2	0.2	0.2	0.2	0.4
n-Hexane	0.5	0.03	0.2	0.4	0.07	0.1	0.1	0.2
2-Butanone(MEK)	1.5	0.07	0.5	3.3	0.2	1.4	1.4	0.4
Ethyl acetate	0.5	0.07	0.3					
Chloroform	0.5	0.03				0.04	0.04	
Tetrahydrofuran	0.5	0.07						
1,1,1-Trichloroethane	0.5	0.04						
Cyclohexane	0.5	0.04	0.2	0.2	0.06	0.08	0.1	0.1
Carbon tetrachloride	0.5	0.04	0.06			0.04	0.04	0.03
n-Heptane	0.5	0.04				0.4		0.3
Benzene	0.5	0.02	0.3	0.3	0.05	0.1	0.1	0.2
Trichloroethene	0.5	0.04	0.02			0.03	0.03	0.04
Bromodichloromethane	0.5	0.04						
4-Methyl-2-pentanone(MIBK)	0.5	0.06	0.2	0.1	0.4	0.1	0.1	0.1
cis-1,3-Dichloropropene	0.5	0.04						0.02
Toluene	0.5	0.05	1.3	0.9	0.1	0.2	0.3	0.7
trans-1,3-Dichloropropene	0.5	0.04				0.02	0.02	
1,1,2-Trichloroethane	0.5	0.06					0.03	
2-Hexanone(MBK)	1.5	0.05		0.2		0.2	0.2	
Tetrachloroethene	0.5	0.04	0.03	0.02		0.03	0.04	0.05
Chlorobenzene	0.5	0.04				0.03	0.03	0.03
Ethylbenzene	0.5	0.05	0.2	0.1	0.03	0.06	0.08	0.1
Xylene (para & meta)	1.0	0.10	0.6	0.4	0.06	0.1	0.2	0.3
Xylene (Ortho)	0.5	0.05	0.3	0.2	0.03	0.07	0.08	0.2
Styrene	0.5	0.05	0.2	0.1	0.02	0.04	0.05	0.1
1,1,2,2-Tetrachloroethane	0.5	0.08					0.03	0.03
4-Ethyltoluene	0.5	0.06	0.3	0.2	0.04	0.05	0.1	0.2
1,3,5-Trimethylbenzene	0.5	0.05	0.08	0.04	0.01	0.03	0.05	0.07
1,2,4-Trimethylbenzene	0.5	0.08	0.3	0.2	0.04	0.05	0.1	0.2
1,3-Dichlorobenzene	0.5	0.06				0.03	0.03	0.03
1,4-Dichlorobenzene	0.5	0.05	0.8	0.1	0.08	0.06	0.06	0.05
1,2-Dichlorobenzene	0.5	0.10	0.02			0.03	0.03	0.03
1,2,4-Trichlorobenzene	1.0	0.10				0.04	0.04	0.04
Hexachloro-1,3-butadiene	0.5	0.30	0.03			0.03	0.04	0.03

Dominguez Elementary School - Room 7 (DZ-7) VOC data

SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			12/8/08	12/9/08	12/10/08	12/11/08	12/12/08	12/15/08
Propylene	1.0	0.04		1.8	1.7			
Freon 12 (Dichlorodifluoromethane)	0.5	0.04	1	6.3	0.6	0.8	0.5	0.5
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03	0.03	0.02				
Chloromethane	0.5	0.08	0.7	0.6		0.6	0.5	0.6
Bromomethane	0.5	0.05						
Ethanol	1.5	0.30	22	26	35	34	68	27
Freon 11(Trichlorofluoromethane)	0.5	0.04	0.3	1.1	0.3	0.2	0.2	0.2
Isopropyl alcohol(2-Propanol)	1.5	0.03	3.6	3.7	4.6	3.6	14	3.6
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06	0.03	0.03	0.03	0.02		
Acetone	3.0	0.08	11	14	9.1	9.2	20	10
1,1-Dichloroethene	0.5	0.03	0.3					
Carbon disulfide	1.0	0.04	0.07	0.05	0.04	0.04	0.02	0.02
Methylene chloride	1.5	0.04	0.3	0.5	0.3	0.4	0.6	0.3
n-Hexane	0.5	0.03	0.08	0.1	0.09	0.1	0.2	0.09
2-Butanone(MEK)	1.5	0.07	1	1.3	0.2	0.6	0.7	0.5
Ethyl acetate	0.5	0.07					0.1	
Chloroform	0.5	0.03						0.02
Tetrahydrofuran	0.5	0.07						
1,1,1-Trichloroethane	0.5	0.04						
Cyclohexane	0.5	0.04	0.06	0.1	0.1	0.1	0.3	0.06
Carbon tetrachloride	0.5	0.04	0.03	0.03	0.03			0.02
n-Heptane	0.5	0.04			0.1	0.5		
Benzene	0.5	0.02	0.1	0.2	0.1	0.2	0.1	0.1
Trichloroethene	0.5	0.04	0.02	0.02				
Bromodichloromethane	0.5	0.04			0.01			
4-Methyl-2-pentanone(MIBK)	0.5	0.06	0.04	0.08	0.03		3	0.07
cis-1,3-Dichloropropene	0.5	0.04						
Toluene	0.5	0.05	0.3	0.5	0.4	0.7	0.4	0.4
trans-1,3-Dichloropropene	0.5	0.04						
1,1,2-Trichloroethane	0.5	0.06						
2-Hexanone(MBK)	1.5	0.05	0.1	0.2			0.08	0.07
Tetrachloroethene	0.5	0.04	0.02	0.04	0.02	0.02		
Chlorobenzene	0.5	0.04	0.01					
Ethylbenzene	0.5	0.05	0.05	0.08	0.06	0.1	0.07	0.07
Xylene (para & meta)	1.0	0.10	0.1	0.2	0.2	0.3	0.2	0.2
Xylene (Ortho)	0.5	0.05	0.06	0.1	0.08	0.1	0.08	0.1
Styrene	0.5	0.05	0.02	0.07	0.1	0.08	0.05	0.06
1,1,2,2-Tetrachloroethane	0.5	0.08						
4-Ethyltoluene	0.5	0.06	0.05	0.08	0.07	0.1	0.07	0.1
1,3,5-Trimethylbenzene	0.5	0.05	0.02	0.03	0.03	0.05		0.04
1,2,4-Trimethylbenzene	0.5	0.08	0.05	0.08	0.07	0.2	0.07	0.1
1,3-Dichlorobenzene	0.5	0.06	0.01	0.01				
1,4-Dichlorobenzene	0.5	0.05	0.04	0.05	0.02	0.02	0.01	0.07
1,2-Dichlorobenzene	0.5	0.10	0.01	0.01				
1,2,4-Trichlorobenzene	1.0	0.10	0.02	0.02	0.02			0.03
Hexachloro-1,3-butadiene	0.5	0.30	0.02	0.02	0.01			

Dominguez Elementary School - Room 7 (DZ-7) VOC data

SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv) 12/16/08	12/17/08	12/18/08	12/19/08
Propylene	1.0	0.04		1		1.5
Freon 12 (Dichlorodifluoromethane)	0.5	0.04	0.4	0.4	0.4	0.4
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03				
Chloromethane	0.5	0.08	0.6	0.5	0.5	0.6
Bromomethane	0.5	0.05				
Ethanol	1.5	0.30	110	54	110	56
Freon 11(Trichlorofluoromethane)	0.5	0.04	0.2	0.2	0.2	0.2
Isopropyl alcohol(2-Propanol)	1.5	0.03	5.4	4.6	5.6	3.6
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06	0.02	0.04	0.02	
Acetone	3.0	0.08	7.9	6.5	11	14
1,1-Dichloroethene	0.5	0.03				
Carbon disulfide	1.0	0.04	0.06	0.01	0.03	
Methylene chloride	1.5	0.04	0.4	0.2	0.2	0.3
n-Hexane	0.5	0.03		0.1	0.09	0.1
2-Butanone(MEK)	1.5	0.07		0.4	0.8	0.8
Ethyl acetate	0.5	0.07		0.4	0.8	
Chloroform	0.5	0.03				
Tetrahydrofuran	0.5	0.07				
1,1,1-Trichloroethane	0.5	0.04				
Cyclohexane	0.5	0.04	0.08		0.1	0.1
Carbon tetrachloride	0.5	0.04		0.04	0.02	
n-Heptane	0.5	0.04			0.3	
Benzene	0.5	0.02	0.2	0.2	0.1	0.2
Trichloroethene	0.5	0.04				
Bromodichloromethane	0.5	0.04				
4-Methyl-2-pentanone(MIBK)	0.5	0.06	0.05	0.05	0.04	
cis-1,3-Dichloropropene	0.5	0.04				
Toluene	0.5	0.05	0.5	0.6	1.5	0.9
trans-1,3-Dichloropropene	0.5	0.04				
1,1,2-Trichloroethane	0.5	0.06				
2-Hexanone(MBK)	1.5	0.05				
Tetrachloroethene	0.5	0.04		0.02		
Chlorobenzene	0.5	0.04				
Ethylbenzene	0.5	0.05	0.09	0.1	0.05	0.1
Xylene (para & meta)	1.0	0.10	0.3	0.3	0.2	0.4
Xylene (Ortho)	0.5	0.05	0.4	0.1	0.06	0.2
Styrene	0.5	0.05	0.07	0.07	0.02	0.2
1,1,2,2-Tetrachloroethane	0.5	0.08				
4-Ethyltoluene	0.5	0.06	0.2	0.1	0.06	0.2
1,3,5-Trimethylbenzene	0.5	0.05	0.06	0.04	0.02	0.05
1,2,4-Trimethylbenzene	0.5	0.08	0.2	0.1	0.06	0.2
1,3-Dichlorobenzene	0.5	0.06	0.02			
1,4-Dichlorobenzene	0.5	0.05	0.05	0.04	0.04	0.04
1,2-Dichlorobenzene	0.5	0.10	0.02			
1,2,4-Trichlorobenzene	1.0	0.10	0.04			
Hexachloro-1,3-butadiene	0.5	0.30				

Dominguez Elementary School - Room 7 (DZ-7) VOC data

TENTATIVELY IDENTIFIED COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			11/18/08	11/19/08	11/20/08	11/21/08	11/24/08	11/25/08
.alpha.-Pinene	N/A	N/A						
1,3-Pentadiene	N/A	N/A						
1-Butanol	N/A	N/A						2.9
1R-.alpha.-Pinene	N/A	N/A						
2,2,3,3-Tetramethyl butane	N/A	N/A		1.8	1.5		1.7	
2,2,4-Trimethyl pentane	N/A	N/A	4					
2,2-Dimethyl hexane	N/A	N/A				2.9		
2,3-Dimethyl pentane	N/A	N/A	2.7			1.9	1.2	
2,4-bis(trimethylsiloxane) Benzaldehyde	N/A	N/A			28			
2-Methyl butane	N/A	N/A	16	6.9	6	12	7.3	4.4
2-Methyl hexane	N/A	N/A	2.1					
2-Methyl pentane	N/A	N/A	6.4	2.8	2.4	4.9	2.8	
2-Methyl-1,3-butadiene	N/A	N/A		3.2	1.3	2.6		2.5
3-Methyl hexane	N/A	N/A	2.5			2	1.2	
3-Methyl pentane	N/A	N/A	3.5	1.5	1.4	2.6	1.5	
4-Ethyl-2,2,6,6-tetramethyl heptane	N/A	N/A						1.8
Acetaldehyde	N/A	N/A		1.6	1.3		1.5	3.1
Benzaldehyde	N/A	N/A	2.1	2	2.4	2.5	1.9	
Butanal	N/A	N/A						
Butane	N/A	N/A	11	5.3	5.4	8.4	5.3	3.6
Butyl ester acetic acid	N/A	N/A	8.8					
Decanal	N/A	N/A						
Difluorochloromethane	N/A	N/A						
D-Limonene	N/A	N/A	1.7	5.5	1.5	2.6		
Heptanal	N/A	N/A						
Hexamethyl cyclotrisiloxane	N/A	N/A					1	
Hexanal	N/A	N/A		1.2				1.8
Isobutane	N/A	N/A	7	3.3	12	5	3.8	2.2
Methyl cyclopentane	N/A	N/A	3	1.3	1.3	2.3	1.3	
Nonanal	N/A	N/A		1.2				2.3
Ocatanal	N/A	N/A						1.8
Octamethyl cyclotrisiloxane	N/A	N/A			68			
Pentane	N/A	N/A	6.1	3.1		5.4	3.1	2.8
Tridecane	N/A	N/A						

Dominguez Elementary School - Room 7 (DZ-7) VOC data

TENTATIVELY IDENTIFIED COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			11/26/08	12/1/08	12/2/08	12/3/08	12/4/08	12/5/08
.alpha.-Pinene	N/A	N/A	1.2					
1,3-Pentadiene	N/A	N/A	2.2					
1-Butanol	N/A	N/A	1.8					
1R-.alpha.-Pinene	N/A	N/A						
2,2,3,3-Tetramethyl butane	N/A	N/A						
2,2,4-Trimethyl pentane	N/A	N/A						
2,2-Dimethyl hexane	N/A	N/A						
2,3-Dimethyl pentane	N/A	N/A						
2,4-bis(trimethylsiloxane) Benzaldehyde	N/A	N/A						
2-Methyl butane	N/A	N/A	2.6	2.8		2.1		1.3
2-Methyl hexane	N/A	N/A						
2-Methyl pentane	N/A	N/A						
2-Methyl-1,3-butadiene	N/A	N/A						
3-Methyl hexane	N/A	N/A						
3-Methyl pentane	N/A	N/A						
4-Ethyl-2,2,6,6-tetramethyl heptane	N/A	N/A						
Acetaldehyde	N/A	N/A		2.7		2.7	1.5	
Benzaldehyde	N/A	N/A						
Butanal	N/A	N/A				1.1	1	
Butane	N/A	N/A	2	3.4	1.8	1.9	1.1	1.6
Butyl ester acetic acid	N/A	N/A						
Decanal	N/A	N/A						
Difluorochloromethane	N/A	N/A			1.5			
D-Limonene	N/A	N/A	37					
Heptanal	N/A	N/A						
Hexamethyl cyclotrisiloxane	N/A	N/A						
Hexanal	N/A	N/A						
Isobutane	N/A	N/A	1.7	2.6	1.9	1.6	1.3	1.8
Methyl cyclopentane	N/A	N/A						
Nonanal	N/A	N/A	1.1					
Ocatanal	N/A	N/A						
Octamethyl cyclotrisiloxane	N/A	N/A		1				
Pentane	N/A	N/A		1.5				
Tridecane	N/A	N/A	1.1					

Dominguez Elementary School - Room 7 (DZ-7) VOC data

			VOC concentration (ppbv)					
TENTATIVELY IDENTIFIED COMPOUNDS	**Reporting Limit (ppbv)**	**Method Detection limit (ppbv)**	**12/8/08**	**12/9/08**	**12/10/08**	**12/11/08**	**12/12/08**	**12/15/08**
.alpha.-Pinene	N/A	N/A						
1,3-Pentadiene	N/A	N/A						
1-Butanol	N/A	N/A						
1R-.alpha.-Pinene	N/A	N/A		1.9	4.1			
2,2,3,3-Tetramethyl butane	N/A	N/A						
2,2,4-Trimethyl pentane	N/A	N/A						
2,2-Dimethyl hexane	N/A	N/A		2.4				
2,3-Dimethyl pentane	N/A	N/A						
2,4-bis(trimethylsiloxane) Benzaldehyde	N/A	N/A						
2-Methyl butane	N/A	N/A					1.1	
2-Methyl hexane	N/A	N/A						
2-Methyl pentane	N/A	N/A						
2-Methyl-1,3-butadiene	N/A	N/A						
3-Methyl hexane	N/A	N/A			4.3			
3-Methyl pentane	N/A	N/A						
4-Ethyl-2,2,6,6-tetramethyl heptane	N/A	N/A						
Acetaldehyde	N/A	N/A						
Benzaldehyde	N/A	N/A		2.4				
Butanal	N/A	N/A		2				
Butane	N/A	N/A				1	1.8	
Butyl ester acetic acid	N/A	N/A						
Decanal	N/A	N/A		1.9				
Difluorochloromethane	N/A	N/A					1.9	
D-Limonene	N/A	N/A						
Heptanal	N/A	N/A		1.9				
Hexamethyl cyclotrisiloxane	N/A	N/A						
Hexanal	N/A	N/A						
Isobutane	N/A	N/A				1.3	1.3	
Methyl cyclopentane	N/A	N/A						
Nonanal	N/A	N/A						
Ocatanal	N/A	N/A		1.8				
Octamethyl cyclotrisiloxane	N/A	N/A						
Pentane	N/A	N/A						
Tridecane	N/A	N/A						

Dominguez Elementary School - Room 7 (DZ-7) VOC data

TENTATIVELY IDENTIFIED COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)			
			12/16/08	12/17/08	12/18/08	12/19/08
.alpha.-Pinene	N/A	N/A				
1,3-Pentadiene	N/A	N/A				
1-Butanol	N/A	N/A				
1R-.alpha.-Pinene	N/A	N/A				
2,2,3,3-Tetramethyl butane	N/A	N/A				
2,2,4-Trimethyl pentane	N/A	N/A				
2,2-Dimethyl hexane	N/A	N/A				
2,3-Dimethyl pentane	N/A	N/A				
2,4-bis(trimethylsiloxane) Benzaldehyde	N/A	N/A				
2-Methyl butane	N/A	N/A				
2-Methyl hexane	N/A	N/A				
2-Methyl pentane	N/A	N/A				
2-Methyl-1,3-butadiene	N/A	N/A				
3-Methyl hexane	N/A	N/A				
3-Methyl pentane	N/A	N/A				
4-Ethyl-2,2,6,6-tetramethyl heptane	N/A	N/A				
Acetaldehyde	N/A	N/A				
Benzaldehyde	N/A	N/A				
Butanal	N/A	N/A				
Butane	N/A	N/A				1.2
Butyl ester acetic acid	N/A	N/A				
Decanal	N/A	N/A				
Difluorochloromethane	N/A	N/A				
D-Limonene	N/A	N/A				
Heptanal	N/A	N/A				
Hexamethyl cyclotrisiloxane	N/A	N/A				
Hexanal	N/A	N/A				
Isobutane	N/A	N/A				1
Methyl cyclopentane	N/A	N/A				
Nonanal	N/A	N/A				
Ocatanal	N/A	N/A				
Octamethyl cyclotrisiloxane	N/A	N/A				
Pentane	N/A	N/A				
Tridecane	N/A	N/A				

Dominguez Elementary School - Room 9 (DZ-9) VOC data

SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			11/18/08	11/19/08	11/20/08	11/21/08	11/24/08	11/25/08
Propylene	1.0	0.04			4.1		4.4	2.8
Freon 12 (Dichlorodifluoromethane)	0.5	0.04		0.6	0.6		0.6	0.5
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03			0.02	0.02	0.02	0.02
Chloromethane	0.5	0.08	0.7	0.7	0.7	0.7	0.8	0.8
Vinyl chloride	0.5	0.04						
Bromomethane	0.5	0.05			0.05			0.02
Ethanol	1.5	0.30	200	580	150	120	520	180
Freon 11(Trichlorofluoromethane)	0.5	0.04			0.3			0.2
Isopropyl alcohol(2-Propanol)	1.5	0.03	17	160	20	92	270	200
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06		0.06	0.06	0.06	0.06	0.06
Acetone	3.0	0.08	25	27	17	27	31	26
Carbon disulfide	1.0	0.04	0.09	0.06	0.04	0.09	0.05	0.04
Methylene chloride	1.5	0.04	1.2	1	0.6	1.4	0.6	0.4
n-Hexane	0.5	0.03	1.1	1.3	1.4	1.2	0.7	0.5
2-Butanone(MEK)	1.5	0.07	1.8	2.2	2.5	2.3	2.3	2.5
cis-1,2-Dichloroethene	0.5	0.05						
Ethyl acetate	0.5	0.07	1.6	0.7	0.3	0.8	0.4	0.3
Chloroform	0.5	0.03	0.08	0.07	0.07	0.09	0.05	0.05
Tetrahydrofuran	0.5	0.07	0.5	0.2	0.1	0.4	0.3	0.2
1,1,1-Trichloroethane	0.5	0.04			0.02	0.02		
Cyclohexane	0.5	0.04	0.8	1.7	0.8	1.7	0.5	0.3
Carbon tetrachloride	0.5	0.04	0.07	0.07	0.07	0.07	0.06	0.06
n-Heptane	0.5	0.04	1.2	4.7	0.9	0.9	0.6	
Benzene	0.5	0.02	1.2	1.1	1.1	1.3	0.8	0.6
Trichloroethene	0.5	0.04	0.09	0.07	0.05	0.06	0.03	0.06
4-Methyl-2-pentanone(MIBK)	0.5	0.06	0.5	1.3	0.3	0.4	0.4	0.4
cis-1,3-Dichloropropene	0.5	0.04						
Toluene	0.5	0.05	5.4	5.1	4.3	6.4	3.8	3
trans-1,3-Dichloropropene	0.5	0.04						
2-Hexanone(MBK)	1.5	0.05		0.1	0.2	0.2	0.4	0.4
Tetrachloroethene	0.5	0.04	0.3	0.2	0.1	0.2	0.1	0.09
Dibromochloromethane	0.5	0.06						
Chlorobenzene	0.5	0.04						
Ethylbenzene	0.5	0.05	0.7	0.7	0.6	0.9	0.5	0.4
Xylene (para & meta)	1.0	0.10	2.4	2	1.8	2.9	1.7	1.1
Xylene (Ortho)	0.5	0.05	0.9	0.9	0.7	1.1	0.7	0.5
Styrene	0.5	0.05	1.1	0.6	0.6	0.5	1.1	0.4
1,1,2,2-Tetrachloroethane	0.5	0.08						
4-Ethyltoluene	0.5	0.06	0.8	0.7	0.6	0.9	0.6	0.4
1,3,5-Trimethylbenzene	0.5	0.05	0.2	0.2		0.3	0.2	0.1
1,2,4-Trimethylbenzene	0.5	0.08	0.9	0.7	0.6	1	0.7	0.5
1,3-Dichlorobenzene	0.5	0.06						
1,4-Dichlorobenzene	0.5	0.05	0.08	0.09	0.09	0.1	0.1	0.08
1,2-Dichlorobenzene	0.5	0.10						
1,2,4-Trichlorobenzene	1.0	0.10						
Hexachloro-1,3-butadiene	0.5	0.30		0.03				0.03

Dominguez Elementary School - Room 9 (DZ-9) VOC data

SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			11/26/08	12/1/08	12/2/08	12/3/08	12/4/08	12/5/08
Propylene	1.0	0.04	0.9	4	1.1	0.7	1.1	2.6
Freon 12 (Dichlorodifluoromethane)	0.5	0.04	0.5	0.5	0.4	0.4	0.5	0.6
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03	0.02		0.02	0.04	0.05	0.05
Chloromethane	0.5	0.08	0.7	0.7	0.6	0.8	0.6	0.6
Vinyl chloride	0.5	0.04				0.04		
Bromomethane	0.5	0.05		0.05		0.05		
Ethanol	1.5	0.30	110	210	82	59	61	84
Freon 11(Trichlorofluoromethane)	0.5	0.04	0.2		0.2	0.3	0.3	0.4
Isopropyl alcohol(2-Propanol)	1.5	0.03	41	15	5.4	8.7	4.2	39
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06	0.06	0.06	0.07	0.09	0.08	0.1
Acetone	3.0	0.08	13	23	16	7.8	23	16
Carbon disulfide	1.0	0.04	0.03	0.04	0.05	0.07	0.09	0.1
Methylene chloride	1.5	0.04	0.2	0.4	0.1	0.2	0.4	0.5
n-Hexane	0.5	0.03	0.2	1.4	0.2	0.2	0.3	0.5
2-Butanone(MEK)	1.5	0.07	0.4	2.2	2.8	0.8	4	1
cis-1,2-Dichloroethene	0.5	0.05				0.02		
Ethyl acetate	0.5	0.07	0.4	0.3				0.2
Chloroform	0.5	0.03		0.06				0.08
Tetrahydrofuran	0.5	0.07		0.4				
1,1,1-Trichloroethane	0.5	0.04						
Cyclohexane	0.5	0.04	0.1	0.7	0.1	0.1	0.2	0.4
Carbon tetrachloride	0.5	0.04	0.06	0.07	0.07	0.08	0.07	0.07
n-Heptane	0.5	0.04			0.6		0.2	0.4
Benzene	0.5	0.02	0.2	1.2	0.2	0.2	0.4	0.9
Trichloroethene	0.5	0.04	0.02	0.04		0.03	0.07	0.05
4-Methyl-2-pentanone(MIBK)	0.5	0.06	0.1	0.2	0.2	0.2	0.2	0.08
cis-1,3-Dichloropropene	0.5	0.04				0.02		0.02
Toluene	0.5	0.05	1.2	4.9	0.8	0.6	1.2	2.6
trans-1,3-Dichloropropene	0.5	0.04				0.02	0.02	
2-Hexanone(MBK)	1.5	0.05		0.1	0.3		0.4	
Tetrachloroethene	0.5	0.04	0.02	0.06		0.05	0.07	0.1
Dibromochloromethane	0.5	0.06					0.02	0.02
Chlorobenzene	0.5	0.04						0.03
Ethylbenzene	0.5	0.05	0.2	0.6	0.09	0.1	0.2	0.4
Xylene (para & meta)	1.0	0.10	0.4	1.9	0.2	0.3	0.4	1.1
Xylene (Ortho)	0.5	0.05	0.2	0.8	0.1	0.2	0.2	0.4
Styrene	0.5	0.05	0.1	0.9	0.07	0.08	0.09	0.9
1,1,2,2-Tetrachloroethane	0.5	0.08						0.04
4-Ethyltoluene	0.5	0.06	0.2	0.7	0.1	0.2	0.2	0.4
1,3,5-Trimethylbenzene	0.5	0.05	0.05	0.2	0.03	0.09	0.06	0.1
1,2,4-Trimethylbenzene	0.5	0.08	0.2	0.7	0.1	0.3	0.2	0.4
1,3-Dichlorobenzene	0.5	0.06				0.03	0.03	0.03
1,4-Dichlorobenzene	0.5	0.05	0.06	0.1	0.03	0.04	0.04	0.05
1,2-Dichlorobenzene	0.5	0.10	0.02			0.03	0.03	0.03
1,2,4-Trichlorobenzene	1.0	0.10				0.04	0.04	0.03
Hexachloro-1,3-butadiene	0.5	0.30	0.03			0.03	0.03	0.03

Dominguez Elementary School - Room 9 (DZ-9) VOC data

SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			12/8/08	12/9/08	12/10/08	12/11/08	12/12/08	12/15/08
Propylene	1.0	0.04			1.4	4.9	2.6	1.1
Freon 12 (Dichlorodifluoromethane)	0.5	0.04	0.5	0.6	0.5	0.7	0.4	0.4
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03	0.03	0.03	0.03			
Chloromethane	0.5	0.08	0.5	0.5	0.4	0.5	0.4	0.5
Vinyl chloride	0.5	0.04						
Bromomethane	0.5	0.05						
Ethanol	1.5	0.30	68	30	110	68	21	110
Freon 11(Trichlorofluoromethane)	0.5	0.04	0.3	0.3		0.4	0.2	0.2
Isopropyl alcohol(2-Propanol)	1.5	0.03	4.9	43	53	6.2	36	20
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06	0.09	0.09	0.08	0.06	0.06	0.05
Acetone	3.0	0.08	14	15	15	25	17	12
Carbon disulfide	1.0	0.04	0.03	0.05	0.05	0.03		
Methylene chloride	1.5	0.04	0.3	0.6	0.2	0.8	0.6	0.2
n-Hexane	0.5	0.03	0.2	0.5	0.6	0.9	0.6	0.2
2-Butanone(MEK)	1.5	0.07	1.7	0.9	1.2	2	2.4	1.3
cis-1,2-Dichloroethene	0.5	0.05						
Ethyl acetate	0.5	0.07	0.1	0.3		0.3	0.2	
Chloroform	0.5	0.03	0.06	0.06		0.07		
Tetrahydrofuran	0.5	0.07		0.7				
1,1,1-Trichloroethane	0.5	0.04						
Cyclohexane	0.5	0.04	0.2	0.3	1.1	0.6	0.4	0.2
Carbon tetrachloride	0.5	0.04	0.08	0.08	0.07	0.06	0.06	0.05
n-Heptane	0.5	0.04		0.5	1.6	0.8	0.6	0.6
Benzene	0.5	0.02	0.3	0.8	0.4	1.1	0.6	0.3
Trichloroethene	0.5	0.04	0.02	0.04	0.02	0.06	0.02	0.02
4-Methyl-2-pentanone(MIBK)	0.5	0.06	0.08	0.1	0.3	0.1	0.1	0.2
cis-1,3-Dichloropropene	0.5	0.04						
Toluene	0.5	0.05	1	2.2	1.4	4.4	2.3	0.8
trans-1,3-Dichloropropene	0.5	0.04						
2-Hexanone(MBK)	1.5	0.05	0.1		0.2	0.1	0.4	0.2
Tetrachloroethene	0.5	0.04	0.03	0.08	0.04	0.1	0.09	0.03
Dibromochloromethane	0.5	0.06						
Chlorobenzene	0.5	0.04						
Ethylbenzene	0.5	0.05	0.1	0.3	0.2	0.6	0.3	0.1
Xylene (para & meta)	1.0	0.10	0.4	1	0.8	1.9	1.1	0.4
Xylene (Ortho)	0.5	0.05	0.2	0.4	0.2	0.7	0.4	0.2
Styrene	0.5	0.05	0.07	0.4	0.6	0.7	0.3	0.1
1,1,2,2-Tetrachloroethane	0.5	0.08						
4-Ethyltoluene	0.5	0.06	0.1	0.3	0.2	0.6	0.3	0.1
1,3,5-Trimethylbenzene	0.5	0.05	0.04	0.1	0.06	0.2	0.1	0.05
1,2,4-Trimethylbenzene	0.5	0.08	0.1	0.3	0.2	0.6	0.4	0.2
1,3-Dichlorobenzene	0.5	0.06	0.01	0.01				
1,4-Dichlorobenzene	0.5	0.05	0.02	0.02	0.02	0.04	0.03	0.02
1,2-Dichlorobenzene	0.5	0.10	0.01	0.01		0.02	0.01	
1,2,4-Trichlorobenzene	1.0	0.10	0.02	0.02	0.02	0.04	0.04	0.03
Hexachloro-1,3-butadiene	0.5	0.30		0.01	0.01	0.02		

Dominguez Elementary School - Room 9 (DZ-9) VOC data

			VOC concentration (ppbv)			
SPECIATED ORGANIC COMPOUNDS	**Reporting Limit (ppbv)**	**Method Detection limit (ppbv)**	**12/16/08**	**12/17/08**	**12/18/08**	**12/19/08**
Propylene	1.0	0.04		0.4	1.7	2.6
Freon 12 (Dichlorodifluoromethane)	0.5	0.04		0.4	0.4	0.4
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03		0.02		
Chloromethane	0.5	0.08	0.4	0.5	0.4	0.4
Vinyl chloride	0.5	0.04				
Bromomethane	0.5	0.05				
Ethanol	1.5	0.30	54	76	52	40
Freon 11(Trichlorofluoromethane)	0.5	0.04	0.2	0.2	0.2	0.2
Isopropyl alcohol(2-Propanol)	1.5	0.03	2.4	2.7	9.6	31
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06		0.05	0.05	0.05
Acetone	3.0	0.08	19	5.8	9.9	16
Carbon disulfide	1.0	0.04	0.02	0.01	0.02	0.03
Methylene chloride	1.5	0.04	0.4	0.1	0.1	0.3
n-Hexane	0.5	0.03	0.3	0.1	0.3	0.4
2-Butanone(MEK)	1.5	0.07	2	0.2	0.9	1
cis-1,2-Dichloroethene	0.5	0.05				
Ethyl acetate	0.5	0.07		0.5		
Chloroform	0.5	0.03				
Tetrahydrofuran	0.5	0.07				
1,1,1-Trichloroethane	0.5	0.04				
Cyclohexane	0.5	0.04	0.3	0.2	0.3	0.3
Carbon tetrachloride	0.5	0.04	0.05	0.06	0.05	0.05
n-Heptane	0.5	0.04	3.7	3.9	1.3	1.4
Benzene	0.5	0.02	0.6	0.1		0.6
Trichloroethene	0.5	0.04		0.02		0.02
4-Methyl-2-pentanone(MIBK)	0.5	0.06	0.1	0.05	0.1	0.06
cis-1,3-Dichloropropene	0.5	0.04				
Toluene	0.5	0.05	1.7	0.4	6.5	2
trans-1,3-Dichloropropene	0.5	0.04				
2-Hexanone(MBK)	1.5	0.05			0.3	
Tetrachloroethene	0.5	0.04	0.06	0.02		0.04
Dibromochloromethane	0.5	0.06				
Chlorobenzene	0.5	0.04				
Ethylbenzene	0.5	0.05	0.2	0.05	0.2	0.3
Xylene (para & meta)	1.0	0.10	0.8	0.2	0.6	1
Xylene (Ortho)	0.5	0.05	0.3	0.08	0.3	0.4
Styrene	0.5	0.05	0.25	0.03	0.06	0.8
1,1,2,2-Tetrachloroethane	0.5	0.08				
4-Ethyltoluene	0.5	0.06	0.3	0.06	0.2	0.3
1,3,5-Trimethylbenzene	0.5	0.05	0.09	0.02	0.3	0.09
1,2,4-Trimethylbenzene	0.5	0.08	0.2	0.07	0.2	0.3
1,3-Dichlorobenzene	0.5	0.06				
1,4-Dichlorobenzene	0.5	0.05	0.02	0.02	0.02	0.03
1,2-Dichlorobenzene	0.5	0.10				
1,2,4-Trichlorobenzene	1.0	0.10				0.02
Hexachloro-1,3-butadiene	0.5	0.30				

Dominguez Elementary School - Room 9 (DZ-9) VOC data

TENTATIVELY IDENTIFIED COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			11/18/08	11/19/08	11/20/08	11/21/08	11/24/08	11/25/08
4-Bromofluorobenzene	N/A	N/A	9.84	10.13	10.69	11.36	11.97	11.86
1,3-Dimethyl cyclohexane	N/A	N/A						
1,3-Pentadiene	N/A	N/A	1.4					
1,4-Pentadiene	N/A	N/A						1.4
1-Butanol	N/A	N/A			1.2			1.9
1-Dodecene	N/A	N/A						
1S-.alpha.-Pinene	N/A	N/A						1.5
2,2,3,3-Tetramethyl butane	N/A	N/A			2.1			
2,2,4,6,6-Pentamethyl heptane	N/A	N/A		9.4		5.3		13
2,2,4-Trimethyl pentane	N/A	N/A	2.3	2.1			1.2	
2,2-Dimethyl hexane	N/A	N/A				2.4		
2,3,3-Trimethyl pentane	N/A	N/A						
2,3-Dimethyl pentane	N/A	N/A	1.5		1.1			
2-Methyl butane	N/A	N/A	8.2	7.4	9	8.9	5.3	3.8
2-Methyl hexane	N/A	N/A	1.3	1.4				
2-Methyl pentane	N/A	N/A	3.5	3.3	3.6	3.7	2	1.5
2-Methyl-1,3-butadiene	N/A	N/A	1.6				1.5	
3-Methyl butanal	N/A	N/A						
3-Methyl hexane	N/A	N/A	1.5	1.5	1.3	1.5		
3-Methyl pentane	N/A	N/A	1.9	1.8	2.1	2		
Acetaldehyde	N/A	N/A			1.6		2.4	2.4
Benzaldehyde	N/A	N/A				1.9	2	3
Butanal	N/A	N/A						
Butane	N/A	N/A	5.9	6.1	8.3	6.7	4.3	3.1
Difluorochloromethane	N/A	N/A	26	3.6		19		
D-Limonene	N/A	N/A	1.1			1.7		1.9
Heptanal	N/A	N/A						
Hexamethyl cyclotrisiloxane	N/A	N/A						
Hexanal	N/A	N/A						
Isobutane	N/A	N/A	4.6	4	5.1	4.6	3.5	2.2
Methyl cyclohexane	N/A	N/A			1.1			
Methyl cyclopentane	N/A	N/A	1.6	1.6	1.9	1.7		
Nonanal	N/A	N/A					2	2
Ocatanal	N/A	N/A					2	
Octamethyl cyclotrisiloxane	N/A	N/A					10	16
Octane	N/A	N/A						
Pentane	N/A	N/A	3.6	4		4.1	3	
trans-1,4-Dimethyl cyclohexane	N/A	N/A						

Dominguez Elementary School - Room 9 (DZ-9) VOC data

TENTATIVELY IDENTIFIED COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			11/26/08	12/1/08	12/2/08	12/3/08	12/4/08	12/5/08
4-Bromofluorobenzene	N/A	N/A	11.53	9.44	9.66	8.08	9.07	8.76
1,3-Dimethyl cyclohexane	N/A	N/A						
1,3-Pentadiene	N/A	N/A						
1,4-Pentadiene	N/A	N/A						
1-Butanol	N/A	N/A						
1-Dodecene	N/A	N/A			1			
1S-.alpha.-Pinene	N/A	N/A						
2,2,3,3-Tetramethyl butane	N/A	N/A						1.3
2,2,4,6,6-Pentamethyl heptane	N/A	N/A	1.1					
2,2,4-Trimethyl pentane	N/A	N/A						
2,2-Dimethyl hexane	N/A	N/A						
2,3,3-Trimethyl pentane	N/A	N/A						
2,3-Dimethyl pentane	N/A	N/A						
2-Methyl butane	N/A	N/A	2	8.5	2.1	1.3	1.9	3.5
2-Methyl hexane	N/A	N/A						
2-Methyl pentane	N/A	N/A		3.1				1.9
2-Methyl-1,3-butadiene	N/A	N/A		1.6				
3-Methyl butanal	N/A	N/A			1		1.1	
3-Methyl hexane	N/A	N/A						
3-Methyl pentane	N/A	N/A		1.9				
Acetaldehyde	N/A	N/A		1.6	2.6	1.2	3	
Benzaldehyde	N/A	N/A		1.4				
Butanal	N/A	N/A			1.1		2	
Butane	N/A	N/A	1.6	8.1	2.9	1.7	1.8	2.6
Difluorochloromethane	N/A	N/A						
D-Limonene	N/A	N/A	2.2					
Heptanal	N/A	N/A			1.1			
Hexamethyl cyclotrisiloxane	N/A	N/A		2.5				
Hexanal	N/A	N/A			1			
Isobutane	N/A	N/A	1.6	5.5	2.1	7	1.4	2.1
Methyl cyclohexane	N/A	N/A						
Methyl cyclopentane	N/A	N/A		2				
Nonanal	N/A	N/A			1.6			
Ocatanal	N/A	N/A			1.3			
Octamethyl cyclotrisiloxane	N/A	N/A	1.3	3.4				
Octane	N/A	N/A						
Pentane	N/A	N/A		4.8				
trans-1,4-Dimethyl cyclohexane	N/A	N/A						

Dominguez Elementary School - Room 9 (DZ-9) VOC data

TENTATIVELY IDENTIFIED COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			12/8/08	12/9/08	12/10/08	12/11/08	12/12/08	12/15/08
4-Bromofluorobenzene	N/A	N/A	8.61	8.41	8.22	9.55	9.52	10.21
1,3-Dimethyl cyclohexane	N/A	N/A						
1,3-Pentadiene	N/A	N/A						
1,4-Pentadiene	N/A	N/A						
1-Butanol	N/A	N/A			1.9			
1-Dodecene	N/A	N/A						
1S-.alpha.-Pinene	N/A	N/A						
2,2,3,3-Tetramethyl butane	N/A	N/A		1		1.9	1.1	
2,2,4,6,6-Pentamethyl heptane	N/A	N/A						
2,2,4-Trimethyl pentane	N/A	N/A						
2,2-Dimethyl hexane	N/A	N/A						
2,3,3-Trimethyl pentane	N/A	N/A						
2,3-Dimethyl pentane	N/A	N/A				1.6		
2-Methyl butane	N/A	N/A	1.2	2.7	1.4	4.5	3.2	
2-Methyl hexane	N/A	N/A			1.6	1.2		
2-Methyl pentane	N/A	N/A		1.7		3.2		
2-Methyl-1,3-butadiene	N/A	N/A						
3-Methyl butanal	N/A	N/A						
3-Methyl hexane	N/A	N/A			2.4	1.4		
3-Methyl pentane	N/A	N/A				1.8	1.2	
Acetaldehyde	N/A	N/A						
Benzaldehyde	N/A	N/A						
Butanal	N/A	N/A					1.1	
Butane	N/A	N/A	1	2.1	1.2	3.5	2.3	
Difluorochloromethane	N/A	N/A						
D-Limonene	N/A	N/A					2.3	
Heptanal	N/A	N/A						
Hexamethyl cyclotrisiloxane	N/A	N/A						
Hexanal	N/A	N/A						
Isobutane	N/A	N/A		1.3		1.8	1.6	
Methyl cyclohexane	N/A	N/A						
Methyl cyclopentane	N/A	N/A				1.5	1.1	
Nonanal	N/A	N/A						
Ocatanal	N/A	N/A			1.3			
Octamethyl cyclotrisiloxane	N/A	N/A						
Octane	N/A	N/A						
Pentane	N/A	N/A						
trans-1,4-Dimethyl cyclohexane	N/A	N/A						

Dominguez Elementary School - Room 9 (DZ-9) VOC data

TENTATIVELY IDENTIFIED COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)			
			12/16/08	12/17/08	12/18/08	12/19/08
4-Bromofluorobenzene	N/A	N/A	9.66	9.52	9.74	10.01
1,3-Dimethyl cyclohexane	N/A	N/A			1.8	
1,3-Pentadiene	N/A	N/A				
1,4-Pentadiene	N/A	N/A				
1-Butanol	N/A	N/A				
1-Dodecene	N/A	N/A				
1S-.alpha.-Pinene	N/A	N/A				
2,2,3,3-Tetramethyl butane	N/A	N/A				
2,2,4,6,6-Pentamethyl heptane	N/A	N/A				
2,2,4-Trimethyl pentane	N/A	N/A				
2,2-Dimethyl hexane	N/A	N/A				
2,3,3-Trimethyl pentane	N/A	N/A	1.2			
2,3-Dimethyl pentane	N/A	N/A	1.4	1.1		
2-Methyl butane	N/A	N/A	1.6		1.1	1.5
2-Methyl hexane	N/A	N/A	2.4	2.2		
2-Methyl pentane	N/A	N/A	1.1			1.2
2-Methyl-1,3-butadiene	N/A	N/A				
3-Methyl butanal	N/A	N/A				
3-Methyl hexane	N/A	N/A	5	5.1	1.3	1.5
3-Methyl pentane	N/A	N/A				
Acetaldehyde	N/A	N/A	1.1			
Benzaldehyde	N/A	N/A				
Butanal	N/A	N/A				
Butane	N/A	N/A	1.2		1	1.2
Difluorochloromethane	N/A	N/A				
D-Limonene	N/A	N/A				
Heptanal	N/A	N/A				
Hexamethyl cyclotrisiloxane	N/A	N/A				
Hexanal	N/A	N/A				
Isobutane	N/A	N/A				
Methyl cyclohexane	N/A	N/A				
Methyl cyclopentane	N/A	N/A				
Nonanal	N/A	N/A				
Ocatanal	N/A	N/A				
Octamethyl cyclotrisiloxane	N/A	N/A				
Octane	N/A	N/A			2.7	
Pentane	N/A	N/A				
trans-1,4-Dimethyl cyclohexane	N/A	N/A			1	

Dominguez Elementary School - Room 11 (DZ-11) VOC data

SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			11/18/08	11/19/08	11/20/08	11/21/08	11/24/08	11/25/08
Propylene	1.0	0.04		5.4	3.7	6	4.5	2.9
Freon 12 (Dichlorodifluoromethane)	0.5	0.04		0.7	0.5	0.7	0.6	0.6
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03			0.01		0.01	0.01
Chloromethane	0.5	0.08	0.9	0.8	0.7	0.8	0.8	0.8
Vinyl chloride	0.5	0.04						
Bromomethane	0.5	0.05			0.04	0.03		0.02
Ethanol	1.5	0.30	530	150	180	170	270	200
Freon 11(Trichlorofluoromethane)	0.5	0.04			0.3			0.2
Isopropyl alcohol(2-Propanol)	1.5	0.03	70	22	15	12	11	16
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06		0.07	0.06	0.06	0.06	0.06
Acetone	3.0	0.08	34	30	20	28	29	21
Carbon disulfide	1.0	0.04	0.08	0.07	0.07	0.05	0.06	0.06
Methylene chloride	1.5	0.04	1.3	1	0.6	1.8	0.6	0.4
n-Hexane	0.5	0.03	1.3	1.1	1.9	1.5	0.6	0.4
2-Butanone(MEK)	1.5	0.07	2.4	2.8	1.8	2.4	2.5	1.9
Ethyl acetate	0.5	0.07	0.9	0.5	0.3	0.5	0.2	0.2
Chloroform	0.5	0.03	0.1	0.08	0.06	0.09	0.05	0.05
Tetrahydrofuran	0.5	0.07	0.7	0.6	0.1	0.5	0.3	0.2
Cyclohexane	0.5	0.04	1	0.7	2.2	9.6	0.5	0.3
Carbon tetrachloride	0.5	0.04	0.07	0.07	0.07	0.07	0.06	0.07
n-Heptane	0.5	0.04	3.6	0.7	1.7	1.1	0.6	
Benzene	0.5	0.02	1.5	1.2	1	1.6	0.8	0.6
Trichloroethene	0.5	0.04	0.07	0.07	0.03	0.07	0.02	0.05
Bromodichloromethane	0.5	0.04						
4-Methyl-2-pentanone(MIBK)	0.5	0.06	42	0.4	0.7	0.5	0.3	0.7
cis-1,3-Dichloropropene	0.5	0.04						
Toluene	0.5	0.05	6.8	4.9	3.3	9.6	3.2	2.4
trans-1,3-Dichloropropene	0.5	0.04						
1,1,2-Trichloroethane	0.5	0.06						
2-Hexanone(MBK)	1.5	0.05		0.2	0.1		0.4	0.2
Tetrachloroethene	0.5	0.04	0.3	0.2	0.08	0.3	0.1	0.09
Chlorobenzene	0.5	0.04						
Ethylbenzene	0.5	0.05	0.9	0.8	0.5	1.7	0.5	0.4
Xylene (para & meta)	1.0	0.10	3.1	2.3	1.7	5.7	1.7	1.2
Xylene (Ortho)	0.5	0.05	1.1	0.9	0.7	1.7	0.7	0.6
Styrene	0.5	0.05	1.5	0.6	0.4	0.7	1.3	0.4
Bromoform	0.5	0.05			0.01			
1,1,2,2-Tetrachloroethane	0.5	0.08						
4-Ethyltoluene	0.5	0.06	1.1	0.8	0.6	1.2	0.6	0.5
1,3,5-Trimethylbenzene	0.5	0.05	0.3	0.2		0.3	0.2	0.1
1,2,4-Trimethylbenzene	0.5	0.08	1.1	0.8	0.6	1.2	0.6	0.5
1,3-Dichlorobenzene	0.5	0.06						
1,4-Dichlorobenzene	0.5	0.05	0.2	0.1	0.09	0.2	0.1	0.08
1,2-Dichlorobenzene	0.5	0.10						
1,2,4-Trichlorobenzene	1.0	0.10						
Hexachloro-1,3-butadiene	0.5	0.30	0.02					

Dominguez Elementary School - Room 11 (DZ-11) VOC data

			VOC concentration (ppbv)					
SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	11/26/08	12/1/08	12/2/08	12/3/08	12/4/08	12/5/08
Propylene	1.0	0.04	1.2	4.4				2.7
Freon 12 (Dichlorodifluoromethane)	0.5	0.04	0.5	0.4	0.5	0.4	0.5	0.6
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03	0.01	0.01	0.01	0.04	0.04	0.06
Chloromethane	0.5	0.08	0.8	0.6	0.6	0.9	0.6	0.6
Vinyl chloride	0.5	0.04				0.05		
Bromomethane	0.5	0.05		0.06		0.05		
Ethanol	1.5	0.30	260	100	310	210	63	41
Freon 11(Trichlorofluoromethane)	0.5	0.04	0.2	0.2	0.2	0.2	0.3	0.4
Isopropyl alcohol(2-Propanol)	1.5	0.03	160	52	32	13	4.4	5.4
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06	0.06	0.06	0.06	0.09	0.09	0.1
Acetone	3.0	0.08	26	28	14	17	13	22
Carbon disulfide	1.0	0.04	0.03	0.06		0.07	0.04	0.1
Methylene chloride	1.5	0.04	0.2	0.4	0.2	0.3	0.4	0.6
n-Hexane	0.5	0.03	0.2	1.5	0.3	0.3	0.3	0.6
2-Butanone(MEK)	1.5	0.07	2.1	3.9	1.4	2	1.2	1.6
Ethyl acetate	0.5	0.07	0.2	0.3		0.3	0.2	0.3
Chloroform	0.5	0.03	0.03	0.06		0.06		0.09
Tetrahydrofuran	0.5	0.07						
Cyclohexane	0.5	0.04		0.7		0.2	0.2	0.4
Carbon tetrachloride	0.5	0.04	0.06	0.07	0.07	0.08	0.07	0.07
n-Heptane	0.5	0.04	1.4	1.3			0.2	0.5
Benzene	0.5	0.02	0.2	1.2	0.2	0.4	0.4	0.9
Trichloroethene	0.5	0.04	0.02	0.03		0.04	0.06	0.05
Bromodichloromethane	0.5	0.04				0.03		
4-Methyl-2-pentanone(MIBK)	0.5	0.06	2	0.4	0.1	0.2	0.2	0.2
cis-1,3-Dichloropropene	0.5	0.04				0.02		
Toluene	0.5	0.05	1	4.6	0.8	0.9	1	2.7
trans-1,3-Dichloropropene	0.5	0.04				0.02		0.02
1,1,2-Trichloroethane	0.5	0.06					0.03	
2-Hexanone(MBK)	1.5	0.05	0.2	0.4	0.2	0.2	0.1	0.1
Tetrachloroethene	0.5	0.04	0.03	0.08		0.06	0.07	0.1
Chlorobenzene	0.5	0.04					0.03	0.04
Ethylbenzene	0.5	0.05	0.2	0.6	0.1	0.2	0.2	0.4
Xylene (para & meta)	1.0	0.10	0.5	2	0.3	0.4	0.4	1.2
Xylene (Ortho)	0.5	0.05	0.3	0.9	0.2	0.2	0.2	0.5
Styrene	0.5	0.05	0.1	0.8	0.1	0.1	0.1	0.9
Bromoform	0.5	0.05						
1,1,2,2-Tetrachloroethane	0.5	0.08					0.03	0.04
4-Ethyltoluene	0.5	0.06	0.2	0.7	0.2	0.1	0.2	0.5
1,3,5-Trimethylbenzene	0.5	0.05	0.05	0.2	0.04	0.06	0.06	0.2
1,2,4-Trimethylbenzene	0.5	0.08	0.2	0.8	0.2	0.1	0.2	0.5
1,3-Dichlorobenzene	0.5	0.06				0.03	0.03	0.03
1,4-Dichlorobenzene	0.5	0.05	0.05	0.1	0.03	0.04	0.04	0.06
1,2-Dichlorobenzene	0.5	0.10				0.03	0.03	0.04
1,2,4-Trichlorobenzene	1.0	0.10				0.05	0.03	0.05
Hexachloro-1,3-butadiene	0.5	0.30				0.04	0.03	0.04

Dominguez Elementary School - Room 11 (DZ-11) VOC data

SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)					
			12/8/08	12/9/08	12/10/08	12/11/08	12/12/08	12/15/08
Propylene	1.0	0.04	1				4.7	0.7
Freon 12 (Dichlorodifluoromethane)	0.5	0.04	0.5	0.5	0.6	0.6	0.6	0.4
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03	0.03	0.02				
Chloromethane	0.5	0.08	0.5	0.5	0.4	0.6	0.5	0.5
Vinyl chloride	0.5	0.04						
Bromomethane	0.5	0.05						
Ethanol	1.5	0.30	18	42	6.4	60	23	99
Freon 11(Trichlorofluoromethane)	0.5	0.04	0.2	0.2	0.2	0.2	0.4	0.2
Isopropyl alcohol(2-Propanol)	1.5	0.03	35	8.4	4.2	7.9	3.2	13
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06	0.04	0.04			0.06	0.03
Acetone	3.0	0.08	14	15	5.9	19	19	15
Carbon disulfide	1.0	0.04	0.03	0.06	0.04	0.02	0.02	
Methylene chloride	1.5	0.04	0.2	0.5	0.2	0.5	0.8	0.3
n-Hexane	0.5	0.03	0.05	0.1	0.07	0.2	0.8	0.1
2-Butanone(MEK)	1.5	0.07	0.8	0.7	0.3	1.4	1.3	
Ethyl acetate	0.5	0.07					0.2	
Chloroform	0.5	0.03						
Tetrahydrofuran	0.5	0.07						
Cyclohexane	0.5	0.04	0.04	0.08		0.2	0.5	0.2
Carbon tetrachloride	0.5	0.04	0.03	0.03			0.06	
n-Heptane	0.5	0.04			0.1	0.2	0.6	
Benzene	0.5	0.02	0.07	0.2	0.2	0.1	1.1	0.06
Trichloroethene	0.5	0.04		0.02			0.06	
Bromodichloromethane	0.5	0.04						
4-Methyl-2-pentanone(MIBK)	0.5	0.06	0.04	0.09				2.9
cis-1,3-Dichloropropene	0.5	0.04						2.9
Toluene	0.5	0.05	0.1	0.4	0.5	0.5	3.8	
trans-1,3-Dichloropropene	0.5	0.04						
1,1,2-Trichloroethane	0.5	0.06						
2-Hexanone(MBK)	1.5	0.05		0.1		0.2		
Tetrachloroethene	0.5	0.04	0.01	0.03	0.02	0.02	0.1	
Chlorobenzene	0.5	0.04	0.01					
Ethylbenzene	0.5	0.05	0.03	0.07	0.07	0.08	0.6	0.03
Xylene (para & meta)	1.0	0.10	0.08	0.2	0.2	0.2	1.7	0.08
Xylene (Ortho)	0.5	0.05	0.04	0.1	0.1	0.1	0.6	0.03
Styrene	0.5	0.05	0.02	0.06	0.2	0.06	0.7	0.02
Bromoform	0.5	0.05						
1,1,2,2-Tetrachloroethane	0.5	0.08		0.03				
4-Ethyltoluene	0.5	0.06	0.04	0.07	0.1	0.08	0.5	0.03
1,3,5-Trimethylbenzene	0.5	0.05	0.02	0.03	0.05	0.03	0.1	0.01
1,2,4-Trimethylbenzene	0.5	0.08	0.04	0.08	0.2	0.08	0.5	0.04
1,3-Dichlorobenzene	0.5	0.06	0.01	0.01				
1,4-Dichlorobenzene	0.5	0.05	0.01	0.02	0.01	0.01	0.04	0.01
1,2-Dichlorobenzene	0.5	0.10						
1,2,4-Trichlorobenzene	1.0	0.10	0.02	0.02	0.02	0.02		0.02
Hexachloro-1,3-butadiene	0.5	0.30	0.01					

Dominguez Elementary School - Room 11 (DZ-11) VOC data

SPECIATED ORGANIC COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv)			
			12/16/08	12/17/08	12/18/08	12/19/08
Propylene	1.0	0.04			1.1	1.8
Freon 12 (Dichlorodifluoromethane)	0.5	0.04	0.4	0.4	0.4	0.4
Freon 114(1,2-Dichlorotetrafluoroethan)	0.5	0.03	0.02			
Chloromethane	0.5	0.08	0.5	0.6	0.5	0.5
Vinyl chloride	0.5	0.04				
Bromomethane	0.5	0.05				
Ethanol	1.5	0.30	110	150	58	32
Freon 11(Trichlorofluoromethane)	0.5	0.04	0.2	0.2	0.2	0.1
Isopropyl alcohol(2-Propanol)	1.5	0.03	18	20	10	5.4
Freon 113(1,1,2-Trichlorotrifluoroethan)	0.5	0.06			0.02	
Acetone	3.0	0.08	14	17	19	15
Carbon disulfide	1.0	0.04	0.04	0.01	0.03	
Methylene chloride	1.5	0.04	0.4	0.2	0.2	0.3
n-Hexane	0.5	0.03	0.1			0.05
2-Butanone(MEK)	1.5	0.07	0.3	0.6	1	
Ethyl acetate	0.5	0.07		0.2		
Chloroform	0.5	0.03				
Tetrahydrofuran	0.5	0.07				
Cyclohexane	0.5	0.04	0.1		0.05	
Carbon tetrachloride	0.5	0.04	0.03	0.02	0.02	
n-Heptane	0.5	0.04				
Benzene	0.5	0.02	0.2	0.03	0.05	0.09
Trichloroethene	0.5	0.04	0.02			
Bromodichloromethane	0.5	0.04				
4-Methyl-2-pentanone(MIBK)	0.5	0.06	6.6	3.5	0.2	0.8
cis-1,3-Dichloropropene	0.5	0.04				
Toluene	0.5	0.05	0.6	0.07	0.3	0.2
trans-1,3-Dichloropropene	0.5	0.04				
1,1,2-Trichloroethane	0.5	0.06				
2-Hexanone(MBK)	1.5	0.05		0.08	0.2	
Tetrachloroethene	0.5	0.04	0.03			
Chlorobenzene	0.5	0.04				
Ethylbenzene	0.5	0.05	0.1	0.02	0.03	0.05
Xylene (para & meta)	1.0	0.10	0.4	0.05	0.07	0.2
Xylene (Ortho)	0.5	0.05	0.2		0.04	0.06
Styrene	0.5	0.05	0.06			0.05
Bromoform	0.5	0.05				
1,1,2,2-Tetrachloroethane	0.5	0.08				
4-Ethyltoluene	0.5	0.06	0.2	0.02	0.03	0.05
1,3,5-Trimethylbenzene	0.5	0.05			0.01	0.02
1,2,4-Trimethylbenzene	0.5	0.08	0.2	0.02	0.03	0.05
1,3-Dichlorobenzene	0.5	0.06	0.01			
1,4-Dichlorobenzene	0.5	0.05	0.03			
1,2-Dichlorobenzene	0.5	0.10	0.01			
1,2,4-Trichlorobenzene	1.0	0.10	0.05			
Hexachloro-1,3-butadiene	0.5	0.30				

Dominguez Elementary School - Room 11 (DZ-11) VOC data

TENTATIVELY IDENTIFIED COMPOUNDS	Reporting Limit (ppbv)	Method Detection limit (ppbv)	VOC concentration (ppbv) 11/18/08	11/19/08	11/20/08	11/21/08	11/24/08	11/25/08
1,1-Difluoroethane	N/A	N/A						
1-Butanol	N/A	N/A						1.7
1-Dodecene	N/A	N/A						
2,2,3,3-Tetramethyl butane	N/A	N/A			2.1			
2,2,4,6,6-Pentamethyl heptane	N/A	N/A					1.2	
2,2,4-Trimethyl pentane	N/A	N/A	2.8					
2,2-Dimethyl hexane	N/A	N/A		2.1		3		
2,3-Dimethyl pentane	N/A	N/A	1.8	1.3	1.3	1.8		
2-Methyl butane	N/A	N/A	9.2	7.7	8.2	11	4.7	3.8
2-Methyl hexane	N/A	N/A	1.5		1.6	1.4		
2-Methyl pentane	N/A	N/A	4.1	3.2	3.6	4.6	2	1.4
2-Methyl-1,3-butadiene	N/A	N/A	2.6	1.8	1.3	1.7	1.4	1.1
3-Methyl butanal	N/A	N/A						
3-Methyl butane	N/A	N/A						
3-Methyl hexane	N/A	N/A	1.9		1.7	1.8	1.1	
3-Methyl pentane	N/A	N/A	2.1	1.8	2.2	2.5	1.1	
3-Methyl-1,2-butadiene	N/A	N/A						
Acetaldehyde	N/A	N/A	1.3	1.7	1.5		1.9	2.1
Benzaldehyde	N/A	N/A		1.4	1	1.5	1.8	1.6
Butanal	N/A	N/A						
Butane	N/A	N/A	6.4	6.4	7.5	7.9	3.9	3.1
Butyl ester acetic acid	N/A	N/A	8.8					
Difluorochloromethane	N/A	N/A	12					
D-Limonene	N/A	N/A				1.4		
Heptanal	N/A	N/A						
Hexamethyl cyclotrisiloxane	N/A	N/A					3.5	
Hexanal	N/A	N/A						
Isobutane	N/A	N/A	4.6	4.9	4.5	4.7	2.9	2.3
Methyl cyclohexane	N/A	N/A			1.2			
Methyl cyclopentane	N/A	N/A	1.8	1.4	2.3	2		
Naphthalene	N/A	N/A						
Nonanal	N/A	N/A						1.4
Ocatanal	N/A	N/A					1.1	1.3
Octamethyl cyclotrisiloxane	N/A	N/A					5.7	5.3
Pentanal	N/A	N/A						
Pentane	N/A	N/A	4.1	3.7		4.9	2.5	

Dominguez Elementary School - Room 11 (DZ-11) VOC data

			VOC concentration (ppbv)					
TENTATIVELY IDENTIFIED COMPOUNDS	**Reporting Limit (ppbv)**	**Method Detection limit (ppbv)**	**11/26/08**	**12/1/08**	**12/2/08**	**12/3/08**	**12/4/08**	**12/5/08**
1,1-Difluoroethane	N/A	N/A						
1-Butanol	N/A	N/A						
1-Dodecene	N/A	N/A			1			
2,2,3,3-Tetramethyl butane	N/A	N/A		1.6				
2,2,4,6,6-Pentamethyl heptane	N/A	N/A						
2,2,4-Trimethyl pentane	N/A	N/A						1.3
2,2-Dimethyl hexane	N/A	N/A						
2,3-Dimethyl pentane	N/A	N/A						
2-Methyl butane	N/A	N/A	2.1	8.7	2.2	2.1	2	3.9
2-Methyl hexane	N/A	N/A						
2-Methyl pentane	N/A	N/A		3.3				2
2-Methyl-1,3-butadiene	N/A	N/A	1.2					
3-Methyl butanal	N/A	N/A					1.1	
3-Methyl butane	N/A	N/A						1
3-Methyl hexane	N/A	N/A						
3-Methyl pentane	N/A	N/A		2.1				
3-Methyl-1,2-butadiene	N/A	N/A						1.2
Acetaldehyde	N/A	N/A	2.8	2.7	2.1	2.7		
Benzaldehyde	N/A	N/A	1.8	1.6				
Butanal	N/A	N/A			1.6	1.1		
Butane	N/A	N/A	2	8.5	2.6	2.5	1.8	2.9
Butyl ester acetic acid	N/A	N/A						
Difluorochloromethane	N/A	N/A						
D-Limonene	N/A	N/A					2.5	8
Heptanal	N/A	N/A			2.4			
Hexamethyl cyclotrisiloxane	N/A	N/A	3.3		1.2			
Hexanal	N/A	N/A			1.8			
Isobutane	N/A	N/A		5.6	2.3	1.8	1.3	2.6
Methyl cyclohexane	N/A	N/A						
Methyl cyclopentane	N/A	N/A		2.1				
Naphthalene	N/A	N/A						
Nonanal	N/A	N/A		1.7	1.7			
Ocatanal	N/A	N/A		1.6	1.8			
Octamethyl cyclotrisiloxane	N/A	N/A	6.9					
Pentanal	N/A	N/A			1.5			
Pentane	N/A	N/A						

Dominguez Elementary School - Room 11 (DZ-11) VOC data

			VOC concentration (ppbv)					
TENTATIVELY IDENTIFIED COMPOUNDS	**Reporting Limit (ppbv)**	**Method Detection limit (ppbv)**	**12/8/08**	**12/9/08**	**12/10/08**	**12/11/08**	**12/12/08**	**12/15/08**
1,1-Difluoroethane	N/A	N/A				2.6		
1-Butanol	N/A	N/A						
1-Dodecene	N/A	N/A						
2,2,3,3-Tetramethyl butane	N/A	N/A		1			1.8	
2,2,4,6,6-Pentamethyl heptane	N/A	N/A						
2,2,4-Trimethyl pentane	N/A	N/A						
2,2-Dimethyl hexane	N/A	N/A						
2,3-Dimethyl pentane	N/A	N/A						
2-Methyl butane	N/A	N/A		2.7			4.4	
2-Methyl hexane	N/A	N/A					1.1	
2-Methyl pentane	N/A	N/A		1.7			3.2	
2-Methyl-1,3-butadiene	N/A	N/A						
3-Methyl butanal	N/A	N/A						
3-Methyl butane	N/A	N/A						
3-Methyl hexane	N/A	N/A					1.3	
3-Methyl pentane	N/A	N/A					1.7	
3-Methyl-1,2-butadiene	N/A	N/A						
Acetaldehyde	N/A	N/A						
Benzaldehyde	N/A	N/A						
Butanal	N/A	N/A						
Butane	N/A	N/A	1.3	2.1			3.4	1.1
Butyl ester acetic acid	N/A	N/A						
Difluorochloromethane	N/A	N/A						
D-Limonene	N/A	N/A					2.3	
Heptanal	N/A	N/A						
Hexamethyl cyclotrisiloxane	N/A	N/A						
Hexanal	N/A	N/A						
Isobutane	N/A	N/A		1.3	2.4	1.2	1.7	
Methyl cyclohexane	N/A	N/A						
Methyl cyclopentane	N/A	N/A					1.4	
Naphthalene	N/A	N/A						
Nonanal	N/A	N/A						
Ocatanal	N/A	N/A						
Octamethyl cyclotrisiloxane	N/A	N/A						
Pentanal	N/A	N/A						
Pentane	N/A	N/A						

Dominguez Elementary School - Room 11 (DZ-11) VOC data

			VOC concentration (ppbv)			
TENTATIVELY IDENTIFIED COMPOUNDS	**Reporting Limit (ppbv)**	**Method Detection limit (ppbv)**	**12/16/08**	**12/17/08**	**12/18/08**	**12/19/08**
1,1-Difluoroethane	N/A	N/A				
1-Butanol	N/A	N/A				
1-Dodecene	N/A	N/A				
2,2,3,3-Tetramethyl butane	N/A	N/A	1.1			
2,2,4,6,6-Pentamethyl heptane	N/A	N/A				
2,2,4-Trimethyl pentane	N/A	N/A				
2,2-Dimethyl hexane	N/A	N/A				
2,3-Dimethyl pentane	N/A	N/A				
2-Methyl butane	N/A	N/A				
2-Methyl hexane	N/A	N/A				
2-Methyl pentane	N/A	N/A				
2-Methyl-1,3-butadiene	N/A	N/A				
3-Methyl butanal	N/A	N/A				
3-Methyl butane	N/A	N/A				
3-Methyl hexane	N/A	N/A				
3-Methyl pentane	N/A	N/A				
3-Methyl-1,2-butadiene	N/A	N/A				
Acetaldehyde	N/A	N/A				
Benzaldehyde	N/A	N/A				
Butanal	N/A	N/A				
Butane	N/A	N/A	1.1			
Butyl ester acetic acid	N/A	N/A	1.6			
Difluorochloromethane	N/A	N/A				
D-Limonene	N/A	N/A				
Heptanal	N/A	N/A				
Hexamethyl cyclotrisiloxane	N/A	N/A				
Hexanal	N/A	N/A				
Isobutane	N/A	N/A	1.4			
Methyl cyclohexane	N/A	N/A				
Methyl cyclopentane	N/A	N/A				
Naphthalene	N/A	N/A	1.2			
Nonanal	N/A	N/A				
Ocatanal	N/A	N/A				
Octamethyl cyclotrisiloxane	N/A	N/A				
Pentanal	N/A	N/A				
Pentane	N/A	N/A				

EXHIBIT C

PLANNING HEALTHY PLACES

A GUIDEBOOK FOR ADDRESSING LOCAL SOURCES OF AIR POLLUTANTS IN COMMUNITY PLANNING

MAY 2016

Bay Area Air Quality Management District

Planning Healthy Places

A Guidebook for Addressing Local Sources of Air Pollutants in Community Planning

This report is for information purposes only. Recommendations are advisory and should be followed by local governments at their own discretion. This report may inform local land use planning in the Bay Area, but does not commit local governments or the Air District to any specific course of regulatory action.

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WHAT IS PLANNING HEALTHY PLACES?

Planning Healthy Places is a guidebook that provides important air quality and public health information, and is intended to assist local governments in addressing and minimizing potential air quality issues by providing tools and recommended best practices that can be implemented to reduce exposure and emissions from local sources of air pollutants. The Bay Area Air Quality Management District (Air District) provides this information to be considered by land use planners, elected officials, developers, community groups, public health advocates, and anyone interested in integrating land use, air quality and public health. The Air District intends that the information and recommendations in this guidebook be incorporated into city or county General Plans, neighborhood or specific plans, land use development ordinances, or into single projects. The Air District's primary goal in providing this guidebook is to support and promote infill development - which is vital to reducing vehicle miles traveled (VMT) and the associated air pollutant and greenhouse gas (GHG) emissions - while minimizing local exposure to air pollution and promoting clean, healthy air for existing and future residents.

The Air District acknowledges that many factors other than solely air quality play a role in public health and healthy communities, including adequate housing, access to food and healthcare services, opportunities for active transportation and exercise, water quality, outdoor space, and more. There are many elements to consider and balance when planning for healthy communities, and the Air District encourages local governments and other decision-makers to use this guidebook in conjunction with resources on other aspects of public health.

PLANNING HEALTHY PLACES

Protecting Bay Area public health, air quality and the climate is the core mission of the Bay Area Air Quality Management District (Air District). Clean air is fundamental to public health and the high quality of life that makes the Bay Area a desirable place to live, work and visit. There are millions of emission sources in our region - oil refineries, industrial manufacturers, gas stations, cars and trucks, construction equipment, lawn mowers, fireplaces, consumer products, and more - that collectively emit many different types of air pollutants that are harmful to public health and the global climate. Through Air District and state level regulations and incentive programs, tremendous progress has been made in improving air quality. However, despite this progress, the quest for clean air continues and the challenges ahead seem daunting in our motor vehicle driven society. Transportation related emissions are significant sources of air pollutants such as fine particulate matter (fine PM) and toxic air contaminants (TACs) that have adverse health effects; further reductions in transportation emissions will result in health benefits. Additionally, cars and trucks represent the single largest source of greenhouse gas (GHG) emissions in the Bay Area; reducing these transportation related emissions is critical to achieving GHG reduction goals to stabilize the climate.

New health studies are continually providing evidence that air pollutants are harmful to our health at lower levels than previously thought. Additionally, some communities and neighborhoods in the region experience relatively higher air pollution levels and corresponding negative health impacts than others. Levels of local air pollutants such as fine PM and TACs are highest near air pollution sources, such as freeways, heavily trafficked seaports, and large industrial facilities. In addition, there are many smaller, more discrete sources of air pollution - including gas stations and back-up diesel generators - that exacerbate conditions in communities with already elevated levels of air pollution that can be harmful to people's health.

Placing residences in infill locations near jobs, transit and other services is increasingly important to help to reduce vehicle miles traveled, which will in turn improve overall air quality and reduce GHGs. However, careful planning is needed in areas that may have high localized levels of air pollution. Development in locations near major sources of air pollution could also result in increased local exposure to unhealthy levels of air pollutants to the people living there unless steps are taken to minimize exposure and reduce emissions. To assist local governments in addressing and minimizing potential air quality issues, the Air District is releasing this guidebook which provides recommended best practices that can be implemented to reduce exposure and emissions from local sources of air pollutants. Local governments, developers, and other interested stakeholders are encouraged to utilize this guidebook to implement these air quality solutions.

Figure 1: 2013 Impacted Communities

EFFORTS TO REDUCE AIR POLLUTION & EXPOSURE

For over sixty years the Air District has been implementing programs to reduce air pollution and public exposure. Air District actions include: conducting air monitoring and modeling to identify locations of elevated pollution concentrations and to assess potential health impacts (see Figure 1); adopting regulations, plans and guidelines to reduce emissions from stationary (i.e. industrial) and mobile (i.e. cars) pollution sources; enforcing existing Air District regulations and the state's mobile source regulations; providing grants and incentives to reduce emissions from mobile sources (targeted in the Bay Area's most impacted communities); and outreach and education to Bay Area residents on air quality issues and trends. These efforts, in combination with the California Air Resources Board's (ARB) vast array of regulations to reduce criteria pollutants, and toxic air contaminant (TAC's) including diesel particulate matter emissions from cars, trucks and industrial facilities, have been successful. Levels of criteria pollutants including fine particulates (fine PM), and TACs have been reduced dramatically in the Bay Area. The region has seen a fourfold reduction in cancer risk due to air toxics since 1990.

ON-GOING CHALLENGES

However, despite these accomplishments, some communities in the Bay Area are still disproportionately impacted by unhealthy levels of air pollution. The Air District's Community Air Risk Evaluation (CARE) program, which was initiated to identify, evaluate, and reduce health risks associated with exposure to air pollution, has conducted extensive research into identifying where disproportionately impacted communities are located. The CARE program examines TAC and fine PM emissions data from stationary sources, area sources, and on-road and off-road mobile sources, as well as ozone standard exceedance data, and health data for communities throughout the Bay Area to assess the potential exposure and health risks to sensitive populations such as children and the elderly. Identifying impacted communities and the significant air pollution sources within communities has helped the Air District to target emission reduction strategies for specific sources, and identify potential land use mitigation strategies to further reduce exposure in these disproportionately impacted areas. Figure 1 shows the most impacted communities in the Bay Area, as identified by the CARE program. It is particularly important for local governments within these CARE communities to implement the recommendations in this guidebook, because existing residents in these areas are exposed to higher concentrations of air pollution than other areas throughout the region.

The information presented in this guidebook builds upon the work conducted under the CARE program. The maps produced in conjunction with this guidebook are based upon local modeling conducted to identify potential impacts of air pollution at a fine grained, smaller scale (down to a 20m X 20m grid), as opposed to the region-wide maps conducted by the CARE program to identify communities which are, overall, more impacted by air quality than others.

CLIMATE CHANGE & PUBLIC HEALTH

As described previously, despite progress in reducing air pollution, some Bay Area residents are disproportionately impacted from exposure to air pollutants, and climate change threatens to further exacerbate air pollution. Longer and more severe heat waves will increase emissions of ozone precursors, accelerate ozone formation, and reduce wind and vertical mixing that disperse pollutants. Higher temperatures and drought conditions will create the conditions that lead to more frequent and more severe wildfires. As a consequence of climate change, Bay Area residents will be susceptible to increased respiratory and cardiovascular disease, as well as heat stroke and heat exhaustion. And the Bay Area communities that are already most impacted by air pollution will also be most vulnerable to the negative health impacts related to climate change. Therefore, it is more important than ever that we plan our communities to safeguard public health and minimize exposure to air pollution.

HEALTH IMPACTS

It is important to understand the potential health outcomes from exposure to certain types of air pollutants. Fine particulate matter and toxic air contaminants are the air pollutants which pose the greatest risk to people's health in the Bay Area.

Toxic Air Contaminants (TACs): The California Air Resources Board (ARB) is responsible for identifying TACs, which are defined as pollutants that "may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health". TACs are emitted from a wide range of sources in the Bay Area including diesel engines, cars, trucks, industrial processes, and gas stations. Types of TACs include diesel particulates, lead, benzene, formaldehyde, and hexavalent chromium, to name a few. These TACs, and others, are present in Bay Area air. Diesel particulate matter is the most significant toxic air contaminant, accounting for roughly 85% of the cancer risk from air toxics in the region. Exposure to TACs can cause serious health effects, including cancer and birth defects. Other adverse health effects can include damage to the immune system, neurological, reproductive (reduced fertility), developmental, and respiratory problems.

Fine Particulate Matter (PM): Epidemiological studies have established that exposure to fine particulate matter has serious adverse health impacts. "Fine" particulate matter refers to very small particles (less than 2.5 microns in diameter) that can travel deep into the lungs and enter the bloodstream. Fine PM originates from a variety of sources, including fossil fuel combustion, residential wood burning and cooking, and natural sources such as wildfires and dust. Researchers established long ago that exposure to PM has negative effects on the respiratory system, such as triggering asthma attacks, aggravating bronchitis, and diminishing lung function. More recent studies have found that fine PM can also harm the cardiovascular system, and may cause atherosclerosis (hardening of the arteries), ischemic strokes (caused by an obstruction of the blood supply to the brain), and heart attacks. Because of the serious cardiovascular effects of exposure to PM, studies have found a clear correlation between PM levels and exposure, and mortality. Studies also indicate that exposure to PM may be related to other negative health effects, including impacts on the brain such as reduced cognitive function, as well as an increased risk of diabetes. Recent research in the United States and internationally has begun to examine the potential health effects of even smaller particles known as ultrafine particles (UFP), which are particles less than 1.0 microns in diameter. Findings to date demonstrate that UFP can evade the body's defense mechanisms and penetrate deeply into lungs, bloodstream and organs. Exposure to fine PM remains the leading public health risk and contributor to premature death from air pollution in the Bay Area. For more information on fine PM and associated health effects, see the Air District's informational report entitled, "Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area" (2012).

As discussed previously, air pollution control programs and strategies in the state and the Bay Area have helped improve region-wide air quality significantly, despite growth in population and vehicle-miles traveled. However, these regional strategies are not always sufficient in protecting the health of people who live nearby sources of localized fine PM and toxic air contaminants. Research and epidemiological findings confirm that harmful TAC and fine PM pollutants are found in higher concentrations closer to their source of origin.

A number of health studies have shown that increased pollutant levels occur near busy roadways. For example, according to ARB, a study conducted in the Bay Area found concentrations of traffic-related fine PM and TACs to be highest within 300 meters downwind of freeways. Accordingly, the associated adverse health impacts are elevated in these areas. Evidence from recent studies is rapidly accumulating that indicates that people who live near busy roadways/freeways and other major sources of pollution are more likely to suffer from adverse health effects, including respiratory ailments such as reduced lung function and asthma, cardiovascular disease, low birth weight and pre-term birth, and have higher mortality rates than people who do not live in close proximity to such pollution sources. For instance, a Los Angeles County study found that pregnant women who live within 750 feet of high-volume roads have a 10-20% higher risk of early birth and low-birth weight babies. Health impacts to children living near roadways have been well documented and include wheezing, reduced lung function, and asthma. Other key health findings from health studies include:

- Increased premature death from near-roadway exposure of fine PM (Caiazzo, et al. 2013);

- Emerging consensus that exposure to near-roadway traffic-related pollution causes the development of asthma in children (Perez, et al. 2012);

- Increased non-asthma respiratory symptoms, impaired lung function, all-cause mortality, cardiovascular mortality, and cardiovascular morbility from exposure to traffic emissions (Boehmer, et al. 2013);

- Exposure to fine PM and other traffic-related particles were associated with decreased birth weight in California (Basu, 2013).

In response to earlier findings from the research, ARB developed recommendations for restricting sensitive land uses near heavily trafficked freeways/roadways and other types of air pollution sources (ARB's Air Quality and Land Use Handbook: A Community Health Perspective, April 2005). The U.S. EPA and Federal Highway Administration recently adopted new rules requiring agencies to demonstrate that transportation projects involving significant increases in diesel traffic do not create hazardous "hot spots". The U.S. EPA has also established new air monitoring requirements for locations near busy freeways in order to characterize local air pollutant concentrations, as well as associated exposures to sensitive populations. The implications of localized air pollutant concentrations and associated adverse health impacts make it important that local planners and policy makers take into account the local effects of air pollution on new development, as well as the effect of existing and new sources of air pollution on existing communities.

SENSITIVE POPULATIONS & LAND USES

Children and infants are among the most susceptible to air pollution due to their developing lungs, higher inhalation rates, narrower airways, and less mature immune systems. Children with allergies may also have an enhanced allergic response when exposed to particulate matter pollution. Other sensitive populations include the elderly, pregnant women, and those with respiratory or cardiovascular illnesses affected by air pollution. In recent years, the scientific understanding of the range of health effects of air pollution has increased, and numerous studies are finding adverse health effects from air pollution at levels once considered safe.

Sensitive land uses are places where sensitive populations are most likely to spend their time, such as schools, playgrounds, day care centers, nursing homes, medical facilities, and residential communities. Employment centers and commercial areas (that do not include residential or day care facilities) are generally not considered to be sensitive land uses, although local governments may apply recommendations in this document to such land uses if they so choose.

LOCATION, LOCATION, LOCATION

The Air District has a long history of supporting land use strategies that will reduce automobile use and emissions. Steps taken by the Air District to promote such land use strategies include the provision of tools such as CEQA guidelines for land use development projects, a transportation demand management tool, and control strategies in the 2010 Clean Air Plan (and prior clean air plans) on transportation and land use. The Air District collaborated with the Metropolitan Transportation Commission in 2014 to develop and jointly adopt the Bay Area Commuter Benefits Program which promotes the use of alternative transportation modes such as bicycling, walking, and taking transit. The Air District also provides grants for bicycling, ridesharing and shuttle programs, for example Bay Area BikeShare, to reduce on-road vehicle emissions and promote sustainable transportation modes.

Accordingly, the Air District strongly supports local and regional efforts to reduce vehicle miles traveled and promote “focused growth”, i.e. infill, transit-oriented, and mixed-use development throughout the region. Building such communities is critical to achieving reduced vehicle miles traveled, which will assist the Bay Area in attaining and maintaining health-based ambient air quality standards; in achieving continued reductions in TACs and fine PM from mobile sources; and in meeting GHG reduction goals. Focused growth strategies have the long-term benefit of improving overall air quality while also providing many other benefits to the Bay Area environment, including the preservation of natural land and open space, improved water quality, and protection of habitat and native wildlife species. Focused growth also provides important economic and equity benefits, including reduced traffic congestion and lower transportation costs, more housing options, and better access to jobs. Plan Bay Area, approved in July 2013, is the Bay Area's long-range plan to meet the requirements of SB 375 and advance focused growth initiatives which will reduce greenhouse gas emissions, improve regional air quality, expand housing and transportation choices, and build a strong regional economy. Plan Bay Area is an important step in creating healthier communities in our region, and the Air District strongly supports its initiatives.

However, despite the many long-term benefits of focused growth, the Air District cautions that locating sensitive populations in close proximity to major sources of air pollution (such as freeways and large industrial facilities) can expose people to harmful air pollution. As noted, concentrations of TACs and fine PM can be substantially elevated adjacent to and downwind of these sources, putting people who live there at risk of developing adverse health effects. Fortunately, negative health effects can be greatly reduced when distance is increased between the source of air pollution and sensitive land uses, and/or when measures are taken to reduce to remove air pollution (for example, through the use of air filtration). Accordingly, the Air District has provided a list of best practices that should be applied when placing sensitive land uses in areas with high levels if air pollution or in close proximity to local sources of air pollution.

The Air District acknowledges that local governments consider and balance many factors when making local land use decisions. This guidebook provides public health and air quality information to be considered along with other issues, such as housing needs, economic development priorities, and other quality of life issues. As previously stated, the overarching goal of this guidebook is to support and encourage infill development while promoting clean, healthy air for existing and future residents. Careful community planning can address the competing issues created by the need for infill development, while also protecting public health. This guidebook provides local governments with the information and tools needed to make their communities as health-protective as can be (from an air quality perspective).

PLANNING STRATEGIES

Planning Healthy Places recommends three primary strategies: (1) reduce or prevent emissions from pollution source(s) when possible; (2) implement best practices where appropriate to reduce exposure to harmful pollutants; and (3) perform a more detailed study of an area when necessary. These recommendations are all described in detail in the following section. A flowchart (pg. 13) and an interactive map are available to assist in identifying where best practices and further study should be applied. The locations shown in purple on the Air District's mapping tool represent where the Air District recommends implementing best practices. The locations shown in blue on the mapping tool represent where the Air District recommends conducting further study. See Figure 2 on pg. 10 for an example of the map, and visit www.baaqmd.gov/planninghealthyplaces for the complete map.

IMPLEMENT BEST PRACTICES TO REDUCE EMISSIONS

One of the most effective ways to reduce the public's exposure to harmful air pollution is to reduce emissions of TACs and fine PM released into the Bay Area air basin. Several agencies at various levels of government work to reduce air pollution. Air quality is regulated at the federal level by the U.S. EPA, at the state level by ARB, and by regional air districts. The Air District implements many programs to reduce the amount of air pollution emitted from stationary and mobile sources of air pollution. However, with over ~19,000 permitted stationary sources of emissions, 5 oil refineries, 150 million vehicle miles driven per day, and numerous sea ports and airports, the cumulative effects of all these sources cannot be completely eliminated.

Local governments can complement federal, state, and regional air quality programs to help protect residents of the Bay Area by implementing strategies that reduce emissions, and therefore the public's exposure to TACs and fine PM, through their land use authority and adoption of local ordinances. Examples include policies that limit the use of diesel generators, or control their emissions; limit the idling of trucks to 2 minutes or less; require the electrification of loading docks in new and existing commercial land uses; transportation demand management strategies; traffic management strategies, and stipulations on development projects to use only the cleanest equipment, vehicles and fuel during construction (a complete list of construction measures, which can be adopted as standard conditions of approval, begins on pg. 25). Local action to reduce air pollutant emissions has the benefit of protecting both existing and future residents from the potential adverse health effects from exposure to air pollution.

The Air District recommends that local governments adopt, as policies and/or enforceable ordinances, the following "best practices to reduce emissions". Implementing as many "best practices to reduce emissions" as is feasible will reduce potential health risks to the greatest extent. Best practices to reduce exposure to air pollution are discussed beginning on pg. 10.

Best Practices to Reduce Emissions of Local Air Pollution

Retrofit Generators to Low or Zero Emitting Technology
Encourage or require existing uses to retrofit generators with Best Available Control Technology to meet ARB's Tier 4 emission standards. Encourage the use of zero emission back-up power.

Electrify Loading Docks
Require the electrification of all loading docks to facilitate plug-in capability, and encourage or require trucks to utilize grid power in order to deliver goods.

Limit Idling Times
Prohibit trucks from idling for more than two minutes, or prohibit idling altogether.

Promote Zero Emission Vehicles and Alternative Fuels
Promote the use of zero emission vehicles and equipment, as well as renewable fuels (such as biogas).

Promote or Require the Use of Transportation Refrigeration Units (TRU)
The use of TRU's allows delivery trucks to maintain refrigeration in lieu of running/idling the main engine, thereby reduces emissions of diesel PM and TACs.

Transportation Demand Management (TDM) Strategies
Require the implementation of as many TDM strategies as feasible into projects. Examples include, but are not limited to, parking pricing strategies; parking maximums; mandated parking spaces for car-sharing programs; the provision of transit passes in residential, commercial and office developments; charging stations for electric vehicles; bicycle lockers or racks; teleworking policies; bicycling improvements; and more. For a recommended list of TDM strategies, consult the Air District's TDM tool: http://www.baaqmd.gov/plans-and-climate/air-quality-plans/smart-growth.

Traffic Management Strategies
Implement traffic circles at intersections, and lower speed limits. Consistent findings from multiple studies indicate that stop-and-go driving, vehicle idling, and deceleration/acceleration create hot spots. Additionally, many studies show that there are optimal speed limit ranges that result in lower emissions. As a co-benefit, these actions can enhance the pedestrian and bicycling environment.

A full description and detail on each best practice to reduce emissions is located in **Appendix A.**

IMPLEMENT BEST PRACTICES TO REDUCE EXPOSURE

In recent years, communities throughout California have been investigating and implementing best practices to reduce local exposure to air pollution. Reducing exposure to harmful air pollutants is not the same as reducing actual emissions. However, there are a variety of practices that are effective, technically feasible, relatively low cost, and have demonstrated the ability to reduce people's exposure to air pollution, and therefore minimize the potential adverse health effects. Many such best practices can be easily replicated from one jurisdiction to another.

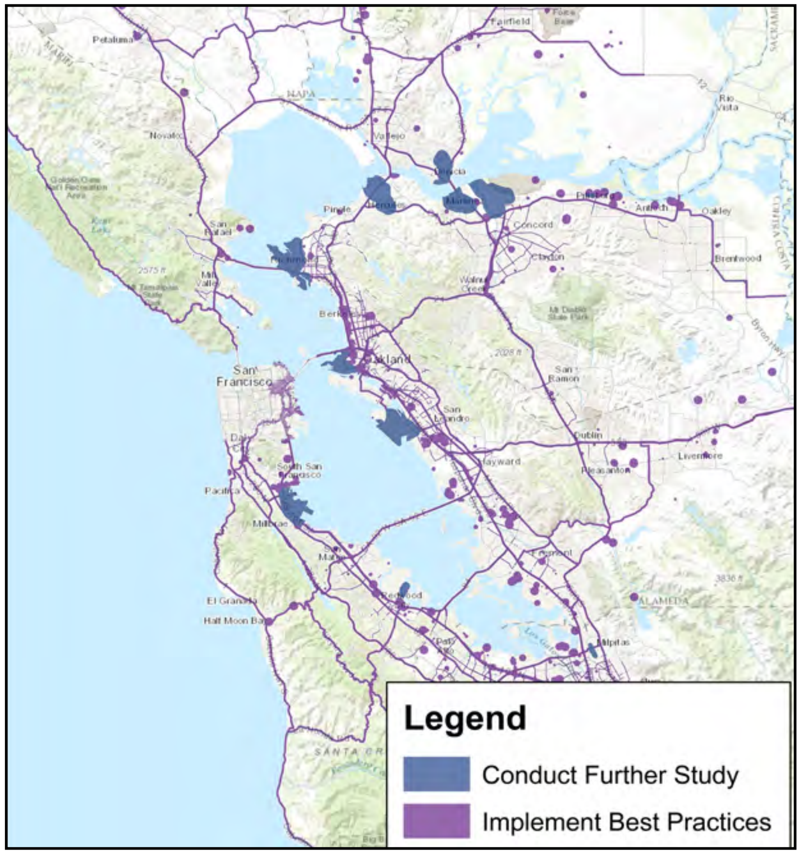

Figure 2

The best practices to reduce exposure are generally oriented for new development. However, many of the best practices to reduce exposure, such as installing air filters, can also be implemented at existing development, though implementation may be more difficult or costly.

The Air District recommends implementing all "best practices to reduce exposure" that are feasible and applicable to a project or plan in locations identified by the Air District as likely to experience elevated levels of air pollution, which are depicted in purple on the Air District's mapping tool (see FIgure 2 for an example, visit www.baaqmd.gov/planninghealthyplaces to access the tool).

Summary of Best Practices to Reduce Exposure to Local Air Pollution

Health Protective Distances

Plan sensitive land uses as far from local sources of air pollution such as freeways *as is feasible*.

Install Air Filters

Install air filters rated at a minimum efficiency reporting value (MERV) 13 or higher in buildings associated with sensitive land uses (e.g. schools, residences, hospitals).

Project Phasing

When applicable, and when development is being phased over time (i.e. being built over several years), build residential units and/or sensitive land uses that are closest to the emissions source at the latest date in the future (e.g. in year 5 vs. year 1).

Building Site Design and Operations

When designing a project site or developing a plan area, place sensitive land uses as far away from emission sources (including loading docks, busy roads, etc.) as is feasible. Place open space, commercial buildings, or parking garages between sensitive land uses and air pollution sources. This will help to create a “buffer” separating housing and other sensitive land uses away from air pollutants. Locate operable windows, balconies, and building air intakes as far away from any emission source as is feasible. Incorporating open space (i.e. parks) between buildings can improve air flow and air pollution movement.

Barriers (sound walls)

Consider incorporating solid barriers into site design, similar to a sound wall, between buildings and sources of air pollution (for example, a freeway).

Vegetation

Plant dense rows of trees and other vegetation between sensitive land uses and emission source(s). Large, evergreen trees with long life spans work best in trapping air pollution, including: Pine, Cypress, Hybrid Poplar, and Redwoods.

Consider Limiting Ground Floor Uses

Consider limiting sensitive land uses on the ground floor units of buildings near non-elevated sources, e.g. ground level heavily traveled roadways and freeways.

Alternative Truck Routes

Truck routes can be planned or re-rerouted through non-residential neighborhoods, and to avoid other sensitive land uses such as daycare centers, schools, and elderly facilities.

A full description and detail on each *Best Practice to Reduce Exposure* to air pollution is located in **Appendix B**.

FURTHER STUDY AREAS

The Air District has identified a number of areas within the Bay Area where additional analysis (i.e. further study) is recommended to assess the local concentrations of TACs and fine PM, and therefore the health risks from air pollution. These areas are characterized by “large and complex” industrial facilties such as oil refineries, large airports, and seaports, etc., and the Air District recommends using caution when considering sensitive land uses in these areas. More information on “large and complex” sources is below.

Conducting “further study” would entail air quality modeling to more precisely determine fine PM concentrations and/or to estimate increased health risks from air toxics to determine if there is an unacceptable level of health risk, and to identify measures that can be implemented to reduce the health risks to acceptable levels. Air District staff can provide assistance in conducting “further study”, including providing emissions data and information on specific air pollution sources. Once further study is complete, Air District staff can assist in identifying the best measures to reduce health risks. Local jurisdictions or project applicants can request Air District assistance with the “further study” process by contacting the Air District. Contact information is available at www.baaqmd.gov/planninghealthyplaces.

In conjunction with this guidebook is a mapping tool produced by the Air District, which shows where the “large and complex” sources are located. Visit www.baaqmd.gov/planninghealthyplaces to view the maps. The locations depicted in blue show the location of the “large and complex” sources, and are designated as further study. The flowchart on the next page provides an explanation on determining if a project or plan area may be in a location with elevated levels of air pollutants, and where the Air District recommends conducting further study versus implementing best practices.

Large and/or Complex Sources

Large and complex sources, for example oil refineries or seaports, can emit relatively high levels of TACs and fine PM. There are typically numerous emission sources within each of these facilities, making it difficult to characterize the specific local variations of concentrations of TACS and fine PM within the surrounding community.

Larger gas stations with higher volume throughput are considered complex sources due to the *type* of emissions they release. Gas stations emit TACs that are primarily gaseous in nature. Because some of the best practices discussed previously (e.g. air filters) solely reduce fine (and coarse) PM, a more detailed local analysis is necessary to determine potential impacts of gaseous air pollutants and to identify appropriate health protective measures. Gas stations are required to install best available control technology as part of their permit from the Air District. The control technologies reduce upwards of 95% of their emissions, but not all of them. Therefore, aside from increasing the distance between these sources and sensitive land uses, there are fewer options to reduce exposure from these source types. Carbon filters can be used in building ventilation systems to remove odors, gases and vapors; however they are not commonly used in residential buildings due to cost and maintenance requirements.

APPLYING THE PLANNING STRATEGIES

The flowchart below provides a general overview for determining if a particular planning area or project site may be located in an area with elevated concentrations of air pollution, and how to address such situations during the planning process. To accompany the flow chart, the Air District provides an interactive mapping tool of Bay Area communities which identifies the locations that are characterized by elevated air pollution levels or the presence of “large and complex” sources. **The interactive mapping tool depicts areas where the Air District recommends implementing best practices, and where the Air District recommends conducting further study. The mapping tool also quickly shows where no additional analysis or best practices are recommended (from an air quality perspective).** Visit www.baaqmd.gov/planninghealthyplaces to access the mapping tool.

Instructions: Open the Air District’s interactive mapping tool. Find your project or plan area by using the search function in the map. Consult the flow chart below.

1. IS YOUR PROJECT OR PLAN IN A BLUE AREA?

--> Yes: Conduct Further Study (see pg. 12).
--> No: Go to Step 2.

2. IS YOUR PROJECT OR PLAN IN A PURPLE AREA?

--> Yes: Implement best practices to reduce exposure (see pg. 10).
--> No: No further analysis is recommended.

IMPLEMENTATION

Local government agencies can utilize a variety of strategies to reduce exposure to, and emissions of, air pollution, including the adoption of air quality-specific ordinances (e.g. San Francisco's Article 38); standard conditions of approval relating to air quality (e.g. Oakland's Standard Conditions of Approval); and the incorporation of air quality-related policies and measures into general plans and other planning documents (e.g. Richmond, San Jose, Hayward, and Santa Clara County General Plan updates). Several examples of local government actions are described below. The examples are offered to demonstrate that there are ways in which local government agencies can pro-actively address local sources of air pollution within their communities. The Air District recommends that local governments implement policies and/or ordinances that are clear and enforceable, and include a mechanism for monitoring. Strong language in policies and/or ordinances will increase effectiveness of the action.

These examples may change or be updated over time. Visit the Air District's website, www.baaqmd.gov/planninghealthyplaces to view any additions or revisions to the list of case studies highlighted below. The Air District also encourages readers to visit each jurisdiction's website to determine the most up-to-date policies and requirements.

CITY OF SAN FRANCISCO, ARTICLE 38

Article 38 (originally adopted in 2008 and updated in 2014), intended to protect health and welfare in San Francisco, established Air Pollutant Exposure Zones (Zones) and requires enhanced ventilation systems to be installed for all urban infill sensitive land use development within those Zones. San Francisco collaborated with the Air District to create a map of the Air Pollutant Exposure Zones based on air quality modeling. These Zones depict all locations within San Francisco where the estimated cumulative PM2.5 concentration is greater than 10 micrograms/m^3 or where the cumulative excess cancer risk of cancer from air pollutants is greater than 100 in a million. Additionally, the Zones include all locations within 500 feet of any freeway, even if those locations were not otherwise captured by modeling estimates. The Zones also incorporate additional areas of concern, which include zip codes with high hospitalization rates and emergency room visits for air pollution-related conditions (such as asthma, pneumonia, etc.) and concentrations of PM2.5 greater than 9 micrograms/m^3 or cumulative excess cancer risk is greater than 90 in a million.

Article 38 requires enhanced ventilation systems "capable of achieving the protection from particulate matter (PM2.5) equivalent to that associated with MERV 13 filtration (as defined by ASHRAE standard 52.2)" to be installed in sensitive use buildings that are identified within the Air Pollutant Exposure Zones that are either a) newly constructed; b) undergoing a "major alteration to existing building"; or c) subject of an application for a Planning Department-permitted Change of Use. Additional information, including a map of the Air Pollutant Exposure Zones, is located on the City of San Francisco's Article 38 webpage.

SAN FRANCISCO CLEAN CONSTRUCTION ORDINANCE

In April 2007, the City and County of San Francisco (City) adopted an Ordinance requiring public projects to reduce emissions at construction sites starting in 2009. In March 2015, the City expanded the existing Ordinance to require public projects to further reduce emissions at construction sites in certain areas with high levels of background concentrations of air pollutants. The revised Clean Construction Ordinance became operative on September 6, 2015 and contains the following requirements:

- Use Tier 2 or higher engines and the most effective Verified Diesel Emission Control Strategies (VDECS) available for the engine type (Tier 4 engines automatically meet this requirement) as certified by the California Air Resources Board (ARB).

- Prohibit portable diesel engines where access to alternative sources of power are available.

- Restrict idling to two minutes.

- Properly maintain and tune equipment in accordance with manufacturer specifications.

A Construction Emissions Minimization Plan is required for all construction projects within an Air Pollution Exposure Zone, which must include the following:

- An equipment inventory which shall include estimates of the construction timeline by phase with description of each piece of off- road equipment required for each phase.

- Signage indicating idling limits and engine/Verified Diesel Emission Control Strategies requirements.

- Certification Statement.

Monitoring of all construction activities including:

- An equipment inventory which shall include estimates of the construction timeline by phase with description of each piece of off- road equipment required for each phase.

- Quarterly reports documenting compliance with the Emissions Plan which shall be maintained at the project site.

- Final report summarizing construction activities.

CITY OF SAN FRANCISCO, COMMUNITY RISK REDUCTION PLAN

The City and County of San Francisco is developing a Community Risk Reduction Plan (CRRP). The purpose of the CRRP is to protect human health through the reduction of emissions and exposure to ambient air pollution in the City and County of San Francisco. The CRRP is expected to establish citywide objectives and targets for air quality improvement and a set of local actions to reduce health impacts for disproportionately exposed communities in San Francisco.

CITY OF OAKLAND, STANDARD CONDITIONS OF APPROVAL

To help clarify and standardize analysis and decision-making in the environmental review process in the City of Oakland, the City established standard conditions of approvals (SCAs) that apply to all development projects, depending upon the specific circumstances of each project. The SCAs are designed to substantially mitigate environmental effects. There are a number of SCAs on environmental issues ranging from aesthetics, to air quality, to transportation. The SCAs are part of the municipal code, formally adopted by the Oakland City Council in 2008. They were most recently updated in July 2015.

Oakland's SCA's for air quality relate to construction and operations. The SCA's for construction require that "all projects involving construction activities shall implement all of the following applicable air pollution control measures during construction of the project". The SCAs include a number of "basic controls" for dust and exhaust related construction emissions. There are also "enhanced controls" for construction that apply to projects of certain criteria, such as large residential projects, demolition projects, etc. These projects must apply all "basic" and "enhanced" controls (which include additional measures addressing dust and exhaust related emissions).

The City of Oakland also requires conditions to all projects that meet the following criteria:

a. The project involves any of the following sensitive land uses: residential uses; new or expanded daycares, schools, parks, nursing homes, or medical facilities; AND

b. The project is located within 1,000 (or other distance as specified below) of one or more of the following sources of air pollution:

- Freeway;

- Roadway with significant traffic (at least 10,000 vehicles/day);

- Rail line (except BART) with over 30 trains per day;

- Distribution center that accommodates more than 100 trucks per day, more than 40 trucks with operating TRU units per day, or where the TRU unit operations exceed 300 hours per work week.

- Major rail or truck yard (such as the Union Pacific rail yard adjacent to the Port of Oakland);

- Ferry Terminal;

- Stationary pollutant source requiring permit from BAAQMD (such as a diesel generator);

- Within 0.5 miles of the Port of Oakland or Oakland Airport;

- Within 300 feet of a gas station;

- Within 300 feet of a dry cleaner with a machine using PERC (or within 500 feet of a dry cleaner with two or more machines using PERC); AND

c. The project exceeds the health risk screening criteria after a screening analysis is conducted in accordance with the BAAQMD CEQA Guidelines.

Health Risk Reduction Measures
Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to exposure to toxic air contaminants.
The project applicant shall choose one of the following methods:

1. The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk of exposure of project residents/occupants/users to air pollutants. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes that the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City;

OR

2. The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the

project drawings submitted for the construction-related permit or on other documentation submitted to the City:

- Installation of air filtration to reduce cancer risks and Particulate Matter (PM) exposure for residents and other sensitive populations in the project that are in close proximity to sources of air pollution. Air filter devices shall be rated MERV-13 [MERV-16 for projects located in the West Oakland Specific Plan area] or higher. As part of implementing this measure, an ongoing maintenance plan for the building's HVAC air filtration system shall be required.

- Where appropriate, install passive electrostatic filtering systems, especially those with low air velocities (i.e., 1 mph).

- Phasing of residential developments when proposed within 500 feet of freeways such that homes nearest the freeway are built last, if feasible.

- The project shall be designed to locate sensitive receptors as far away as feasible from the source(s) of air pollution. Operable windows, balconies, and building air intakes shall be located as far away from these sources as feasible. If near a distribution center, residents shall be located as far away as feasible from a loading dock or where trucks concentrate to deliver goods.

- Sensitive receptors shall be located on the upper floors of buildings, if feasible.

- Planting trees and/or vegetation between sensitive receptors and pollution source, if feasible. Trees that are best suited to trapping PM shall be planted, including one or more of the following: Pine (*Pinus nigra* var. *maritima*), Cypress (*X Cupressocyparis leylandii*), Hybrid popular (*Populus deltoids X trichocarpa*), and Redwood *(Sequoia sempervirens*).

- Sensitive receptors shall be located as far away from truck activity areas, such as loading docks and delivery areas, as feasible.

- Existing and new diesel generators shall meet CARB's Tier 4 emission standards, if feasible.

- Emissions from diesel trucks shall be reduced through implementing the following measures, if feasible: Installing electrical hook-ups for diesel trucks at loading docks; Requiring trucks to use Transportation Refrigeration Units (TRU) that meet Tier 4 emission standards; Requiring truck-intensive projects to use advanced exhaust technology (e.g., hybrid) or alternative fuels; Prohibiting trucks from idling for more than two minutes; Establishing truck routes to avoid sensitive receptors in the project. A truck route program, along with truck calming, parking, and delivery restrictions, shall be implemented.

Maintenance of Health Risk Reduction Measures
Requirement: The project applicant shall maintain, repair, and/or replace installed health risk reduction measures, including but not limited to the HVAC system (if applicable), on an ongoing and as-needed basis. Prior to occupancy, the project applicant shall prepare and then distribute to the building manager/operator an operation and maintenance manual for the HVAC system and filter including the maintenance and replacement schedule for the filter.

Stationary Sources of Air Pollution (Toxic Air Contaminants): The following condition applies to all projects that involve a stationary pollutant source requiring a permit from BAAQMD, including but not limited to back-up diesel generators. The California Building Code requires back-up diesel generators for all buildings over 70 feet tall.

Requirement: The project applicant shall incorporate appropriate measures into the project design in order to reduce the potential health risk due to on-site stationary sources of toxic air contaminants. The project applicant shall choose one of the following methods:

- The project applicant shall retain a qualified air quality consultant to prepare a Health Risk Assessment (HRA) in accordance with California Air Resources Board (CARB) and Office of Environmental Health and Hazard Assessment requirements to determine the health risk associated with proposed stationary sources of pollution in the project. The HRA shall be submitted to the City for review and approval. If the HRA concludes that the health risk is at or below acceptable levels, then health risk reduction measures are not required. If the HRA concludes the health risk exceeds acceptable levels, health risk reduction measures shall be identified to reduce the health risk to acceptable levels. Identified risk reduction measures shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City.

OR

- The project applicant shall incorporate the following health risk reduction measures into the project. These features shall be submitted to the City for review and approval and be included on the project drawings submitted for the construction-related permit or on other documentation submitted to the City: Installation of non-diesel fueled generators, if feasible, or; Installation of diesel generators with an EPA-certified Tier 4 engine or engines that are retrofitted with a CARB Level 3 Verified Diesel Emissions Control Strategy, if feasible.

Truck-Related Risk Reduction Measures (Toxic Air Contaminants): The following condition applies to all projects that involve new truck loading docks or a truck fleet of any size registered to the project applicant/operator.

Truck Loading Docks

Requirement: The project applicant shall locate proposed truck loading docks as far from nearby sensitive receptors as feasible.

Truck Fleet Emission Standards

Requirement: The project applicant shall comply with all applicable California Air Resources Board (CARB) requirements to control emissions from diesel engines and demonstrate compliance to the satisfaction of the City. Methods to comply include, but are not limited to, new clean diesel trucks, lower-tier diesel engine trucks with added Particulate Matter (PM) filters, hybrid trucks, alternative energy trucks, or other methods that achieve the applicable CARB emission standard. Compliance with this requirement shall be verified through CARB's Verification.

CITY OF SAN JOSE, 2040 GENERAL PLAN

The City of San Jose (City) updated its general plan in 2012. The City's 2040 General Plan includes a number of environmentally sustainable and environmental justice goals and initiatives, including reducing residents' exposure to toxic air contaminants. To promote implementation of these policies, City staff has identified measurements and tracking tools to monitor the City's progress, as well as specific policies and action statements.

Policies on Toxic Air Contaminants

- Require completion of air quality modeling for sensitive land uses such as new residential developments that are located near sources of pollution, such as freeways and industrial uses.

- Require new residential development projects and projects categorized as sensitive receptors to incorporate effective mitigation into project designs or be located an adequate distance from sources of toxic air contaminants (TACs) to avoid significant risks to health and safety.

- For projects that emit toxic air contaminants, require project proponents to prepare health risk assessments in accordance with Air District recommended procedures as part of environmental review and employ effective mitigation to reduce possible health risks to a less than significant level. Alternatively, require new projects (such as but not limited to industrial, manufacturing, and processing facilities) that are sources of TACs to be located an adequate distance from residential areas and other sensitive populations.

- Review projects generating significant heavy duty truck traffic to designate truck routes that minimize exposure of sensitive populations to TACs and particulate matter.

- Encourage the installation of appropriate air filtration at existing schools, residences, and other sensitive land uses adversely affected by pollution sources.

- Encourage the use of pollution absorbing trees and vegetation in buffer areas between substantial sources of TACs and sensitive land uses.

Actions on Toxic Air Contaminants

- Develop and adopt a comprehensive Community Risk Reduction Plan that includes: baseline inventory of toxic air contaminants and particulate matter smaller than 2.5 microns (PM2.5) emissions from all sources, emissions reduction targets, and enforceable emission reduction strategies and performance measures. The Community Risk Reduction Plan will include enforcement and monitoring tools to ensure regular review of progress toward the emission reduction targets, progress reporting to the public and responsible agencies, and periodic updates of the plan, as appropriate.

- Consult with the Air District to identify stationary and mobile TAC sources and determine the need for and requirements of a health risk assessment for proposed developments.

- For new projects that generate truck traffic, require signs which remind drivers that the State truck idling law limits truck idling to five minutes.

CITY OF RICHMOND, GENERAL PLAN

The City of Richmond (City) updated its General Plan in 2012, and it includes a voluntary *Community Health and Wellness* element. The purpose of the new element is to “establish a strong policy framework for developing conditions that will improve the physical health and emotional well-being of Richmond residents.” The element also seeks to make the connection between community and environmental health and compact, sustainable development. Richmond’s General Plan states that “...many residents and workers are impacted by air, water, soil and noise pollution. Richmond has many heavy industrial land uses including a seaport, major refinery, and significant railroad terminal that contribute to local air and noise pollution.” To address these impacts, the City adopted policies in the General Plan to reduce emissions of, and exposure to, air pollutants (see below).

City staff also recommends improvements to air quality by working with the Air District and industrial operators to reduce emissions from industry, ships, trucks and automobiles; especially to reduce exposure to children and seniors. Specific air quality-related policies within the *Community Health and Wellness* element include:

- Support regional policies and efforts that improve air quality to protect human and environmental health and minimize disproportionate impacts on sensitive population groups. Work with businesses and industry, residents and regulatory agencies to reduce the impact of direct, indirect and cumulative impacts of stationary and non-stationary sources of pollution such as industry, the Port, railroads, diesel trucks and busy roadways. Ensure that sensitive uses such as schools, childcare centers, parks and playgrounds, housing and community gathering places are protected from adverse impacts of emissions.

- Continue to work with stakeholders to reduce impacts associated with air quality on disadvantaged neighborhoods and continue to participate in regional planning efforts with nearby jurisdictions and the Bay Area Air Quality Management District to meet or exceed air quality standards. Support regional, state and federal efforts to enforce existing pollution control laws and strengthen regulations.

CITY OF HAYWARD, GENERAL PLAN

The 2040 Hayward General Plan (Approved July 2014) integrates the typical elements of a community risk reduction plan into the policy framework of the General Plan. The policy framework includes specific long-term goals, policies, and implementation programs to reduce communitywide exposure to TACs and PM2.5. This integrated approach allows the City to incorporate the analysis and components of a "stand-alone" community risk reduction plan into appropriate section of the General Plan. One of the long-term goals of the Plan (NR-2) is to improve the health and sustainability of the community through continued local efforts to improve regional air quality, reduce greenhouse gas emissions, and reduce community exposure to health risks associated with toxic air contaminants and fine particulate matter. Notable policies and programs under this goal include:

- NR-2.13 Wood Stove and Fireplace Replacement: The City shall promote the replacement of non-EPA certified fireplaces and woodstoves and encourage city residents to participate in Bay Area Air Quality Management District programs, such as the Wood Stove Rebate Program.

- NR-2.15 Community Risk Reduction Strategy: The City shall maintain and implement the General Plan as Hayward's community risk reduction strategy to reduce health risks associated with toxic air contaminants (TACs) and fine particulate matter (PM2.5) in both existing and new development.

- NR-2.16 Sensitive Uses: The City shall minimize exposure of sensitive receptors to toxic air contaminants (TAC), fine particulate matter (PM2.5), and odors to the extent possible, and consider distance, orientation, and wind direction when siting sensitive land uses in proximity to TAC- and PM2.5-emitting sources and odor sources in order to minimize health risk.

- NR-2.17 Source Reduction Measures: The City shall coordinate with and support the efforts of the Bay Area Air Quality Management District, the California Air Resources Board, the U.S. Environmental Protection Agency, and other agencies as appropriate to implement source reduction measures and best management practices that address both existing and new sources of toxic air contaminants (TAC), fine particulate matter (PM2.5), and odors.

- NR-2.18 Exposure Reduction Measures for New Receptors: The City shall require development projects to implement all applicable best management practices that will reduce exposure of new sensitive receptors (e.g., hospitals, schools, daycare facilities, elderly housing and convalescent facilities) to odors, toxic air contaminants (TAC) and fine particulate matter (PM2.5).

- NR-2.19 Exposure Reduction Measures for both Existing and New Receptors: The City shall work with area businesses, residents and partnering organizations to provide information about best management practices that can be implemented on a voluntary basis to reduce exposure of sensitive receptors to toxic air contaminants (TAC) and fine particulate matter (PM2.5).

SANTA CLARA COUNTY, GENERAL PLAN

The Health Element of the Santa Clara County General Plan has been prepared at the direction of the Santa Clara County Board of Supervisors as a new element, incorporating and updating certain existing subject matter and policies from the existing Health and Safety Chapters, and building a renewed emphasis on collaborative, comprehensive approaches to planning for community health. Under the "Air Quality and Climate Change," section there are major strategies and policies intended to convey a comprehensive approach for improving air quality, protecting the climate, and protecting public health. Examples include:

- HE-G.4 Off-road source: Encourage mobile source emission reduction from off-road equipment such as construction, farming, lawn and garden, and recreational vehicles by retrofitting, retiring and replacing equipment and by using alternate fuel vehicles.

- HE-G.7 Sensitive receptor uses: Promote measures to protect sensitive receptor uses, such as residential areas, schools, day care centers, recreational playfields and trails, and medical facilities by locating uses away from major roadways and stationary area sources of pollution, where possible, or incorporating feasible, effective mitigation measures.

- HE-G.8 CARE Communities focus: Promote awareness of geographic areas subject to persistently poorer air quality and assist the Air District in monitoring and reducing emissions from all sources in CARE communities

- HE-G.9 Healthy infill development: Promote measures and mitigations for infill development to protect residents from air and noise pollution, such as more stringent building performance standards, proper siting criteria, development and environmental review processes, and enhanced air filtration.

PLANNING FOR CONSTRUCTION

While construction activities are typically short-term or temporary in duration, they can generate a substantial amount of particulate matter and other criteria pollutants, toxic air contaminants, fugitive dust, and greenhouse gases. Therefore the emissions associated with construction activity can have regional implications to the attainment status of state and federal ambient air quality standards, but more importantly may adversely impact the health of nearby sensitive populations.

Emissions from construction equipment are regulated by both the US EPA and ARB. The emission standards for new engines vary according to the rated horsepower of the engine and model year of the equipment, and are set forth in a series of tiers (1-4), with each tier becoming progressively cleaner for either nitrogen oxides (NOx) and/or PM emissions. In addition, ARB's In-Use Off-Road Diesel Vehicle Regulation (Off-Road rule) generally applies to all self-propelled off-road diesel vehicles over 25 horsepower used in California. The Off-Road rule requires off-road fleet owners subject to the rule to meet fleet wide emission limits based on the size of their fleet and to reduce their emissions by retiring, replacing, or repowering older engines or installing Verified Diesel Emission Control Strategy, or VDECS. Compliance dates range from 2014 for larger fleets to 2019 for the smallest fleets.

All of the best practices for construction should be required at the time grading permits are issued. Implementation of these best practices, or others that achieve the same or greater emission reductions, should ensure that regional or local air quality impacts from construction are minimized to the maximum extent feasible.

The overall purpose of the Off-Road rule is to encourage turnover of older, higher-emitting equipment to cleaner, lower-emitting equipment in construction fleets. This turnover will help to further reduce emissions of NOx and fine PM within California communities.

While such programs and regulations will gradually reduce air pollution from the construction fleet, best practices are still needed to reduce air pollutants at the local level, which will help to protect sensitive populations that may be in close proximity to construction activity.

Construction Best Practices

Table 1 presents a current list of best practices for construction equipment identified by the Air District. The best practices address both dust generated by construction activity as well as exhaust from construction equipment. This list will be updated as new technologies or strategies become available to further reduce the air quality and health impacts associated with construction activity. All of the best practices applicable to a project should be required at the time grading permits are issued.

Table 1: Best Practices for Construction

For Dust

All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. Maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.

All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping should be done in conjunction with thorough watering of the subject roads.

All vehicle speeds on unpaved roads shall be limited to 15 mph.

All roadway, driveway and sidewalk paving shall be completed as soon as possible. Building pads shall be paved as soon as possible after grading.

All construction sites shall provide a posted sign visible to the public with the telephone number and person to contact at the Lead Agency regarding dust complaints. The recommended response time for corrective action shall be within 48 hours. The Air District's Complaint Line (1-800-334-6367) shall also be included on posted signs to ensure compliance with applicable regulations.

All excavation, grading, and/or demolition activities shall be suspended when average wind speeds

exceed 20 mph.

Wind breaks (e.g. trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have maximum 50 percent air porosity.

Vegetative ground cover (e.g. fast germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.`

The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time).

All trucks and equipment, including their tires, shall be washed off prior to leaving the site.

Site accesses to a distance of 100 feet from the paved road shall be treated with a six- to 12-inch compacted layer of wood chips, mulch, or gravel.

Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.

For Exhaust

The applicant/general contractor for the project shall demonstrate to the local jurisdiction that all off-road equipment greater than 25 hp that will be operating for more than 20 hours over the entire duration of the construction activities at the site, including equipment from subcontractors meets the following requirement:

1) Be Zero Emissions OR 2) have engines that meet for exceed either US EPA or ARB Tier 2 off-road emission standards; and 3) have engines are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS), if one is available for the equipment being used (equipment with engines meeting Tier 4 Interim or Tier 4 Final emission standards automatically meet this requirement, therefore a VDECS would not be required).

Idling time of diesel powered construction equipment, trucks and generators shall be limited to no more than 2 minutes. Clear signage shall be provided for construction workers at all access points.

All construction equipment shall be maintained and properly tuned in accordance with the manufacturers' specifications.

Portable diesel generators shall be prohibited. Grid power electricity should be used to provide power at construction sites; or propane and natural gas generators may be used when grid power electricity is not feasible.

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GLOSSARY

Bay Area Air Quality Management District (Air District)
A regional air pollution control agency with jurisdiction over the nine counties that surround the Bay (excepting northeastern Solano and northern Sonoma counties); the Air District oversees policies and adopts regulations for the control of air pollution from stationary sources.

Best Practices to Reduce Emissions
Measures that reduce actual emissions, and therefore reduce health risks from air pollution. The Air District recommends that local governments adopt best practices as community-wide policies or ordinances. See pg. 9 for a complete list of best practices to reduce emissions.

Best Practices to Reduce Exposure
Measures that do not reduce actual emissions, but reduce people's exposure to pollutants and therefore reduce health risks. Examples include air filters, vegetation, and alternative truck routes. The Air District recommends implementing these types of measures in areas with elevated health risks (purple areas on Air District maps). See pg. 10 for the map, and for a complete list of best practices to reduce exposure.

California Air Resources Board (ARB)
A state agency, whose mission is to promote and protect public health, welfare and ecological resources through the reduction of air pollutants; the ARB oversees policies and adopts regulations for the control of air pollution from primarily mobile sources.

Cumulative Impact
The impact on the environment and the public which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time

Fine Particulate Matter (PM)
Includes tiny particles with a diameter less than or equal to 2.5 microns. This fraction of particulate matter penetrates more deeply into the lungs than larger particles.

Further Study
Conducting further study would entail air quality modeling of fine PM concentrations, and/or estimating increased health risks from air toxics to determine if there is an unacceptable level of health risk, and to identify if measures can be implemented to reduce health risks to acceptable levels.

Mobile Sources of Air Pollution
Sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats and airplanes.

Sensitive Land uses

Places where sensitive populations are most likely to spend their time, such as schools, playgrounds, daycare centers, nursing homes, medical facilities, and residential communities.

Sensitive Populations

People, including infants, children, the elderly, and those with pre-existing conditions (such as asthma) that are at greater risk than the general population to the adverse health effects of air pollutants.

Stationary Sources of Air Pollution

Non-mobile sources such as power plants, refineries and manufacturing facilities which emit air pollutants.

Toxic Air Contaminants (TACs) or Air Toxics

TACs are air pollutants, identified by the ARB, which may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential health hazard. Health effects may occur at extremely low levels of TACs.

APPENDIX A: BEST PRACTICES TO REDUCE EMISSIONS OF LOCAL AIR POLLUTION

The Air District recommends that local government agencies adopt the following “best practices to reduce emissions” as enforceable ordinances or standard conditions of approval, and/or as community-wide policies. Implementing all of the “best practices to reduce emissions” will likely result in the greatest reduction in local levels of air pollutants. However, the Air District acknowledges that implementing all of the following “best practices to reduce emissions” may not be feasible or appropriate in every community.

The research regarding the availability and effectiveness of “best practices to reduce exposure” is continually evolving. Air District staff will update the recommended measures as new information becomes available.

RETROFIT GENERATORS (TO LOW OR ZERO EMISSIONS)

Many buildings in developed areas include back-up diesel generators to provide emergency power in the event of power failure. Even if such engines are not used for emergency purposes, they are still operated periodically for maintenance and testing. Diesel backup generators, specifically older ones, can have significant diesel particulate matter emissions. As part of its diesel risk reduction program, ARB adopted an air toxic control measure for stationary engines, or generators. The measure requires that new generators, including back-up generators and generators used in construction, be certified to meet emission standards set by ARB and US EPA (ARB and US EPA have identical emission standards for generators). ARB/US EPA emission standards apply to generators larger than 50 horse power and are set forth as Tiers 1 through 4, with Tier 4 engines being the cleanest. Generator engines certified as Tier 4 reduce PM emissions 85 to 90 percent over a non-tiered engine, whereas Tier 1 only reduces PM emissions by 25 percent. By 2015, all new generator engines must have met Tier 4 emission standards. But since these regulations apply only to new engines, older existing generators can continue contributing to local air pollution. Local governments can require, via a local ordinance, development agreement, or other means, that existing older generators not subject to ARB limits be replaced with a new low or zero emitting generator or be retrofitted with control technologies such as diesel particulate filters, resulting in significant reductions in diesel PM emissions. New, zero emission back-up power technologies are also becoming available, including fuel cell back-up power (example: Bloom Energy).

ELECTRIFY LOADING DOCKS

Heavy duty diesel trucks are the predominant means to deliver goods to grocery stores, shopping malls, and other commercial and retail land uses. Diesel trucks normally need to idle their main diesel engine during loading and unloading operations to operate mechanical lift equipment or to run the air conditioner or heater in the cab of the truck. This idling of the main diesel engine produces a substantial amount of diesel particulate matter emissions and can impact the health of nearby people. The particulate matter emissions can be reduced or eliminated by requiring the electrification of all loading docks. Trucks that are equipped to utilize grid power can significantly reduce their emissions. Installing electrical outlets at all loading docks and promoting or requiring only trucks capable of plugging-in to deliver goods will lead to localized reductions in diesel emissions, thereby decreasing the potential for health risks to those that live and work in the area.

LIMIT IDLING TIMES

Prohibiting trucks from idling for more than two minutes can reduce emissions by limiting the amount of time that trucks run their engines. Idling limits could apply to all types and sizes of trucks, and/or buses, that spend extended periods of time at idle when loading and unloading, staging or when not in active use. ARB regulations limit idling time to no more than five continuous minutes (for commercial motor vehicles with gross vehicular weight ratings of greater than 10,000 pounds). Local governments may, and often do, pass local ordinances that further limit allowable idling time to no more than two continuous minutes. In addition, local enforcement of ARB or local idling limits increases their effectiveness. Strict local limits on idling diesel engines, combined with local enforcement, can reduce local exposure to diesel exhaust.

ARB's idling regulation contains a number of exemptions that allow for longer idling periods when safety or power needs for equipment are required. Communities should consider if similar exemptions are appropriate when adopting a local ordinance on idling time limits.

ZERO EMISSION TECHNOLOGY & ALTERNATIVE FUELS

Zero emission (i.e. plug-in electric or hydrogen powered) vehicles have become more commonplace but will need the necessary infrastructure to continue to grow. Local governments can promote this infrastructure by requiring it at new or existing development (for example, required plug-in stations for electric vehicles). Diesel powered on-road and off-road equipment manufacturers are constantly developing new technologies and strategies to reduce diesel particulate matter emissions in order to comply with increasingly stringent ARB regulations. In addition, fuel providers are also developing lower emission and renewable fuels, such as biodiesel, to comply with ARB fuels regulations. Promoting the use of these new technologies and fuels within our communities, either through requirements or incentives, can reduce or eliminate the adverse health impacts from local sources of TACs and PM air pollution.

For example, truck manufacturers have begun offering diesel electric hybrids for all but the heaviest trucks. Gasoline hybrids are available for lighter weight trucks. The availability of propane and natural gas powered trucks is somewhat limited in terms of weight class and usage, although there are some well-established markets for natural and/or bio gas buses and garbage trucks. Trucks powered by battery or fuel cell hybrid electric are currently limited to demonstration projects, but when commercialized will present the lowest emission option.

PROMOTE OR REQUIRE THE USE OF TRANSPORTATION REFRIGERATION UNITS (TRU)

Trucks delivering goods often need to keep perishable items refrigerated or at a constant temperature. The use of Transportation Refrigeration Units (TRUs) in lieu of running the main engine on delivery trucks maintains refrigeration while minimizing diesel emissions. TRUs are refrigeration systems powered by diesel internal combustion engines designed to refrigerate perishable products that are transported in various containers, including semi-trailers, truck vans, shipping containers, and rail cars. Local policies or programs that promote the use of transportation refrigeration units, especially if they meet the federal Environmental Protection Agency's (US EPA) Tier 4 emission standards, can reduce emissions of diesel particulate matter and toxic air contaminants by 50 to 80 percent. It should be noted that while TRU engines are relatively small, ranging from 9 to 36 horsepower, significant numbers of these engines congregating at distribution centers, truck stops, and other facilities, could still result in the potential for adverse health risks to sensitive populations nearby.

TRANSPORTATION DEMAND MANAGEMENT (TDM) STRATEGIES

As previously mentioned in this guidebook, the Air District strongly supports local and regional efforts to reduce vehicle miles traveled and promote "focused growth", i.e. infill, transit-oriented, and mixed-use development throughout the region. Building such communities is critical to achieving reduced vehicle miles traveled, which will: reduce criteria pollutants, greenhouse gases, and toxic air contaminant and fine PM emissions from passenger vehicles, as well as assist the Bay Area in attaining and maintaining health-based ambient air quality standards. Focused growth strategies have the long-term benefit of improving overall air quality while also providing many other benefits to the Bay Area environment, including the preservation of natural land and open space, improved water quality, and protection of habitat and native wildlife species. Focused growth also provides important economic and equity benefits, including reduced traffic congestion and lower transportation costs, more housing options, and better access to jobs.

The Air District recommends requiring the implementation of as many TDM strategies as is feasible into projects and plans. Examples include, but are not limited to, parking pricing strategies; parking maximums; mandated parking spaces for car-sharing programs; the provision of transit passes in residential, commercial and office developments; charging stations for electric vehicles; bicycle lockers or racks; teleworking policies; bicycling improvements; and more. For a recommended list of TDM strategies, consult the Air District's TDM tool: http://www.baaqmd.gov/plans-and-climate/air-quality-plans/smart-growth.

TRAFFIC MANAGEMENT STRATEGIES

Studies demonstrate that managing how traffic flows is a strategy to reduce the amount of air pollution emitted from vehicles.

Traffic Smoothing

Reducing acceleration and deceleration can reduce fuel consumption and emissions. Creating a more constant traffic speed (i.e. traffic smoothing) can reduce emissions fairly significantly (up to ~50%, according to several studies). Strategies to smooth traffic include installing roundabouts at stop-controlled intersections.

Speed Limits

Driving speed is one of the most important factors that determine vehicle emissions, according to ARB. A study by El-Shawarby et al (2005) found that fuel consumption and emission rates are optimum in the range of 38-55 mph. Outside of this range, both fuel consumption and emission rates increase considerably.

APPENDIX B: BEST PRACTICES TO REDUCE EXPOSURE TO LOCAL AIR POLLUTION

The Air District recommends that local government agencies adopt the following "best practices to reduce exposure" as enforceable ordinances or standard conditions of approval, and/or as community-wide policies. Implementing all of the "best practices to reduce exposure" will likely result in the greatest reduction in potential health risks from air pollution. However, the Air District acknowledges that implementing all of the following "best practices to reduce exposure" may not be feasible or appropriate in every community. Of particular importance is the best practice related to air filtration, which is one of the most effective strategies to reduce exposure.

The research regarding the availability and effectiveness of "best practices to reduce exposure" is continually evolving. Air District staff will update the recommended measures as new information becomes available.

HEALTH PROTECTIVE DISTANCE

As stated, from an air quality standpoint, reducing vehicle miles travled (VMT) is crucial. Reducing VMT will reduce criteria pollutants, greenhouse gases, and toxic air contaminants. Cars and trucks represent the single largest source of greenhouse gas emissions in the Bay Area; reducing these transportation-related emissions through integrated land use and transportation planning and infill development is critical to achieving GHG reduction goals to stabilize the climate. Transportation is also a significant source of fine PM and TACs. Therefore, reducing VMT is a high priority for air quality and the climate. However, increased development in certain locations near major sources of air pollution may result in increased local exposure to unhealthy levels of air pollutants to the people living there unless steps are taken to reduce exposure and reduce emissions. This guidebook includes many strategies to reduce both emissions and exposure. One strategy for reducing exposure is to plan sensitive land uses farther from localized air pollution sources (such as freeways) as is feasible and appropriate. This is one of the most effective health protective strategies that can be implemented to protect children and other vulnerable populations from the harmful effects of air pollution. In general, as the distance from a local source of air pollution increases, the level of air pollution and associated health risk decreases.

A means to implement or consider proximity to air pollution sources is zoning. For example, when updating or making revisions to a zoning code in an area characterized by elevated levels of air pollution (such as immediately adjacent to a freeway), local government may choose to designate the land use as commercial, office, or parking instead of residential, if that is feasible or appropriate given the context. The Air District aknowledges that local land use decisions are complicated and many factors need to be considered and balanced. The Air District simply encourages local governments to consider air quality along with other public health elements when making land use decisions.

The Air District recognizes that in dense urban communities, implementing a health protective distance between sensitive land uses and sources of air pollution may not always be feasible. If it is not possible to implement health protective distances, then the additional best practices to reduce exposure to local air pollution will help to reduce health risks, if fully implemented.

AIR FILTERS

Because many people spend a majority of their time indoors, reducing the entry of air pollutants into a home (or school, daycare, etc.) is a viable option to mitigate the adverse health impacts related to air pollutant exposures, particularly fine PM. Heating, ventilating, and air conditioning (HVAC) systems control the air flow in buildings by circulating outside air through, and eventually out of a building. The use of high efficiency filtration in central HVAC systems and in portable air cleaners has been shown to be effective in most circumstances. Depending on the particle size, high efficiency filters can remove 50% - 98% of particles in the air, and portable air cleaners (designed for homes without a central HVAC) can remove 30% to 90% of particles.

The American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) uses a Minimum Efficiency Reporting Value (MERV) measurement scale to rate the effectiveness of air filters on a scale of 1 to 16. For example, MERV-13 air filtration devices installed on an HVAC air intake system can remove 80-90% of indoor particulate matter (greater than 0.3 microns in diameter). High Efficiency Particle Filters, or HEPA filters, are effective at removing mold, pollen and ultrafine particles. HEPA filters have a particle size removal efficiency of > 99.999% for particles 0.3 - 1 micron in diameter which is roughly equivalent to a MERV 20 rating (US EPA, Residential Air Cleaners August 2009). However, only a few HEPA filters are designed for use in residential applications.

Studies conducted in California (Bhangar et al 2011, Less et al., 2015) have shown that particulate levels in homes with high efficiency filtration systems were 50% to 74% lower than those without filtration systems. Modeling simulations (Brown et al 2014) showed similar findings. The effectiveness of air filters in reducing health risks depends heavily on properly sealed ducting and maintenance. Higher MERV rated filters also require increased air pressure, which requires more energy use and can cause ducts to fail if not properly installed and sealed. However, while air filtration systems do result in additional energy use, a well-sealed building envelope will help reduce energy use and will also increase the effectiveness of air filtration. An ongoing maintenance plan for a building’s HVAC air filtration system should therefore be included in any air filtration best practice adopted by a local government. For additional information on air filters, see the U.S. EPA’s document, “Residential Air Cleaners: A Summary of Available Information August 2009”.

HVAC filtration is an effective and feasible air quality mitigation strategy. It is becoming increasingly common in Bay Area jurisdictions. For example, San Francisco requires MERV 13 air filters in new residential buildings located within designated “air pollutant exposure zones” (locations where toxic risk or fine PM levels exceed designated thresholds).

The Air District recommends requiring the installation and implementation of an air filtration system in sensitive land uses (minimum of MERV 13) along with a maintenance plan detailing how the filtration system will be maintained.

PROJECT PHASING

In 2008, the California Air Resources Board adopted the On-Road Heavy Duty Diesel Vehicle (in use) regulation to dramatically reduce diesel particulate matter emissions from trucks and buses. The regulation requires owners of diesel trucks to retrofit or replace their engines so that by 2016, nearly all trucks would have diesel particulate matter emissions equal to a 2010 or newer model year engine. The regulation went into effect in 2012, and will result in significant reductions in diesel particulate matter emissions from on-road diesel trucks and buses as truck and bus owners comply with the regulation. ARB estimates there should be up to an 80 percent reduction in diesel particulate matter by 2023 from on-road trucks and buses. Accordingly, it is expected that the geographic scope of areas with unhealthy levels of diesel exhaust will decrease in future years as this truck and bus fleet becomes cleaner.

The ARB regulation makes project phasing an effective strategy for reducing people's exposure to fine PM and TAC emissions when the project or plan area is impacted from a source of emissions that includes on-road trucks and buses, such as a freeway or distribution center. When it is feasible to do so, such as on a relatively large project site, buildings that will be closest to the source of diesel particulate matter from on-road trucks or buses could be built last, so that air pollution from nearby highways or roadways will have time to decline based on the turnover of older diesel trucks and buses resulting from the ARB regulation. Phasing development near highways and major roadways can reduce exposure to fine PM concentrations and TACs.

BUILDING AND SITE DESIGN

Designing residential buildings and sites to locate people away from emission sources is an effective way to protect people's health.

Building Design

Building design can be an important factor in reducing exposure to PM and TACs by improving indoor air quality, especially when considering the location of the air intake for building ventilation. Generally, air pollution decreases with distance and with height, therefore air intake locations should be located as far as is feasible away from emission sources to provide the cleanest air to building occupants.

Other beneficial design features may further improve indoor air quality. Operable windows and balconies could be installed away from high volume roadways or other sources of air pollution, if feasible. For example, if local sources of air pollution are located on the west of the building, operable windows and balconies could be installed on the east side of the building (if feasible) where the concentrations of fine PM and TACs are likely to be lower.

Site Design

When designing a plan or project that includes sensitive land uses near local sources of fine PM and TACs, buildings within the development that do not house people, such as parking garages, commercial buildings or open space, could be located closest to the local source of emissions (such as a freeway), and act as a barrier between the pollution source and residential or other sensitive land uses. Also, implementing open space such as parks (that do not have recreational amenities such as basketball or tennis courts, soccer fields, playgrounds, etc.) between buildings can improve air flow and air pollution movement. This strategy can help to reduce build up of air pollution, or air pollution “hot spots”.

SOLID BARRIERS

Consider incorporating solid barriers, similar to sound walls, between buildings and sources of air pollution. Studies have demonstrated that barriers can reduce air pollutant levels, while also reducing noise (co-benefit). Recent research indicates that sound walls, in conjunction with vegetation (see below) is more effective than either strategy implemented on it’s own to reduce air pollutant levels.

VEGETATION

Planting certain trees can be an effective strategy for reducing exposure to air pollution. Some trees and vegetation type may trap and filter coarse and fine particulates in the leaves, stems, and twigs. Trapped particles are eventually washed to the ground by rainfall. Trees also lower the air temperature by providing shade over streets and parking lots, thereby reducing evaporative emissions from vehicles and energy consumed on air conditioning during summer months.

The effectiveness of fine PM removal depends on the tree species planted. Large, evergreen trees (those with foliage year-round) with long-life spans are best. In addition, trees with branches and leaves that have a sticky surface are best at trapping fine PM. Trees with a fine, complex foliage structure that allows significant in-canopy airflow will also perform better at trapping particulate matter. Pines, Cypress, Hybrid Popular, and Redwoods are an example of trees that do well in trapping pollution.

In addition to the type of tree, the placement of the trees, relative to major roadways or other diesel emission sources, and how densely they are planted, are important considerations in using trees as a strategy to reduce air pollution exposure. Trees should be planted between land uses and the source of emissions, and as densely as feasible, while still maintaining the health of the trees. Additionally, some trees emit volatile organic compounds (VOCs) which can lead to the formation of ozone. Care should be taken that trees planted with the intent to reduce fine PM do not also emit high levels of VOCs.

Research is continuing to determine and quantify the effectiveness of planting of trees near a source of particulate matter in reducing exposure.

The Urban Forest Ecosystems Institute at California Polytechnic University, San Luis Obispo (which partners with CalFire, the U.S. Forest Service and PG&E) maintains SelecTree, a tree selection tool designed to help users select appropriate trees based on a number of considerations, including leaf and flower characteristics, site conditions and constraints (such as soil conditions, soil pH, seaside exposure, etc.), pest and disease information, health and safety concerns (non-native CA species, fire resistance, biogenic emissions, root damage potential, etc.) and special values (attracts wildlife). The Air District encourages the ues of this tool to assist in making comprehensive decisions on tree selection while also taking into consideration a tree's biogenic emissions.

In addition, the Air District may undertake a guidance document on trees, which will include recommendations on the types of tress that are preferred for air quality (biogenic emissions), exposure reduction, and climate protection/carbon sequestration, while also considering other factors including water quality, pest management, pollen reduction, aesthetics and more.

LIMIT GROUND FLOOR USES

Placing residential development on the second floor of a building or higher can be an effective strategy for reducing exposure to local pollutants from a nearby at-grade highway or busy roadway. This strategy is often applied to mixed use buildings on infill sites, where the ground floor is reserved for commercial space and the second and subsequent floors are used for residential. Limiting ground floor residential development is generally most effective when the adjacent roadway is not elevated.

ALTERNATIVE TRUCK ROUTES

Truck routes can be planned or re-routed through non-residential neighborhoods, and to avoid other sensitive land uses such as daycare centers, schools, and elderly facilities. For example, the City of Oakland recently worked with community groups to re-route trucks away from residential streets around the Oakland Coliseum to address local concern about air pollution levels.

APPENDIX C
TECHNICAL NOTES

The mapping tool created by the Air District include blue and purple areas (located: www.baaqmd.gov/planninghealthyplaces).

The blue areas represent "large and/or complex" sources where further study is recommended. The Air District relied on ARB's document entitled, "2005 Air Quality Land Use Handbook: A Community Health Perspective" (ARB Land Use Handbook) to define "large and/or complex" sources, and their associated further study areas. The further study areas are defined below:

- 0.5 miles around all major airports, including OAK, SFO, SJC;
- 0.5 miles around all oil refineries;
- 0.5 miles around the Port of Oakland; 1,000 feet around all other seaports;
- 1,000 feet around railyards (except Caltrain yards in San Jose & San Francisco - these are included in AQ modeling in purple areas)
- 150 feet around medium gas stations (based on Air District emissions data); and
- 300 feet around large gas stations (based on Air District emissions data).

The purple areas on the maps are based on a screening level, cumulative analysis of all mobile and stationary sources of air pollution in the region. To create the purple areas, the Air District identified areas that exceed 100 in a million for cancer risk, and/or exceed fine PM concentrations of 0.8 micrograms per cubic meter, and/or are within 500 feet of a freeway, 175 feet of a major roadway (>30k AADT), or 500 feet of a ferry terminal. Implementation of best practices to reduce emissions and exposure will reduce the health risks; however, the emissions and exposures will not be completely eliminated.

The Air District will be releasing a document that will provide greater detail on the methodology used to model the estimated levels of air pollutants and health risks on a cumulative basis throughout the region. This document will be available at: www.baaqmd.gov/planninghealthyplaces upon completion (est. late spring / early summer 2016).

From: [redacted]
[redacted]
Subject: Dec 5 AGENDA COMMENTS - FW: Environmental Impact Report for the Fresno South Central Specific Plan (SCH # 2019079022)
Date: Wednesday, December 4, 2024 11:36:42 AM
Attachments: Outlook-cbd.circle
12.04 fresno south central specific plan comments .pdf

Additional Comments to send out for the Dec 5 agenda.

If you can't figure out which item it belongs to, please let me know.

Todd Stermer, CMC
City Clerk
559-621-7650

From: Jennifer Clark [redacted]
Sent: Wednesday, December 4, 2024 8:10 AM
To: Todd Stermer [redacted]
Cc: Kristi Costa [redacted]; Sophia Pagoulatos [redacted]
Ashley Atkinson [redacted] Michelle Zumwalt [redacted]
Subject: FW: Environmental Impact Report for the Fresno South Central Specific Plan (SCH # 2019079022)

Todd,

See additional comments for the record.

Thanks.

From: Frances Tinney [redacted]
Sent: Wednesday, December 4, 2024 8:07 AM
To: Jennifer Clark [redacted]>; Sophia Pagoulatos
[redacted]; Michelle Zumwalt [redacted]>
Cc: John Buse [redacted]>; Sofia Prado-Irwin
[redacted]>
Subject: Environmental Impact Report for the Fresno South Central Specific Plan (SCH # 2019079022)

External Email: Use caution with links and attachments

Good morning,

Please find attached the Center for Biological Diversity's comments on the EIR for the Fresno South Central Specific Plan.

The references are available at this link:

Fresno SCSP References

Please confirm receipt of the letters and references.

Thank you,

Frances

Frances Tinney

Attorney

Urban Wildlands Program

CENTER *for* BIOLOGICAL DIVERSITY

[redacted]

[redacted]

December 4, 2024

Sent via email

Jennifer Clark, Director
Planning and Development Department
c/o Sophia Pagoulatos, Planning Manager
Planning and Development Department
2600 Fresno Street, Room 3065
Fresno, CA 93721
[redacted]

Re: Environmental Impact Report for the Fresno South Central Specific Plan (SCH # 2019079022)

Dear Ms. Clark:

These comments are submitted on behalf of the Center for Biological Diversity (the "Center") regarding the Fresno South Central Specific Plan (the "Project"). The Center has reviewed the Environmental Impact Report ("EIR") closely and is concerned about the harm the Project will do to an Environmental Justice Community, the Project's inadequate analysis of water supply and water quality impacts, its serious and unmitigated impacts to biological resources, and the unacceptable impacts to air quality for residents who already breathe some of the worst air in the country. The Center urges the City of Fresno to revise the EIR to disclose and analyze these impacts, and mitigate accordingly.

The Center is a non-profit, public interest environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 1.7 million members and online activists throughout California and the United States. The Center has worked for many years to protect imperiled plants and wildlife, open space, air and water quality, and overall quality of life for people in Fresno County.

As an initial matter, in August of this year the Fifth Appellate Court of Appeal issued an order invalidating the General Plan Amendment and accompanying Programmatic Environmental Impact Report that the City of Fresno enacted in 2021. The court instructed the City to correct CEQA violations in those documents. The City has not yet complied. The City now attempts to enact a specific plan. But specific plans implement the general plan. Because specific plans must be consistent with General Plans and cannot be adopted until a General Plan is adopted, the City should not proceed with a specific plan until it has a correctly amended General Plan in place, along with a EIR that complies with CEQA. (Gov. Code § 65450.)

I. THE DEIR FAILS TO ADEQUATELY CONSIDER THE PROJECT'S SIGNIFICANT ENVIRONMENTAL JUSTICE IMPACTS.

The EIR fails to analyze or mitigate the ways in which the Project's significant and unavoidable impacts will contribute to the area's status as an environmentally burdened community. The Project will bring more industrial pollution to a community with more poverty, higher unemployment, and less formal education than 90% of California. (CalEnviroScreen 2022.) The neighborhood has some of the dirtiest air in the state, and in fact, the country. (*Ibid*., ALA 2024.) The residents suffer rates of asthma in the 97rd percentile. (CalEnviroScreen 2022.) Needless to say, the Project will be within an Environmental Justice Community boundary. (DEIR at 4.3-28.) Seventy-four percent of the residents are Latine, 20% are Black, and only 2.5% are white. (CalEnviroScreen 2022) Studies in California consistently show that decisionmakers are significantly more likely to site warehouses in neighborhoods where a higher percentage of the residents are not white. This pattern forces people of color to bear a disproportionate share of the health and safety burdens that come with toxic land uses, in a textbook example of environmental racism. (Martinez, 2021; Commission for Racial Justice, 1987 [landmark study in the development of the environmental justice framework])

The State of California has responded to the moral urgency of alleviating unfair environmental burdens by codifying environmental justice principles in statute. California law now calls on officials to "eliminat[e] pollution burdens for populations and communities experiencing the adverse effects of that pollution, so that the effects of the pollution are not disproportionately borne by those populations and communities." (Pub. Res. Code § 30107.3(b)(2); § 71111.) The Attorney General has pointed out that this responsibility extends to local governments through the CEQA process, which "require[s] that local lead agencies consider how the environmental and public health burdens of a project might specially affect certain communities." (AGO, 2012. See CEQA Guidelines, §§ 15064(e), 15131(a), 15131(b), 15382.) Yet this EIR ignores a community-led alternative to instead add more pollution to one of the most burdened areas in the state. It does this without even admitting the unequal effects of the environmental injustice it will perpetrate.

The mandate to consider environmental justice requires the City to adopt the Community Plan Alternative. That alternative reduces industrial uses in the plan area to increase quality of life for residents, and it was developed through a community outreach and engagement process. (DEIR at 6-7.) Inexplicably, the City fails to even fully consider this alternative. (DEIR at 6-6-7.) The City claims that because the Community Plan Alternative was developed through community participation instead of "developed for the purposes of CEQA, that is, to reduce the potential for significant environmental effects" it is not a CEQA alternative and therefore not fully analyzed. (DEIR at 6-7.) The explanation has no basis in law or fact. There is no requirement that CEQA alternatives be developed in any particular way. In fact, public participation is a primary goal of CEQA and the Attorney General encourages lead agencies to work with affected communities to develop CEQA alternatives. (Cal. Code Regs., tit. 14, § 15201; AGO 2012.) Asking the community to participate in designing an alternative just to dismiss that alternative precisely because it was designed by the community is surprising, to say the least. Further, the City's claim that developing an alternative to reduce environmental impacts is somehow at odds with developing an alternative in response to community concerns is simply wrong. The community's concerns include air quality, traffic, health risks, and general plan consistency to protect sensitive receptors. These are environmental impacts.

And so, although the Community Plan alternative might not have been developed for the purpose of reducing environmental impacts, it would in fact reduce them. High-intensity industrial land uses drive this Project's significant air quality, traffic, land use and greenhouse gas impacts. Replacing those land uses with office and retail uses will reduce the Project's significant impacts. By failing to even fully analyze the Community Plan alternative, the EIR fails to meet CEQA's requirement to study alternatives and the City fails to meet its responsibility to advance environmental justice. (Pub. Res. Code § 21002; CEQA Guidelines §§ 15002(a)(3), 15021(a)(2), 15126(d).)

II. THE EIR LACKS AN ADEQUATE ANALYSIS OF AND MITIGATION FOR THE PROJECT'S IMPACTS TO BIOLOGICAL RESOURCES.

The EIR fails to adequately describe and analyze the Project's impacts to special-status species in and near the Plan area. The EIR also fails to mitigate the Project's significant impacts to local and regional wildlife connectivity.

A. The EIR Improperly Omits Analysis of Special-Status Crustaceans

Information provided in the EIR is inadequate to establish a reliable baseline of existing environmental conditions present at the Project site. Under CEQA, an environmental review document must evaluate the potential environmental impacts of the project as compared to the existing environmental conditions (the "baseline"), so that the Project's impacts can be meaningfully analyzed and compared to alternatives. (CEQA Guidelines § 15125(a); see *County of Amador v. El Dorado County Water Agency* (1999) 76 Cal.App.4th 931, 952; *Neighbors for Smart Rail v. LA County Metropolitan Transit Authority* (2013) 57 Cal.4th 310, 315.) The evidence provided in the EIR's analysis of impacts to biological resources does not meet this standard.

The EIR claims that two special-status crustaceans, vernal pool fairy shrimp and vernal pool tadpole shrimp, are not expected to occur because the Plan Area "does not support vernal pool or wetland habitat suitable for this species." However, the EIR also states that "Some agricultural parcels in the Plan Area contain mapped freshwater emergent wetlands and freshwater ponds, all of which are documented in the National Wetlands Inventory as excavated or human-created (USFWS 2019)…Based on spatial and field reconnaissance data, the areas mapped as freshwater emergent wetland and ponds in the Plan Area are artificial or altered seasonally filled wet depressions, which may serve as industrial or agricultural effluent ponds or flood control." (DEIR at 4.4-5, 4.4-6). A noted in the Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon, "Vernal pool tadpole shrimp occur in a wide variety of ephemeral wetland habitats (Helm 1998). The species has been collected in vernal pools ranging from 2 to 356,253 square meters (6.5 square feet to 88 acres) in surface area (Helm 1998)… Vernal pool tadpole shrimp have been found in pools with water temperatures ranging from 10 degrees Celsius (50 degrees Fahrenheit) to 29 degrees Celsius (84 degrees Fahrenheit) and pH ranging from 6.2 to 8.5 (Syrdahl 1993, King 1996)" (U.S. Fish and Wildlife Service, 2005). The vernal pool fairy shrimp can also be found in a wide variety of ephemeral freshwater habitats, "including extremely small or marginal ones that fill with water for just long enough to allow the individuals to complete their lifecycle" (US Fish and Wildlife Service, 2024). Importantly, even though these wetlands may be isolated from other intact habitat, dispersal to isolated water bodies can occur via waterfowl, livestock, and humans (US Fish and Wildlife Service, 2024). Based on the information provided in the EIR, the wetlands present in the project area may in fact be suitable for vernal pool shrimp. The EIR must conduct protocol surveys as described in the Survey Guidelines for the Listed Large Branchiopods (US Fish and Wildlife Service, 2017) to determine whether these two species are indeed present in the Plan Area. If evidence of vernal pool fairy shrimp or vernal pool tadpole shrimp is found, the Applicant must fully mitigate impacts to the species.

B. The EIR Fails to Adequately Analyze and Mitigate the Project's Impacts to Birds that Occupy Agricultural Lands

The intensification of agriculture throughout the United States has led to severe declines in farmland and grassland birds (Stanton et al., 2018). Despite this, some species—including numerous sensitive and special-status birds—are able to use agricultural lands as nesting and/or foraging habitat (Iglay et al., 2017). For example, white-faced ibis, long-billed curlew, and Swainson's hawk all depend to various extends on alfalfa fields for wintering, breeding, and foraging habitat respectively (Hartman & Kyle, 2010). Extremely large colonies of tricolored blackbird colonies exploit triticale crops in the San Joaquin Valley Swainson's hawk, and alfalfa, rice paddies, and irrigated pasture provide foraging habitat (Graves et al., 2013; Wilsey et al., 2019). While species richness is lower in agricultural landscapes than intact native habitats, diverse bird communities can still exist in orchards and vineyards. For example, a study of bird community composition across different types of orchards and vineyards in Australia observed 56 species in almond orchards and 48 in vineyards (Luck et al., 2015). As noted in the DEIR, orchards and vineyards make up the majority of the agricultural landscape of the Plan Area (DEIR at 4.4-5), and destruction of these landscapes may have significant impacts on native birds.

As stated in the DEIR, "approximately 1,874 acres [of the Plan Area] is open space, farmland, and vacant. Approximately 700 acres of the Plan Area is conservatively assumed to be developed with non-residential uses, primarily industrial, by the year 2040. While it is not possible to identify where future development would occur, it is reasonable to assume that—in addition to some redevelopment—open space, farmland and vacant areas would be developed." (DEIR at 3-15). The EIR also acknowledges that Swainson's hawk and tricolored blackbird may occur in the Plan Area. The EIR fails to acknowledge that yellow-headed blackbirds, a California species of special concern which also regularly forage in agricultural areas, may also be present in the Plan Area.[1] If these species (or any other native birds) are present, it is likely that they are using agricultural landscapes for foraging, wintering, and potentially nesting habitat. Conversion of agricultural land to other land uses is therefore extremely likely to impact these species, yet the EIR failed to acknowledge this and failed to provide any analysis on the impacts of agricultural land loss to these species whatsoever. The EIR therefore fails to sufficiently analyze and mitigate its impacts in violation of CEQA.

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[1] A search of the California Natural Diversity Database (CNDDB) QuickView "Species in 9 Quads" tool centered on the Fresno South quad conducted on 15 Nov 2024 indicates yellow-headed blackbird are present in the region and could be present in the Plan Area.

C. The EIR Fails to Adequately Analyze and Mitigate the Project's Impacts to Wildlife Movement and Habitat Connectivity.

Habitat connectivity is vital for wildlife movement and biodiversity conservation. Limiting movement and dispersal with barriers (e.g., development, roads, or fenced-off croplands) can affect animals' behavior, movement patterns, reproductive success, and physiological state, which can lead to significant impacts on individual wildlife, populations, communities, and landscapes (Ceia-Hasse et al., 2018; Cushman, 2006; Haddad et al., 2015; Trombulak & Frissell, 2000; Van Der Ree et al., 2011). Individuals can die off, populations can become isolated, sensitive species can become locally extinct, and important ecological processes like plant pollination and nutrient cycling can be lost. In addition, connectivity between high quality habitat areas in heterogeneous landscapes is important to allow for range shifts and species migrations as climate changes (Cushman et al., 2013; Heller & Zavaleta, 2009). Lack of wildlife connectivity results in decreased biodiversity and degraded ecosystems.

The EIR does not adequately analyze the Project's impacts to wildlife movement and connectivity. We acknowledge that the DEIR is correct in stating "According to the California Essential Habitat Connectivity Project, the Plan Area is not located within a Natural Landscape Block or Essential Habitat Connectivity area (Spencer et al. 2010). (DEIR at 4.4-27). However, the DEIR goes on to claim that "Urban and agricultural land use areas generally do not provide quality habitat for wildlife migration, as they lack vegetation which wildlife may use for refuge and foraging… Future development under the proposed plan in urban and agricultural land areas would not interfere substantially with the movement of any native resident or migratory wildlife species because the Plan Area does not currently provide an important connection between any areas of natural habitat that would otherwise be isolated." This claim is incorrect. While the agricultural lands in the Plan Area may not be prime habitat for many species, that does not mean that species do not regularly occupy and/or pass through them. In fact, numerous wildlife species—especially birds, as noted above—use agricultural areas as permanent and migratory habitat. Second, increased traffic, edge effects, and new construction resulting from the proposed Project would impact any species that are present in these agricultural areas.

Edge effects include increased noise, light, and human presence that can disrupt wildlife outside of the Project footprint. Edge effects of development can impact key wide-ranging predators, such as mountain lions, bobcats, and American badgers (Crooks, 2002; Delaney et al., 2010; Lee et al., 2012; Riley et al., 2006; Smith et al., 2015, 2017; Vickers et al., 2015; Wang et al., 2017), as well as smaller species with smaller home ranges, such as song birds, bats and other small mammals, and herpetofauna (Benítez-López et al., 2010; Bunkley & Barber, 2015; Cushman, 2006; Delaney et al., 2010; Gray, 2017; Kociolek et al., 2011; McClure et al., 2013; Slabbekoorn & Ripmeester, 2008; Ware et al., 2015). Limiting movement and dispersal can affect species' ability to find food, shelter, mates, and refugia after disturbances like fires or floods. Individuals can die off, populations can become isolated, sensitive species can become locally extinct, and important ecological processes like plant pollination and nutrient cycling can be lost. The proposed Project would result in habitat loss and edge effects due to increased human presence and activities that will degrade agricultural areas. Additionally, the increased traffic, noise, and activity on roads serving the Project that would result from Project operations would hinder wildlife movement, impairing local connectivity. The EIR fails to adequately disclose, assess, and mitigate the Project's impacts to wildlife connectivity and therefore fails to comply with CEQA.

Development of new buildings in open spaces (including agricultural areas) can also significantly impair movement of many wildlife species. Light pollution affects many nocturnal species, including bats, birds, insects, and terrestrial mammals, among others. Impacts of light pollution are varied, and different species respond to artificial light at night in different ways. Individual impacts of light pollution include numerous physiological (e.g. hormone levels) and behavioral changes (e.g. shifts in activity patterns) that can impact an animal's ability to survive and thrive in their environment (Aulsebrook et al., 2020; Dominoni, 2015; Gaston et al., 2014; Kempenaers et al., 2010). These individual impacts cascade into ecological changes like phenological mismatches and shifts in predation patterns that can disrupt population and ecosystem-level dynamics, including mortality, fecundity, and community productivity, among others (Ditmer et al., 2021; Gaston et al., 2013; Sanders et al., 2020). Light pollution was only considered in the context of aesthetics in the DEIR (at 4.1-12), and its impacts to wildlife were not analyzed or mitigated. This must be remedied through a full analysis.

Collisions with buildings are one of the primary sources of mortality for birds (Basilio et al., 2020; Klem, 2009). Recent studies have shown that birds are experiencing significant declines, with estimates indicating losses of up to three billion birds in the past half-century (Rosenberg et al., 2019). This potential impact must be analyzed and mitigation for the proposed Project. Mitigation must include the implementation of bird collision reductions measures to preventing further decline of our avian biodiversity.

The EIR erroneously concludes that Project impacts to wildlife movement would be less than significant and fails to adequately assess and mitigate impacts to wildlife connectivity.

I. The DEIR fails to accurately analyze and mitigate the GHG impact of destroying habitat and converting agricultural land.

CEQA requires a thorough disclosure and analysis of a project's impact on climate change. (*See Communities for a Better Env't v. City of Richmond* (2010) 184 Cal.App.4th 70, 89-91). In order to meet CEQA's requirement for adequate analysis, an EIR must disclose all potential sources of a GHG emission resulting from the project. Lead agencies are required to quantify and disclose GHG emissions that would occur during construction, and the South Coast Air Quality Management District requires construction GHG emissions to be amortized over the life of the project, defined as 30 years. Yet the DEIR fails to comply with these requirements. When describing the emissions sources during construction activities, the DEIR only lists emissions from "the use of heavy-duty off-road equipment, materials transport, and worker commute trips." (DEIR at 4.8-12). The DEIR fails to account for carbon emissions from intact habitats or agricultural landscapes that would be dug up and paved over during construction as well as the annual loss of carbon that existing open space would have continued to sequester for 30 years if the Project were not constructed.

As detailed in a 2023 Center Report, "Hidden in Plain Sight: California's Native Habitats are Valuable Carbon Sinks" (Yap et al., 2023), non-forest arid and semi-arid habitats, like the annual grasslands in the Project area, can store significant amounts of carbon by keeping it from being released and sequester it by removing it from the atmosphere. Agricultural lands also sequester carbon (Kroodsma & Field, 2006). Carbon cycling in agricultural landscapes can vary greatly depending on crop species and agricultural practices, and some agricultural lands can act as carbon sources themselves (Ceschia et al., 2010). However, numerous crop types—including orchards and vineyards, which make up the majority of the agricultural landscape of the Plan

Area (DEIR at 4.4-5)—are able to sequester carbon, and act as carbon sinks (Kroodsma & Field, 2006; Scandellari et al., 2016).

Given the increased urgency in combatting climate change and new knowledge that California is currently not on track to meet its GHG reduction targets, it is important to accurately quantify and mitigate for loss of carbon storage and sequestration potential. However, the EIR fails entirely to consider the impact of conversion of native habitats, open space and agricultural landscapes and the loss of carbon sequestration capacity of these landscapes on GHG emissions. As stated in the DEIR, "approximately 1,874 acres [of the Plan Area] is open space, farmland, and vacant. Approximately 700 acres of the Plan Area is conservatively assumed to be developed with non-residential uses, primarily industrial, by the year 2040. While it is not possible to identify where future development would occur, it is reasonable to assume that—in addition to some redevelopment—open space, farmland and vacant areas would be developed." (DEIR at 3-15). This is an egregious oversight, as the conversion of 700+ acres of open space to industrial, commercial, residential, or uses necessitates the removal of 700+ acres of vegetation that is potentially—and depending on the habitat (e.g. native grassland), certainly—sequestering carbon. This exclusion is particularly inexcusable because CalEEMod Version 2022.1, upon which the EIR relies, has the modelling capabilities to calculate the loss of carbon from changes in land use and the associated loss of vegetation (CAPCOA, 2022). The modelling also provides detailed inputs for calculating GHG emissions from land use changes and vegetation loss. While the EIR uses CalEEMod 2022.1 to model the Project's GHG emissions from construction and operations (DEIR at 4.8-10), the EIR fails to perform any of the available analyses of land use change and sequestration (DEIR, App. B., 24/31).

The failure to account for emissions resulting from land conversion and loss of sequestration ability of existing vegetation leads to an inaccurate estimation of total Project emissions. The omission of any sequestration analysis is particularly concerning, as the loss of sequestration ability of existing landscapes will lead to a continued increased net emissions into the future. The DEIR states that "the analysis presented herein quantifies GHG emissions resulting from anticipated development under the plan through the planning horizon of 2040, and describes, calculates, and estimates those emissions." However, because the EIR performs no analysis of carbon sequestration whatsoever, the document fails to account for the annual loss of carbon that existing habitats would have continued to sequester for 30 years if the Project were not constructed. The EIR therefore fails to meet this requirement.

Because the EIR does not account for either carbon emissions resulting from land use conversion, which could be substantial in the proposed Plan, nor the loss of carbon sequestration capacity that will result from such land use conversion, the estimate of total emissions is inaccurate, and the true levels of GHG emissions resulting from the proposed Plan are likely to be higher than stated in the EIR. A supplemental EIR must disclose the carbon emissions associated with the loss of currently stored carbon as well as the loss of future carbon that would have been sequestered by these habitats over the Project lifetime.

CEQA requires the adequate assessment and mitigation of a project's impacts. Destroying native habitats, agricultural landscapes, and open space could release significant amounts of carbon that must be accounted for. An EIR must disclose and "give the public and decision makers the most accurate and understandable picture practically possible of the project's likely near-term and long-term impacts." (Guidelines § 15125(a).) By failing to disclose the carbon emissions associated with the loss of currently stored carbon as well as the loss of future carbon that would have been sequestered by these habitats over the Project lifetime the FEIR fails as an informational document.

II. THE EIR'S ANALYSIS AND MITIGATION OF WATER SUPPLY IMPACTS IS INADEQUATE.

The regional aquifer that would supply the Project is in a state of critical overdraft, and the surface water supplies are unable to meet the Project Area's current needs in dry years. (DEIR at 4.16-9, 10.) This EIR violates CEQA as it fails to adequately analyze the Project's impacts on water supply, which precludes its ability to serve as an informational document. (*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 711-712.)

a. The DEIR Must Consider Climate Change in Its Analysis of Water Supply Impacts.

The EIR fails to discuss the reality of climate change and its effects on water supply. As climate change progresses, California will likely experience more frequent drought conditions similar to those in 2012-2016. (Bedsworth 2018.) The only time the EIR considers drought conditions and how water supply will be affected is in its "Emergency Water Supply Conditions" discussion. (DEIR at 4.16-12.) Without integrating climate change's impacts throughout the discussion of water supply, the "Emergency Water Supply Conditions" section is realistically the only part of the water supply discussion that reflects the reality of water resources in the face of climate change.

The failure to properly consider climate change throughout the EIR's discussion of water supply has led to unrealistic conclusions regarding the sufficiency of water supply for the Project. The City of Fresno must reevaluate its determinations of water supply sufficiency and impacts within the context of climate change, and if necessary, implement mitigation measures. (*Los Angeles Unified Sch. Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1029.)

According to the EIR, switching from the General Plan to the Specific Plan would amount to a 6% decrease in water demand. (EIR at 4.16-3.) Even if the EIR is correct in its analysis of water demand, that does not mean that the Project Area will have sufficient water supply as climate change progreses, as it is estimated that some areas of the Central Valley will face a reduction of up to 40% in surface and subsurface flows. (Hanson 2012.)

i. The EIR's Conclusions Regarding the Sufficiency of Future Surface Water and Groundwater Supplies Ignore the Impacts of Climate Change

1. The EIR must engage with modern climate science

Fresno must consider the best available science on environmental impacts. (*Wild Fish Conservancy v. Irving* (2016) 221 F.Supp.3d 1224, 1234.) Agencies are only able to discount information on climate change when it is either inconclusive or the impacts are too speculative. (*County of Butte v. Department of Water Resources* (2023) 90 Cal.App.5th 147, 169.) That is not the case here. California is facing unprecedented challenges in its effort to allocate and conserve limited water resources, especially as water supply dwindles in the face of climate change and population growth. Studies predict that in the next 35 to 60 years, if emissions of carbon dioxide and other greenhouse gases continue unchecked, the American West's snowpack will continuously shrink, disappearing for a decade or more at a time. (Siirila-Woodburn 2021.) Groundwater reserves in the Central Valley have been declining over the past decades, and without proper mitigation, that decline will continue at an accelerated rate due to climate change. (Alam 2019.) Consequently, a recent Executive Order from Governor Newsom declared that California must "redouble near-, medium-, and long-term efforts to adapt its water management to a changing climate, shifting precipitation patterns, and water scarcity." (Executive Order N-7-22 (2022).)

Fresno must engage in a meaningful analysis of climate change's effects on water resources that is in step with evolving scientific knowledge and state regulatory schemes, and include that analysis in its discussion of water supply for the Project. (*Natural Resources Defense Council v. Kempthorne* (2007) 506 F.Supp.2d 322, 369; *County of Butte*, 90 Cal.App.5th at 162, internal citations omitted; *Cleveland National Forest Foundation v. San Diego Association of Governments* (2017) 3 Cal.5th 497, 504.) Considering that both groundwater and surface water supplies will be negatively impacted by climate change, the DEIR must discuss what measures will be implemented to ensure that future water needs will be met.

2. Surface water supplies and impacts

Climate change will cause surface water flows in California to diminish due to decreased rainfall and reduced snowpack levels. (Bedsworth 2018.) Fresno has consistently relied on surface water flows to meet its water needs in conjunction with groundwater supplies. (DEIR at 4.16-9.) The EIR indicates that surface water will continue to be a core source of water for the City. (DEIR at 4.16-10.)

A large portion of the water supplied to Fresno is from the Central Valley Project (CVP), which allots 60,000 afy of water from the San Joaquin River. (DEIR at 4.16-9.) The Central Valley's water system is substantially vulnerable to long-term changes in the climate resulting from lengthening periods of drought and a decreased frequency of precipitation events. (Ray 2020.) Even the EIR concedes that in critical, dry, and normal dry years, Fresno's allotment via the CVP has not been fully met; in those years, the City has received between 0 and 75 percent of its annual allocation. (DEIR at 4.16-9.) Fresno's annual use of surface water supplies is projected to increase until 2030, where it will hit and maintain a maximum level of 191,600 afy through 2045. (DEIR at Table 4.16-1.) Considering that the trend of multiple dry years and drought conditions is likely to increase, the City is going to face reductions of up to 31% of the annual surface water supplies through 2045. It seems unlikely that Fresno will be able to meet future water demands without either cutting back on water uses, or increasing withdrawals from an already overdrafted aquifer.

3. Groundwater supplies and impacts

The aquifer that supplies the City of Fresno with groundwater, the Kings River Subbasin (the "Subbasin"), is currently in a state of critical overdraft. (DEIR at 4.10-10.) Between 2011 and 2015, Fresno pumped approximately 111,522 acre-feet per year (afy) of water from the aquifer, which exceeds the its sustainable yield of 72,500 afy. (DEIR at 4.10-12.) The Subbasin is primarily recharged via subsurface flows originating from the Sierras, which are likely to be negatively impacted by climate change. (DEIR at 4.10-10; Hanson 2012.) This will diminish the quantity of water that naturally recharges the Subbasin, which Fresno will continue to rely on for the foreseeable future. (DEIR at 4.16-10, 11.) Meanwhile, Fresno's groundwater extraction is projected to "increase substantially" due to regional growth – increasing from 138,090 afy in 2025 to 154,490 afy in 2040. (DEIR at 4.10-21.)

In calculating the rates of aquifer recharge and concluding that future groundwater supplies will be sufficient for the Project, the EIR relies on data from 1964-2004, a time when the impacts of climate change were less severe. (DEIR at 4.10-12; UWMP at 6-11, 12.) There is a time lag between GHG emissions and the measurable impacts associated with them. (Ricke 2014.) Global GHG emissions have been increasing rapidly, and some studies suggest that emissions rates continue to accelerate. (Fyson 2023.) Considering that the EIR states that the Project area will continue to rely on groundwater supplies for the forseeable future, it is critical for the EIR to support its analysis of future groundwater supplies with more modern data. Further, the Project itself will likely reduce groundwater recharge. It will pave a significant acreage of current agricultural land, and so replace pervious surfaces with impervious ones. The EIR must account for reduced future groundwater recharge.

The EIR's lack of climate change analysis in its water supply discussions also implicates environmental justice concerns. Communities in unincorporated areas often rely on shallow wells to supply individual households with water, and, as groundwater levels are depleted, these wells are often the first to go dry. (Bostic 2023.) The EIR must determine if the Project's groundwater usage will impact the shallow wells in the surrounding unincorporated areas. If those impacts are determined to be significant, the EIR must implement mitigation measures that protect these communities from losing their access to water.

b. The EIR's Conclusions Regarding Water Supply Demands And Impacts Are Unsupported And Inconsistent

i. The Water Demands Associated with Different Land Uses are Unsupported by the Record.

According to the EIR, the adoption of the Specific Plan would result in a lower water demand than what is projected under the General Plan. (DEIR at 4.16-3.) The EIR states that, under the Specific Plan, the annual demand for water would be approximately 17,300 afy, which is 1,100 afy less than the demand projected under the General Plan, a 6% reduction. (DEIR at Table 4.16-3.) The conclusion that the Specific Plan's cumulative land uses will demand less water on average than the General Plan's cumulative land uses is largely based on the fact that there will be less heavy industrial land use, and more light industrial land use. (DEIR at Table 4.16-3.) The DEIR does not make it clear why these changes would result in the reduction in water demand, which is crucial for understanding exactly how the Specific Plan's land uses and associated impacts will differ from those under the General Plan.

The methods used to determine the water demand associated with the different land uses under the Specific and General Plans are not clear from the text of the EIR nor its supporting documents. The Water Supply Assessmet (WSA) used to inform the water supply projections in the EIR references a Hydraulic Analysis (HA) from 2022. (WSA at Table 2-1.) The HA states that the quantity of water associated with the various land use categories were "updated from 2010 Water System Master Plan… to reflect localized demands and flows, and confirmed by City Staff on February 17, 2022." (HA at Table 5.) The 2010 Water System Master Plan is not accessable through the City of Fresno's website, nor is it included in any of the applicable appendicies. The California Supreme Court has held that agencies must be able to show the "analytic route the administrative agency traveled from evidence to action" in order to "bridge the analytic gap from raw evidence and ultimate decision." (*Topanga Ass'n for a Scenic Cmty. v. Cnty. of L.A.* (1974) 11 Cal.3d 506, 515.) Simply including a statement that numbers, which are critical to the analysis of water supply and the ultimate conclusion of its sufficiency, were recalculated from a previous report and confirmed with the City is not a sufficient display of evidence.

It is the purpose of an EIR to give the public and agencies the information needed to make well informed decisions. (*In re Bay-Delta etc.*, 43 Cal.4th 1143, 1162.) Without a clear basis for the information relied upon throughout the water supply discussion, the DEIR fails as an informational document. In order to fulfill its duty under CEQA, Fresno must recirculate an EIR with full transparency regarding how each of the land use's associated water demands were determined.

ii. The EIR's Discussions of Water Supply and Water Supply Reliability are Contradictory

The EIR contradicts itself at various points throughout its discussion of water supply sufficiency and impacts. At one point, the EIR states that there will be more than enough water to meet future demands, and on the same page, it states that the surface water supply could face constraints during dry years. (DEIR at 4.16-10.) Paired with the fact that the groundwater aquifer is already in a state of critical overdraft, and that climate change is likely to result in yearly reductions in surface flows and groundwater recharge, it is unclear how exactly there will be "more than enough water" to supply future developments in the Project Area.

Concerning groundwater supplies and recharge, the EIR consistently acknowledges that the Kings River Subbasin is overdrafted and that groundwater supplies have been declining over the past 80 years. (DEIR at 4.16-10, 11.) Despite that, the EIR concludes that groundwater will be used to supply developments under the Specific Plan through 2045. (DEIR at 4.16-10, 11.) It then states that reliance on groundwater supplies will continue to go down, yet includes plans to drill an additional 8 wells in the Project Area and states that the Fresno's future groundwater production is projected to increase from 138,090 afy in 2025 to 154,490 afy in 2040. (DEIR at 4.10-21, 4.16-11.)

When a statement or finding in one place goes directly against a statement or finding in another place, and one cannot be true when the other is, those statements are contradictory and cannot be relied upon in an informational document like an EIR. (*See King & Gardiner Farms, LLC v. County of Kern* (2020) 45 Cal.App.5th 814, 874 [A court's conclusion that a specific measure would not mitigate project's effects directly contradicted the County's finding that the same measure would reduce a significant impact to less than significant.]; *see also Clover Valley Foundation v. City of Rocklin* (2011) 197 Cal.App.4th 200, 244 [EIR's conclusion was not contradictory because it was supported by substantial evidence.]) Here, the contradictions regarding the sufficiency of future surface and groundwater supplies in the Project area are not explained or supported by substantial evidence. The City must correct these contradictions in order to provide a factually sound EIR that fulfills its purpose as an informational document.

III. THE EIR'S ANALYSIS OF WATER QUALITY IMPACTS IS INADEQUATE.

The EIR does not include adequate information about the Project's water quality impacts. It mentions that Fresno's groundwater is contaminated. (DEIR at 4.9-16) But it does not mention that the groundwater under the Plan area is contaminated with a dibromochloropropane ("DBCP") plume, a nitrate plume, and a 1,2,3-trichloropropane ("TCP") plume. (UWMP 2020.) One of those chemicals, 1,2,3-TCP, is a manufactured chemical used for cleaning and degreasing in industrial contexts that is usually found at industrial or hazardous waste sites. (SWRCB 2017.) Because of its chemical properties, 1,2,3-TCP moves easily through soil into groundwater, is quickly transported within an aquifer, and may remain in groundwater for long periods of time. (*Ibid*.) Exposure to 1,2,3-TCP can cause liver and kidney damage and cancer. (*Ibid*.) The plume of 1,2,3-TCP under the Project site reaches concentrations of fifty ppt—ten times above the state's limit for drinking water. (UWMP 2020.)

The EIR does not explain what any of the chemicals in the groundwater under the Project site are, or the health risks of exposure. Neither does it describe, either qualitatively or quantitatively, the severity of the contamination. The only information the EIR provides about the groundwater contaminates is that "most [of them] are being addressed." (DEIR 4.10-12.) It does not say how successful those efforts have been. In fact, the only citation for any of the information about remediation is to the Fresno Irrigation District's 2006 Fresno Area Regional Groundwater Management Plan, leaving open the question of what progress has been made in the last eighteen years. (DEIR at 9-10.) The failure to disclose adequate, up-to-date information about the current level of contamination means that the EIR does not establish environmental baseline, invalidating its analysis. (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 320 [holding that use of the proper baseline is critical to a meaningful assessment of a project's environmental impacts], *Save Our Peninsula Comm. v Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 119.)

The EIR acknowledges, as it must, a risk that the Project "could adversely affect quality of surface water and groundwater." (DEIR at 4.10-20.) As the EIR admits that construction could degrade water quality through runoff, that construction materials like solvents and fuels could enter the water system, that that construction materials and equipment could release hazardous materials into the storm drains, that operations of the Project could release petroleum products, heavy metals, and roadway contaminants and treated wastewater into the land and water. (DEIR at 4.10-19, 20.) However, it concludes that the risk to water quality is not significant and does not need to be mitigated merely because future development will follow the law. (DEIR at 4.10-19, 21, 22, 24, 25.) The existence of state and federal standards does not absolve the City from the duty to do everything that is within its power to mitigate the impacts of this Project. A lead agency cannot rely on existing law to make a finding of no significant impact absent Project- and site-specific substantial evidence that the impacts will not be significant. (See *Save Our Capitol! v Department of Gen. Servs*. (2023) 87 Cal.App.5th 655, 696 (agency could not rely on compliance with LEED and CAL-Green building standards to mitigate light and glare impacts in absence of project-specific analysis of impacts and effect of compliance); *Californians for Alternatives to Toxics v Department of Food & Agric*. (2005) 136 Cal.App.4th 1 (EIR failed to analyze environmental and health risks of crop disease control program and instead presumed that no adverse impacts would occur from use of pesticides in accordance with the registration and labeling program of the California Department of Pesticide Regulation). See also *Ebbetts Pass Forest Watch v Department of Forestry & Fire Protection* (2008) 43 Cal.4th 936, 956 (fact that Department of Pesticide Regulation had assessed environmental effects of certain registered herbicides in general not excuse its failure to assess effects of their use for specific timber harvesting project).)

The City's claim that a full analysis of water quality impacts is not necessary because there is no evidence that the plan will increase contamination is not true. In fact, heavy industry often pollutes surrounding water through stormwater runoff, wastewater discharges, tire dust, or diesel exhaust. (Robbins 2023; British Geological Survey 2007; Li et al. 2021; Kriech & Osborn 2022; Mayer 2024; Müller 2020.) As discussed, the groundwater under the site is already contaminated by industrial pollutants like 1,2,3-TCP. The Project could very well add more contaminants though a variety of mechanisms. The City has not done anything to ensure the industrial pollution of Fresno's water does get worse.

IV. THE EIR'S ANALYSIS AND MITIGATION OF AIR QUALITY IMPACTS IS INADEQUATE.

Air quality is a significant environmental and public health concern in California. Unhealthy, polluted air contributes to and exacerbates many diseases and increases mortality rates. The U.S. government has estimated that between 10 to 12 percent of total health costs can be attributed to air pollution. (VCAPCD 2003.) Greenhouse gases, such as the air pollutant carbon dioxide, which is released by fossil fuel combustion, contribute directly to human-induced climate change (EPA 2016), and in a positive feedback loop, poor air quality that contributes to climate change will in turn worsen the impacts of climate change and attendant air pollution. (BAAQMD 2016.)

Air pollution and its impacts are felt most heavily by young children, the elderly, pregnant women and people with existing heart and lung disease. People living in poverty are also more susceptible to air pollution as they are less able to relocate to less polluted areas, and their homes and places of work are more likely to be located near sources of pollution, such as freeways or ports, as these areas are more affordable. (ALA 2024.) Some of the nation's most polluted counties are in the Central Valley. (ALA 2024.) According to the American Lung

Association's 2024 "State of the Air" report, Fresno County is the second-worst county in the country for particle pollution and sixth-worst county in the country for ozone pollution. (*Id.*) Even more disturbing, the same report found that Fresno County is one of only thirty counties in the country that received a "Fail" grade in all air quality metrics. (*Id.*)

Although there are many different types of air pollution, ozone, PM2.5, and toxic air contaminants (TACs) are of greatest concern in Fresno County. These three air pollutants have been linked to an increased incidence and risk of cancer, birth defects, low birth weights and premature death, in addition to a variety of cardiac and lung diseases such as asthma, COPD, stroke and heart attack. (Laurent 2016; ALA 2022.) Ozone (commonly referred to as smog) is created by the atmospheric mixing of chemicals released from fossil fuel combustion – such as reactive organic gases (ROG) and nitrogen oxides (NOx) – and sunlight. Although it is invisible, ozone poses one of the greatest health risks, prompting the EPA to strengthen its National Ambient Air Quality Standard for Ozone in 2015. (ALA 2024.) PM2.5 is a common component of vehicle exhaust emissions and contributes to visible air pollution. These tiny particles are dangerous because they are small enough to escape our body's natural defenses and enter the blood stream. Fugitive dust is a term used for fine particulate matter that results from disturbance by human activity such as construction and road-building operations. (VCAPCD 2003.) TACs are released from vehicle fuels, especially diesel, which accounts for 70% of the cancer risk from TACs. (CARB 2022.)

Warehouse projects are well-documented sources of air quality degradation that can create serious, negative health outcomes for surrounding communities. (Betancourt 2012, pp. 4-5.) Particulate emissions from diesel vehicles that carry freight to and from warehouses contribute to "cardiovascular problems, cancer, asthma, decreased lung function and capacity, reproductive health problems, and premature death." (*Id.* at 5.)

This Project is one in an extensive line in which local decisionmakers approve industrial development close to homes, despite health warnings from state air quality officials about the elevated asthma and cancer risks caused by industrial development, primarily due to diesel truck pollution. (Esquivel 2019.) The land use decisions the City makes now will affect the City's air quality for decades.

A. The Project's Air Quality Mitigation is Vague and Improperly Deferred.

Mitigation must include concrete, specific, and enforceable actions. (*California Clean Energy Committee v. City of Woodland* (2014) 225 Cal.App.4th 173 [City's urban decay mitigation measures were inadequate under CEQA to address the impact from the development of a 234-acre regional shopping center on undeveloped agricultural land because the measures did not ensure the city would take concrete, measurable actions].) In the limited circumstances in which deferred mitigation is appropriate, the agency must meet all of the following elements: (1) practical considerations prevented the formulation of mitigation measures during the planning process; (2) the agency committed itself to developing mitigation measures in the future; (3) the agency adopted specific performance criteria prior to project approval; and (4) the EIR lists the mitigation measures to be considered, analyzed, and possibly incorporated into the mitigation plan. (14 Cal. Code Regs §15126.4(a)(1)(B); *POET, LLC v. State Air Resources Bd.* (2013) 218

Cal.App.4th 681, 736-37 [review denied]; *San Joaquin Raptor Rescue Ctr. v County of Merced* (2007) 149 Cal.App.4th 645, 670; *Cleveland Nat'l Forest Found. v San Diego Ass'n of Gov'ts* (2017) 17 Cal.App.5th 413, 442.) Unfortunately, the EIR's proposed mitigation fails to meet these standards.

Instead of mitigating the significant air quality impacts by requiring specific mitigation measures, the EIR instead relies on mitigation measures 4.3-1a and 4.3-1m, which effectively amount to developing a mitigation plan in the future. Mitigation measure 4.3-1a merely promises a future Voluntary Emissions Reduction Agreement ("VERA") that will be formulated by the applicant after the Project is approved. The EIR implausibly claims that after implementation of the VERA emissions of ROG, NOx, PM10 and PM2.5 will all be reduced to below the significant thresholds, through the funding of unspecified "feasible mitigation." (DEIR at 4.3-37.) Here, the EIR fails to meet the criteria for deferred mitigation. It does not attempt to explain why it is not possible to formulate and disclose a mitigation plan now, and it does not list the mitigation measures to be considered.

Further, an EIR is inadequate if "[t]he success or failure of mitigation efforts may largely depend upon management plans that have not yet been formulated, and have not been subject to analysis and review within the EIR." (*San Joaquin Raptor, supra*, 149 Cal.App.4th at p. 670.) As courts have pointed out "[f]undamentally, the development of mitigation measures, as envisioned by CEQA, is not meant to be a bilateral negotiation between a project proponent and the lead agency after project approval, but rather, an open process that also involves other interested agencies and the public." (*Communities for a Better Environment v. City of Richmond*, (2010) 184 Cal.App.4th 70, 93.) Here, the City proposes exactly that—a mitigation plan that will be developed by the City and the developer after Project approval, with no guarantee of success, for no clear reason.

Even more concerning is that mitigation measure 4.3-1m claims that compliance with the air quality threshold might be achieved through off-site reductions. The mitigation measure contains explanation of how the effectiveness of these off-site measures will be evaluated or monitored. It also contains no geographic limitations, leaving open the possibility that the developer could meet their obligation by funding programs of unknown effectiveness in another state or country. Offset schemes must be carefully tailored to comply with CEQA's requirements (see generally *Golden Door Properties, LLC v. County of San Diego* (2020) 50 Cal.App.5th 467) and must be evaluated as a last option for mitigation where no other options are available or feasible. In this case, the City has not adequately considered alternatives that would avoid adding significant industrial development to an area with some of the worst air quality in the state. Allowing a developer to build toxic land uses that will emit without limit as long as the developer pays for some environmental project somewhere else raises serious environmental justice concerns. The EIR has not established that this vague, undefined plan will effectively reduce the impact of this Project to less than significant. (*Banning Ranch Conservancy v. City of Newport (2012) 211 Cal.App.4th 1209, 1232-34*.)

V. CONCLUSION

Thank you for the opportunity to submit comments on the Environmental Impact Report for the Fresno South Central Specific Plan. We urge the City to revise the EIR to address the issues detailed here, and recirculate a legally compliant document.

Given the possibility that the Center will be required to pursue legal remedies in order to ensure that the City complies with its legal obligations including those arising under CEQA, we would like to remind the City of its statutory duty to maintain and preserve all documents and communications that may constitute part of the "administrative record" of this proceeding. (§ 21167.6(e); *Golden Door Properties, LLC v. Superior Court* (2020) 53 Cal.App.5th 733, 762-65.) The administrative record encompasses any and all documents and communications that relate to any and all actions taken by the City with respect to the Project, and includes "pretty much everything that ever came near a proposed [project] or [] the agency's compliance with CEQA…" (*County of Orange v. Superior Court* (2003) 113 Cal.App.4th 1, 8.) The administrative record further includes all correspondence, emails, and text messages sent to or received by the City's representatives or employees, that relate to the Project, including any correspondence, emails, and text messages sent between the City's representatives or employees and the Applicant's representatives or employees. Maintenance and preservation of the administrative record requires that, *inter alia*, the City (1) suspend all data destruction policies; and (2) preserve all relevant hardware unless an exact replica of each file is made.

Please add the Center to your notice list for all future updates to the Project and do not hesitate to contact the Center with any questions at the number or email listed below.

Sincerely,

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From: [redacted]
To: [redacted]
Subject: Stop polluting communities!!!
Date: Tuesday, December 3, 2024 1:22:28 PM

External Email: Use caution with links and attachments

Good afternoon,

I live in D3 and work near this area. I feel so bad for the poor school children and families that are breathing in these fumes and surrounded by industry. Why must our district be forced to house these industries, breathe this air, while all the investment goes to the north! Stop terrorizing poor people in south Fresno! This plan must protect people not others pocketbooks!!!