

Commerce City Air Quality, the Suncor Oil Refinery, and Public Health Impacts

Executive Summary

Commerce City and the surrounding area are home to Colorado's worst air quality (Trotter & Trotter, 2021). The Suncor Energy oil refinery (commonly known as "Suncor") is located in the southwest corner of Commerce City and is often at the center of public attention regarding this issue (Figure 1). Suncor has been in operation since 1931 and has been identified as a major source of air pollution in Commerce City (Figure 2)(CDPHE, 2017; CDPHE, 2022). Commerce City residents face varying health impacts from surrounding air pollutants, including cancer, headaches, nosebleeds, and chronic lung diseases (Figure 3). The purpose of this case study is to assess the presence of air pollution emitted by Suncor and its impact on Commerce City's public health. Throughout this research project, our team identified and communicated with key stakeholders on the subjects of Suncor, air pollution, and public health in Commerce City. Our research revealed the need for further transparency and accountability for the public health impacts of Suncor's operations. Engagement also revealed the economic value that Suncor contributes to Colorado's economy, which limits the feasibility of community voices calling for reducing or terminating refinery operations (Suncor Energy Oil Refinery, 2022). Rather, Suncor's role in Commerce City represents a larger systemic issue: our fossil fuel-dependent economy and its associated, disproportionate harm to groups with the least power and resources to address it. As such, recommendations were formulated with an eye to both short-term and long-term solutions.

Community Description

Commerce City is a municipality in Adams County, Colorado. The community has a current population of 62,418 people and is located approximately seven miles north of Denver, which has drawn many to the community for employment and housing. Commerce City is a diverse area composed of 49.3% Hispanic or Latinx, 41.9% White, 4.4% Black, and 2% Asian populations (U.S. Census Bureau, 2019). Prior to this project, many residents and community activists have been vocal in expressing concern for the health impacts caused by the Suncor oil refinery.

Project Goals

The goals of this project are to (i) assess Commerce City residents' understanding of the health impacts of air pollution emitted by Suncor; (ii) evaluate the extent to which CDPHE and Suncor's current measures to address air pollution are meeting the community's needs; (iii) generate recommendations to improve relationships between stakeholders who have historically been at odds with one another (McCue, 2020).

Methods / Stakeholder Engagement:

During the first phase of this project, our team conducted an in-depth review of existing knowledge about Suncor, air pollution, and public health in Commerce City. This process helped our team identify stakeholders who represent major voices in our research topic. Throughout this process, we also searched for any potential stakeholder groups we may have missed. In our effort to address gaps, we considered those with personal experience living or working in Commerce City, as well as those with technical expertise in public health and air quality. The second phase of our project was to map all identified stakeholders based on a stakeholder's "influence in" and/or "interest in" our research topic. Mapping our project's stakeholders allowed our team to visualize all stakeholders and assess how stakeholders are connected to each other and our research. In order to gain a deeper understanding of the presence of Suncor in Commerce City and the impact of its air pollution on public health, our team conducted a site visit. For this phase of our project, we visited Commerce City and observed air quality, residential households' proximity to Suncor, and general community makeup and assets. For the final stage of our project, our team reached out to twenty stakeholders and conducted six virtual interviews with a total of nine individuals representing organizations including CDPHE, Suncor, Commerce City Council, the Regional Air Quality Council, Earthjustice, and WIC. To complement interviews, we created and dispersed a community survey in both English and Spanish to reach a broader sector of the community via Commerce City-based Facebook pages and online forums. Unfortunately, the survey we dispersed received zero responses.

Key Findings

Through stakeholder engagement, our understanding of the issue of air pollution and its public health impacts in Commerce City expanded and gained depth. Our findings are summarized here:

1. **Local manifestations of air pollution are inseparable from the larger systemic problem of energy derived from fossil fuels.** Although multiple community groups call for the cessation of Suncor's activities (Cultivando & Spirit of the Sun, 2021), our stakeholder interviews revealed that the economic dependence on fossil fuels makes such proposed measures unfeasible at this time. For instance, Denver International Airport relies heavily on Suncor for jet fuel and, as the only major oil refinery in Colorado, Suncor plays an important role in the state's economy (CDPHE, 2022). Under this paradigm, only a society-wide transition would totally eliminate the need for Suncor's products.
2. **Though Suncor has been held accountable for recent violations through legal settlements, the refinery and other associated stakeholders have not been held accountable for their true impact on Commerce City.** The adverse health impacts residents face, which are largely caused by Suncor, have not been sufficiently recognized or addressed. High levels of distrust are prevalent among community members, and the actions that Suncor is taking to address public health impacts are met with skepticism.

3. **The relationships between authoritative parties (including Suncor and CDPHE) and community-driven stakeholders are not conducive to collaboration.** In part, this is due to a disconnect between lived and technical knowledge. Residents concerned about their experiences living in Commerce City feel that they are not currently being provided with sufficient or accurate technical information about the public health impacts related to Suncor's operations. High levels of distrust and a history of disenfranchisement stand in the way of co-creation.

Recommendations:

Note: In light of our first finding, the following recommendations acknowledge the systemic nature of fossil fuel use and the limitations to addressing air pollution in an economy largely reliant on fossil fuels. Recommendations, therefore, focus on reducing the public health impacts of Suncor's current operations. However, we acknowledge that longer-term solutions require a transition away from fossil fuels to address air pollution at its root causes.

1. **Build trust and rapport through actionable and transparent items.** Given the environment of community skepticism, Suncor and CDPHE (as authoritative parties) should focus on building trust by directly addressing concerns about air pollution emitted by the Suncor refinery.

a. The first step towards building trust between stakeholders in Commerce City is for Suncor to take formal responsibility for harm that has been produced from air pollution. Genuine trust is unlikely to be earned without meaningful action by Suncor to address its public health impacts. Creating a compensation structure for those impacted by air pollution will help to establish an authentic recognition of harm inflicted on Commerce City residents.

b. Suncor should invest in innovative practices (i.e. centralized gathering and compression facilities, fueling of diesel generators powering drilling rigs, chemical production, etc.) that enable the capture and sale of gas, rather than the flaring of it (Tabuchi, 2019; Energy and Environmental Research Center, 2014). This would demonstrate meaningful action to reduce the refinery's public health impacts, which is especially important given its location adjacent to a marginalized community.

c. A co-creation effort led by Suncor, CDPHE, and community residents should be established in order to build resilient spaces in Commerce City that reduce the health impacts associated with air pollution and mitigate the negative impacts caused by climate change. Resilient solutions, especially those based in nature (i.e. greenways), can significantly reduce the effects of air pollution by capturing pollutants (Cohen et al., 2014). Resilient design can also limit risks associated with climate change, ideally protecting Commerce City and Suncor from future harm. As climate change worsens, the Suncor refinery and Commerce City will become increasingly exposed to risks including wildfires, severe storms, power outages, and floods which could exacerbate current environmental health issues. Incorporating resilient solutions into future

planning and policy could help to address present air quality issues and mitigate against future potential harms associated with climate change.

2. Create quality communication and collaboration to benefit all involved stakeholders. In order to improve the quality of communication between stakeholders, create a cohesive understanding of existing knowledge and conditions, and provide a foundation for collaboration between stakeholders, our team has developed two feasible recommendations for action:

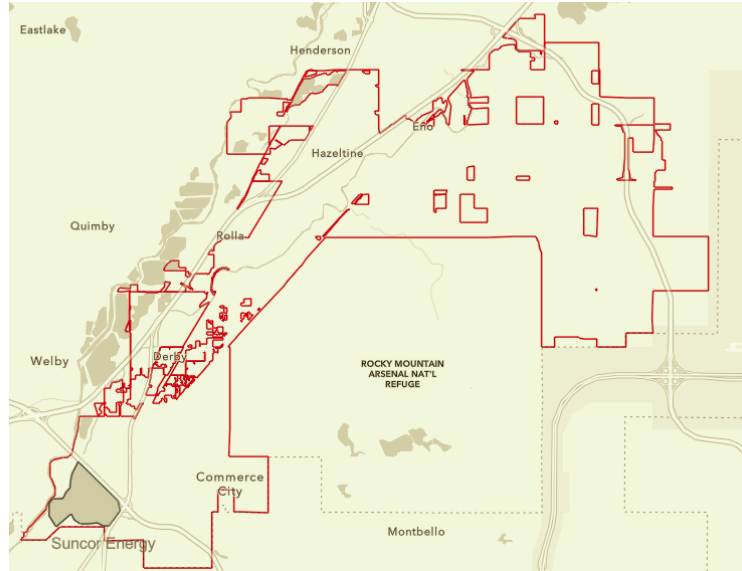
- a. Form a community advisory committee, including members from CDPHE. This committee would provide Suncor with community input regarding Suncor's operations. A community advisory committee would help to identify and resolve local concerns and create trust with the community. This action could build sustained collaboration between community, government, and company in Commerce City.
- b. Air monitoring and alert systems should put greater emphasis on chronic, rather than acute health impacts from air pollution. Current refinery notifications from Suncor focus on day-to-day impacts, while residents show great concern for chronic impacts that accumulate over time.

Conclusion:

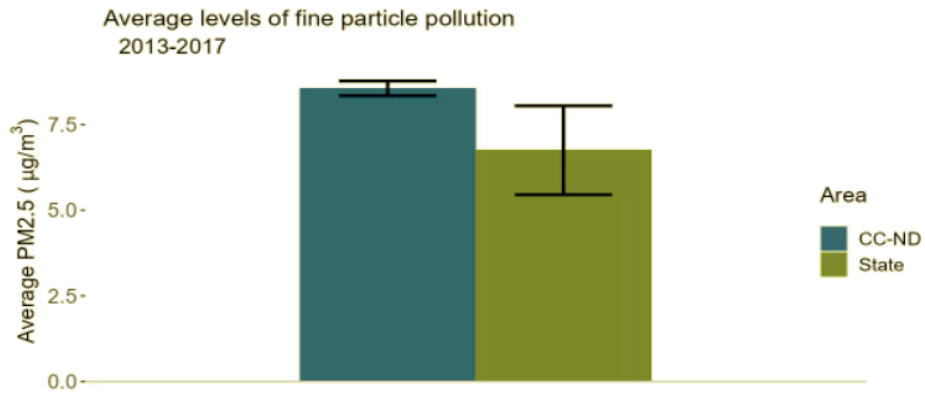
The issue of air pollution from Suncor and associated public health impacts in Commerce City is incredibly complex. Through this case study, we sought to better understand community perspectives on the public health impacts of Suncor's air pollution and to evaluate the effectiveness of current measures to address the issue. After engaging with nine different stakeholders, we concluded that air pollution caused by Suncor is correlated with the systemic issue of a fossil fuel-dependent economy. Moreover, we discovered that there exists a lack of accountability for Suncor and that existing stakeholder relationships involved in the issue are not conducive to collaboration. These findings informed our recommendations to i) build trust and rapport between authoritative parties and the community through specific actions to address public health now and in the future and ii) set up communicative systems that will gain feedback from the community as well as address their concerns. Suncor needs to take action to address the negative public health impacts their air pollution is causing in Commerce City. In order to be successful in solving the issue of air pollution in Commerce City, Suncor must authentically engage with the community and gain buy-in from stakeholders.

Appendix:

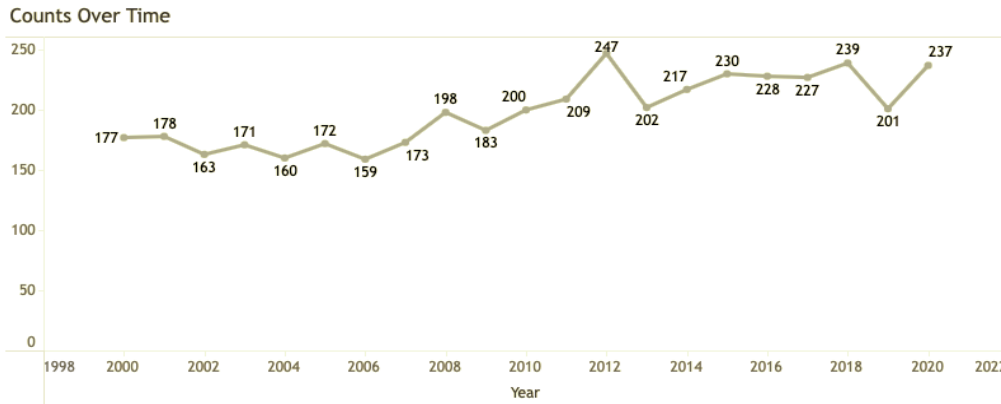
1. Figure 1: Map of Commerce City in relation to the location of Suncor Energy. Map created by Melissa Hunter. Datasets from Commerce City Government open-access database. (City of Commerce City, n.d.)



2. Figure 2: Levels of particulate matter air pollution are more concentrated in Commerce City-North Denver (CC-ND) than the rest of the state of Colorado (CDPHE, 2017)



3. Figure 3: Number of chronic lung-related deaths in Commerce City by year. (Colorado Department of Public Health and Environment, 2020)



4. Interviews Conducted:

# of Individuals	Organizations Represented
4	Suncor
1	CDPHE, Air Pollution Control Division
1	Commerce City Council & Regional Air Quality Council
1	Commerce City Council
1	Earthjustice
1	Women, Infants, Children (WIC) Clinic Commerce City

5. Complete List of Outreach Conducted: (including those who responded for interviews):

Organization Contacted (or organization that individual represents)
Cultivando
350 CO Community Activist
Representative from Kids First Health Care and Adams 12 5-Star Schools
Moms Clean Air Force
Colorado Moms Facebook
EPA
Colorado Sierra Club
Our Lady Mother Church in Commerce City
Administrative manager for WIC
CU Air Quality Professor
Colorado People's Alliance
CU Environmental Health Professor
Colorado Latino Forum
Cross Community Coalition
Suncor
CDPHE, Air Pollution Control Division
Commerce City Council & Regional Air Quality Council
Commerce City Council
Earthjustice
Women, Infants, Children (WIC) Clinic Commerce City

6. Surveys in English and Spanish: [English](#), [Spanish](#)

References:

- CDPHE. (2022). *Suncor Oil Refinery*. Colorado Department of Public Health and Environment. Retrieved April 24, 2022, from <https://cdphe.colorado.gov/public-information/information-about-suncor-refinery>
- City of Commerce City. (n.d.). *Maps, Data & GIS*. Commerce City. Retrieved April 28, 2022, from <https://www.c3gov.com/living-in/maps>
- Cohen, P., Potchter, O., & Schnell, I. (2014). The impact of an urban park on air pollution and noise levels in the Mediterranean city of Tel-Aviv, Israel. *Environmental Pollution*, 195, 73–83. <https://doi.org/10.1016/j.envpol.2014.08.015>
- Cultivando & Spirit of the Sun. (2021, November 23). Suncor Sundown. Retrieved February 24, 2022, from <https://www.suncorsundown.org/>
- Energy and Environmental Research Center. (2014). *Reduced Gas Flaring | Bakken - Beyond the Boom*. Beyond the Boom. Retrieved April 25, 2022, from <https://undeerc.org/bakken/Reduced-Gas-Flaring.aspx>
- Intermountain Oil and Gas BMP Project. (2015, August 13). *Communities: Intermountain Oil and Gas Project*. Intermountain Oil and Gas BMP Project. Retrieved April 24, 2022, from <http://www.oilandgasbmps.org/resources/communities.php>
- McCue, C. (2020, August 19). 'History Of Abusing This Community': Commerce City Mayor Expresses Frustration With Suncor. CBS Denver. Retrieved April 27, 2022, from <https://denver.cbslocal.com/2020/08/19/suncor-commerce-city-pollution-emissions-carbon-monoxide-air-quality/>
- Suncor Energy Oil Refinery. (2022). *Commerce City Refinery*. Suncor. Retrieved April 24, 2022, from <https://www.suncor.com/en-ca/what-we-do/refining/commerce-city-refinery>
- Tabuchi, H. (2019, October 16). *Despite Their Promises, Giant Energy Companies Burn Away Vast Amounts of Natural Gas (Published 2019)*. The New York Times. Retrieved April 24, 2022, from <https://www.nytimes.com/2019/10/16/climate/natural-gas-flaring-exxon-bp.html>
- Trotter, J., & Trotter, J. (2021, August 30). *Colorado's worst air: North Denver, Commerce City | News* | *gazette.com*. Colorado Springs Gazette. Retrieved April 24, 2022, from https://gazette.com/news/colorados-worst-air-north-denver-commerce-city/article_4732b4da-0761-11ec-8e1a-d7e5862eb3c2.html

U.S. Census Bureau. (2019). Geography Profile of Commerce City city, Colorado. Retrieved February 6, 2022, from <https://data.census.gov/cedsci/profile?g=1600000US0816495>