Reversing Course in California: Moving CEQA Forward

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Today in California, urban infill development proliferates. A welcome alternative to decades of greenfield expansion, this infill boom is the culmination of regulatory incentives like SB 375, economic growth in urban areas, as well as increasing awareness of the climate evils of vehicle emissions (quantified in vehicle miles traveled, or VMT). The social, spatial, environmental, and economic effects of this infill boom are far-flung and implicate many areas of study. This Note focuses on the environmental health implications of siting infill development near increasingly trafficked transit corridors. By placing people in closer proximity to work and transit, infill development lowers VMT; however, this land-use pattern potentially exposes more people to fine particulate matter from vehicles. The California Air Resources Board and Air Quality Management Districts initially attempted to solve this exposure issue through the California Environmental Quality Act (CEQA). Concerns about the suitability of CEQA to address these "reverse" environmental issues, perceived barriers that CEQA poses to infill development, and environmental health collided in California Building Industries Association v. Bay Area Air Quality Management District*. Though seemingly contrary to decades of planning practices in California, the California Supreme Court's decision offers a new way forward—a path planners and health officials in San Francisco began in 2008—that could potentially make urban infill easier to develop as well as healthier for residents.*

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INTRODUCTION

Miraflores Senior Apartments is the future home of eighty low-income senior households in Richmond, California.[1] The development serves as a model of California's new planning priority—compact, transit-oriented "smart growth." The location is transit rich—about a half-mile from BART and a two-minute walk to bus lines. With fifty-one dwelling units per acre, the project is significantly denser than the residential neighborhood surrounding it. The development also incorporates sustainable building practices and will exceed California's energy efficiency standards.[2] In addition to green building, the project checks many of the boxes critical to equitable growth in the housing-constrained Bay Area.[3] Low-income seniors will pay no more than 30 percent of their monthly income in rent.[4] Half of the units will have accessibility features for disabled residents.[5]

Thanks to SB 375, sustainable infill development like Miraflores Senior Housing has become a statewide policy. Recognizing that reducing greenhouse gas emissions from stationary sources alone is not sufficient to meet long-term

1. *See* CITY OF RICHMOND, MIRAFLORES HOUSING DEVELOPMENT PLAN FINAL EIR 2-1 (2009), http://www.ci.richmond.ca.us/documentcenter/view/5119; CAL. TAX CREDIT ALLOCATION COMM., PROJECT STAFF REPORT: MIRAFLORES SENIOR APARTMENTS 1 (2016), http://treasurer.ca.gov/ctcac/meeting/staff/2016/20160720/4/887.pdf.

2. Projects funded under the Low-Income Tax Credit Program must exceed Title 24 energy efficiency standards to maximize the project's competitiveness for funding. CAL. CODE REGS. tit. 4, § 10325(c)(6)(B)(i) (2017).

3. Equity planning seeks to "[e]nsure fairness and equity in providing for the housing, services, health, safety, and livelihood needs of all citizens and groups." AM. PLANNING ASS'N, SUSTAINING PLACES: BEST PRACTICES FOR COMPREHENSIVE PLANS 3 (2015), https://planning-org-uploaded-media.s3.amazonaws.com/legacy_resources/store/books/pdf/pas578execsumm.pdf.

4. *See* CAL. TAX CREDIT ALLOCATION COMM., *supra* note 1, at 2 (noting that 100 percent of the units have Housing and Urban Development Section 8 Project-Based Vouchers). Section 8 vouchers enable residents to pay just 30 percent of their income towards rent. *Housing Choice Voucher Fact Sheet*, U.S. DEP'T OF HOUS. & URBAN DEV., http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/programs/hcv/about/fact_sheet (last visited Apr. 16, 2017).

5. *See Miraflores Senior Apartments*, EDEN HOUS., https://www.edenhousing.org/property/miraflores-senior-apartments (last visited Apr. 16, 2017).

climate change goals, the California legislature enacted SB 375 to reduce emissions from passenger vehicles.[6] SB 375 linked reduction of vehicle miles traveled (VMT) with changed land-use patterns and improved transportation.[7]

In practice, SB 375 prioritizes compact development located near transit, commonly referred to as "[s]mart [g]rowth."[8] Numerous studies have confirmed the link between compact development patterns and greenhouse gas emissions reductions.[9] But what SB 375 largely ignores is the change in distribution of exposure that accompanies compact infill development. Promoting more development in close proximity to mass transit systems may end up "locat[ing] more people in areas where air quality is already poor, potentially increasing health problems even as emissions fall."[10]

Located approximately 200 feet from Interstate 80 (I-80), the Miraflores development illustrates the regulatory hole in SB 375. I-80 is the vital transportation artery that connects the East Bay to the San Francisco and Silicon Valley economic center. Recently, this segment of I-80 earned the honor of being the first freeway in the Bay Area to have nonstop congestion between the morning and evening commute hours.[11] Between 5:35 am and 7:50 pm, cars chug along at average speeds of less than 35 miles an hour, releasing large volumes of fine particulate matter (PM 2.5) and other toxic contaminants into the air.[12]

A growing body of scientific evidence shows that fine particulate matter has deleterious consequences on human health, including mortality, asthma, heart disease, and cancer.[13] But the impact of infill development on human

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6. *See* S. 375, 2007–08 Leg., Reg. Sess. (Cal. 2008).

7. *See id.*

8. Although frequently associated with transit-oriented development patterns, smart growth is a larger concept that advances "choice and opportunity by promoting efficient and sustainable land development, incorporate[ing] redevelopment patterns that optimize prior infrastructure investments, and consum[ing] less land that is otherwise available for agriculture, open space, natural systems, and rural lifestyles." *See APA Policy on Smart Growth*, AM. PLANNING ASS'N (Apr. 14, 2012), https://www.planning.org/policy/guides/adopted/smartgrowth.htm.

9. *See* Christopher Jones & Daniel M. Kammen, *Spatial Distribution of U.S. Household Carbon Footprints Reveals Suburbanization Undermines Greenhouse Gas Benefits of Urban Population Density*, 48 ENVTL. SCI. & TECH. 895, 899 (2014) (finding that dense urban centers have a smaller carbon footprint than outlying suburbs).

10. Lisa Schweitzer & Jiangping Zhou, *Neighborhood Air Quality, Respiratory Health, and Vulnerable Populations in Compact and Sprawled Regions*, 76 J. OF THE AM. PLAN. ASS'N 363, 364 (2010).

11. *See Top 50 Congested Locations 2015—Ordered by Rank*, METRO. TRANSP. COMM'N, http://mtc.ca.gov/sites/default/files/top_50_congested_2015.pdf (last visited Apr. 16, 2017).

12. *Id.*

13. *See generally* Francine Laden et al., *Reduction in Fine Particulate Air Pollution and Mortality: Extended Follow-up of the Harvard Six Cities Study*, 173 AM. J. RESPIRATORY & CRITICAL CARE MED. 667 (2006) (concluding that total cardiovascular and lung cancer mortality were each positively associated with ambient PM 2.5 concentrations); James C. Slaughter et al., *Effects of Ambient Air Pollution on Symptom Severity and Medication Use in Children with Asthma*, 91 ANNALS OF ALLERGY, ASTHMA & IMMUNOLOGY 346 (2003) (finding that increases in PM 2.5 are significantly associated with increased risk of more severe asthma attacks).

health is by no means a reason to undo smart growth policies. A 2010 study summarized the practical implications as such: "rather than just focusing on emissions reductions" as quantified by VMT, planners should also "take differences in neighborhood air quality and human exposure into account when planning for new compact developments . . . ."[14] The implementation of these planning processes prompted the California Building Industries Association to file suit against the Bay Area Air Quality Management District (BAAQMD).

The resulting lawsuit, *California Building Industries Association v. Bay Area Air Quality Management District* (*CBIA*),[15] definitively answered the long-standing question of whether the California Environmental Quality Act (CEQA) applies to "reverse" environmental effects.[16] On its face, CEQA requires agencies to analyze a project's direct impacts on the environment. This includes the impacts of project-related emissions on air quality, a project's effect on a local endangered species, and even a project's shadow on a public park. Departing from the typical environmental harm paradigm, reverse CEQA analysis instead asks how the environment will impact the future users of a project. Reverse environmental analysis is particularly relevant today, as a severely degraded environment threatens human health around the world.

CBIA specifically considered whether an agency can analyze the impacts of poor air quality on a proposed residential development.[17] Striking down these "receptor thresholds," the California Supreme Court unanimously held that CEQA only requires an analysis of the project's impacts on the environment.[18] The practical implications of this decision are two-fold. First, if an environmental condition, such as poor air quality or rising sea levels, will negatively impact a project, the local jurisdiction cannot require an Environmental Impact Report (EIR) to further study these effects. Second, if an EIR is not permissible, a jurisdiction cannot use CEQA to require a developer to mitigate these reverse effects.

Intuitively, the decision seems contrary to the purpose of environmental planning. Indeed, as many planners highlighted in their amicus briefs, "reverse" environmental effects have been part of the CEQA analysis since the law's inception.[19] But to understand the *CBIA* decision properly requires a reframing of the issue. The issue in *CBIA* was not whether jurisdictions should be addressing these reverse effects, but rather whether CEQA is the proper vehicle for this analysis.

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14. Schweitzer & Zhou, *supra* note 10, at 363.
15. *See* Cal. Bldg. Indus. Ass'n. v. Bay Area Air Quality Mgmt. Dist., 362 P.3d 792 (Cal. 2015).
16. *See id.* at 794, 800 n.11.
17. *Id.* at 795–96, 801.
18. *Id.* at 804.
19. Brief for Cal. Chapter of the Am. Planning Ass'n & Cal. Ass'n of Envlt. Prof'l as Amici Curiae Supporting Appellant at 4, 9, Cal. Bldg. Indus. Ass'n v. Bay Area Air Quality Mgmt. Dist., 362 P.3d 792 (Cal. 2015) (No. S213478).

CEQA is simply not the right tool to mitigate the health impacts of the environment on a project. Requiring an agency to consider reverse effects adds further uncertainty to the entitlement process. Moreover, because of CEQA's case-by-case approach to mitigation, this uncertainty is not offset by consistent health benefits to vulnerable populations. The housing crisis that permeates California[20] requires regulatory tools that improve environmental health outcomes without adding significantly to the cost of housing. Indeed, *CBIA* offers jurisdictions a unique chance to reduce the burdens of the entitlement process while achieving more consistent beneficial public health outcomes. By precluding reverse analysis in most instances, *CBIA* will also incentivize jurisdictions to engage in long-term planning processes instead of using CEQA as a substitute.

Part I of this Note provides background on the information forcing and public participation requirements of CEQA. Part II discusses the facts and the policy rationales underlying the *CBIA* decision. Though in the context of climate change the distinction between environmental impacts on the project and the project's impacts on the environment seems somewhat artificial, this Part argues that the court reached the correct conclusion.

Part III examines the application of these receptor thresholds across California pre-*CBIA* through a case study of developments funded under the Affordable Housing and Sustainable Communities (AHSC) program. While this Part ultimately finds that the gloom and doom scenario predicted by pro-development advocates likely would not have come to pass had the court ruled the other way, it also finds that the receptor thresholds did not lead to uniform health protections from toxic air contaminants. This finding is critical to design an efficient regulatory system that protects public health without sacrificing predictability for developers.

Part IV details an alternative way to mitigate reverse environmental effects through traditional command-and-control regulation. This Part focuses on San Francisco's use of local police powers to implement Article 38, which integrates indoor air quality regulation into the building and health codes. This approach might prove consistently more protective of environmental health than CEQA, as well as less burdensome for developers. More importantly, unlike CEQA, this type of regulation still attaches to "by right development."[21]

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20. Noting that California's average home price is two-and-a-half times higher than the national average, the California Legislative Analyst's Office estimates that in addition to "the 100,000 to 140,000 housing units California is expected to build each year, the state probably would have to build as many as 100,000 additional units annually—almost exclusively in its coastal communities—to seriously mitigate its problems with housing affordability." *See* MAC TAYLOR, LEGISLATIVE ANALYST'S OFFICE, CALIFORNIA'S HIGH HOUSING COSTS: CAUSES AND CONSEQUENCES 3–4 (2015), http://www.lao.ca.gov/reports/2015/finance/housing-costs/housing-costs.pdf.

21. By right or as of right development means that "the local government's review . . . may not require a conditional use permit, planned unit development permit, or other discretionary local government review or approval that would constitute a 'project' for purposes of [CEQA] . . . ." CAL. GOV'T CODE § 65583.2(i) (West 2017).

By right development is an important, albeit controversial, tool to increase housing supply in California.[22] Governor Jerry Brown's recent budget trailer bill would have exempted from discretionary local review any development that provides a minimum percentage of affordable housing.[23] Though Governor Brown's bill did not garner enough support in the legislature, if the push towards by right development succeeds, command-and-control regulation will be the primary tool for local jurisdictions to mitigate negative environmental health externalities.

Finally, the Note concludes by offering several principles for devising a regulatory system that mitigates other reverse environmental effects, such as sea level rise.

I. CEQA: INFORMATION DISCLOSURE AND PUBLIC PARTICIPATION

Modeled after the National Environmental Policy Act (NEPA), CEQA combines mandatory information disclosure with public participation to "open[] governmental decision making to public scrutiny."[24] Open decision making in turn "exerts a powerful . . . influence on the course of agency action."[25] Like its federal counterpart, CEQA is "[o]ne of California's most cherished institutions—as well as one of its most controversial."[26] This Part traces the core components of CEQA and controversies that attach.

A. Information Forcing Requirements

CEQA applies to any project that requires a public agency's discretionary approval.[27] First, a developer must determine whether their project requires an approval from an agency. In the context of urban land development, the lead public agency is usually the local Planning Department.[28]

Second, the lead agency determines whether the approval is discretionary or ministerial. CEQA does not apply to ministerial approvals, in which the lead

22. *See* EDMUND G. BROWN, JR., 2016-17 CALIFORNIA STATE BUDGET 35 (2016), http://www.ebudget.ca.gov/2016-17/pdf/Enacted/BudgetSummary/FullBudgetSummary.pdf. Because the by right proposal would prevent a local government from requiring discretionary approvals that meet the by right legislative criteria, local governments could not subject these projects to CEQA review.

23. *See* CAL. DEP'T OF FIN., STREAMLINING AFFORDABLE HOUSING APPROVALS: TRAILER BILL TECHNICAL MODIFICATIONS (6-10-16), at 5–6 (2016), http://www.dof.ca.gov/budget/Trailer_Bill_Language/documents/707StreamliningAffordableHousingApprovals6-10-16.pdf.

24. Bradley C. Karkkainen, *Toward a Smarter NEPA: Monitoring and Managing Government's Environmental Performance*, 102 COLUM. L. REV. 903, 913 (2002).

25. *Id.*

26. *See* JOHN D. LANDIS ET AL., FIXING CEQA: OPTIONS AND OPPORTUNITIES FOR REFORMING THE CALIFORNIA ENVIRONMENTAL QUALITY ACT 1 (California Policy Seminar ed. 1995).

27. CAL. PUB. RES. CODE § 21080 (West 2017).

28. State law requires each city and county to have a planning agency—either an administrative body or a commission—to carry out the state planning laws, which include General Plan laws discussed in this Part. *See* CAL. GOV'T. CODE §§ 65100, 65101 (West 2017). Planning agencies generally enforce the local zoning code and make land use determinations. *See* MILLER & STARR, 7 CAL. REAL ESTATE § 21:1 (4th ed. 2016).

agency simply applies law to fact without using subjective judgment.[29] In most jurisdictions, building permits only require ministerial approval[30] because the developments are "by right." Discretionary approvals, on the other hand, include Conditional or Special Use Permits, subdivision maps, or zoning changes.[31] Unlike ministerial approvals, Planning Departments are not legally obligated to grant these types of approvals; instead, they use discretionary judgment to evaluate the project based on subjective criteria.[32]

Even if a project is discretionary, it may still be categorically exempt from CEQA. The legislature has carved out thirty-three statutory exemptions to CEQA.[33] For infill developments, many lead agencies use the section 15332 infill exemption. Under this exemption, if an urban infill project satisfies five statutory conditions, it can bypass CEQA review.[34] Development proponents feared that the receptor thresholds at issue in *CBIA* would make this infill exemption infeasible.[35]

The lead agency conducts an Initial Study for discretionary projects that do not fall within a categorical exemption.[36] Where the Initial Study indicates that the project will not have a significant effect on the environment, the agency issues a Negative Declaration and the project goes forward.[37] If the project will have a significant effect on the environment, but the developer agrees to make modifications that reduce their significance, then the agency issues a Mitigated

29. *See* State CEQA Guidelines, CAL. CODE REGS., tit. 14, § 15369 (2017). "State CEQA Guidelines" refers to Title 14, Chapter 3 of the California Code of Regulations, which implement CEQA. *See id.* § 15001. In *Friends of Westwood, Inc. v. City of Los Angeles*, the court of appeal held that "the touchstone" of the discretionary ministerial distinction "is whether the approval process involved allows the government to shape the project in any way which could respond to any of the concerns which might be identified in an environmental impact report." 191 Cal. App. 3d 259, 267 (1987). The court ultimately found a building permit to be presumptively ministerial for these reasons. *Id.* at 273.

30. *See* REGS § 15268(b). Though building permits are presumptively ministerial, local agencies can specify otherwise in their laws. *See id*. § 15268(a).

31. *See* GOV'T § 65583.2(i).

32. *See* REGS. § 15357.

33. *Id.* §§ 15300–15333.

34. *Id.* §15332. The section's conditions are as follows: "(a) The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations[;] (b) [t]he proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses[;] (c) [t]he project site has no value, as habitat for endangered, rare or threatened species[;] (d) [a]pproval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality [; and] (e) [t]he site can be adequately served by all required utilities and public services." *Id*.

35. *See* Brief for Ctr. for Creative Land Recycling et al. as Amici Curiae Supporting Respondent at 19, Cal. Bldg. Indus. Ass'n v. Bay Area Air Quality Mgmt. Dist., 362 P.3d 792 (Cal. 2015) (No. S213478). Outside of categorical exemptions, infill development review under CEQA can also be streamlined. *See* REGS § 15183.3. Streamlined review enables a project to go through a narrower scope of environmental evaluation. Though this streamlined process is helpful for developers, it's not as expedited as a categorical exemption, which obviates the need for any review.

36. *See* REGS § 15063(a).

37. *Id.* § 15070(a).

Negative Declaration (MND).[38] A lead agency must prepare an EIR where there is substantial evidence that the project will have a significant effect on the environment.[39] Unlike a MND, an agency must prepare an EIR where it is not clear from the Initial Study that these impacts can be mitigated below a significance level.[40]

The difference between a MND and EIR often determines the time and cost of a project. EIRs are lengthy documents that contain three key components: (1) detailed information about the proposed project's significant effects on the environment; (2) ways in which the significant effects of such a project might be minimized; and (3) alternatives to the project.[41] To measure the impacts in a consistent manner, lead agencies develop thresholds of significance.[42] These thresholds identify "quantitative, qualitative or performance level of a particular environmental effect," noncompliance with which requires mitigation or a statement of overriding considerations.[43] If an agency chooses to adopt thresholds by ordinance, resolution, or regulation, the thresholds must be subject to a public review process and supported by substantial evidence.[44] Agencies may also use thresholds developed by other public agencies.[45]

Few would deny that CEQA's information mandate forces agencies to "identify and confront the environmental consequences of their actions."[46] CEQA proponents further argue that the procedural requirements also enable cost-effective mitigation, because agencies can take into account "the site-specific circumstances" of the project "in a flexible manner" rather than applying blanket regulations.[47] In other words, CEQA enables mitigations that are both appropriately tailored and feasible for the project.

For project applicants, however, this flexibility often borders on inconsistency. CEQA critics have attacked the way agencies unpredictably apply CEQA both within the same jurisdiction and across the state.[48] This inconsistency increases not only the time and money spent on CEQA review, but also the risk of litigation discussed further in Part II.B.[49] Some of these detractors question whether or not CEQA actually leads to meaningful

38. *Id.* § 15070(b)(2).

39. *Id.* § 15063(b)(1). A project may also bypass the Initial Study to proceed directly to the EIR. § 15060(d).

40. *See* CAL. PUB. RES. CODE § 21064.5 (West 2017); REGS. § 15070.

41. PUB. RES. § 21061.

42. REGS. § 15064.7(a).

43. *See id.*

44. *Id.* § 15064.7(b).

45. *Id.* § 15064.7(c).

46. Karkkainen, *supra* note 24, at 904.

47. ELISA BARBOUR & MICHAEL TEITZ, POLICY INST. OF CAL., CEQA REFORM: ISSUES AND OPTIONS, PUBLIC 4 (2005) (emphasis omitted), http://www.ppic.org/content/pubs/op/OP_405EBOP.pdf (emphasis omitted).

48. See *id.* at 15.

49. *Id.*

mitigation of harm.[50] Because CEQA leaves implementation entirely to local control, it cannot standardize the way agencies weigh environmental harms and social or economic benefits.[51]

Moreover, because CEQA applies on a project-by-project basis, it lacks a long-term perspective. Though most agree that an EIR is an excellent tool to analyze project-specific effects, the EIR cannot mitigate the regional and cumulative effects of development that are better suited to the general plan process.[52] In California, each jurisdiction must have a General Plan—the "constitution" for long-term physical development of the city or county.[53] Land-use and zoning decisions must be consistent with that plan.[54] With the exception of certain sub-elements, California law does not require that jurisdictions update their General Plan according to a set schedule; the law only suggests "periodic" updates.[55] Due to the time and resource constraints of having to prepare a General Plan and the accompanying EIR, many jurisdictions do not regularly update their General Plans to address the current environmental and growth issues facing their community.[56]

As Professor Olshansky noted, CEQA fills these gaps.[57] The cost of an EIR is significantly lower than the cost of a General Plan Update.[58] And unlike a General Plan, which the jurisdiction must finance from its general fund, the project applicant pays most of the costs of an EIR.[59] For cash-strapped jurisdictions—particularly in the wake of Proposition 13, which reduces the amount of property taxes that stay within local jurisdictions[60]—the EIR is a more economically feasible way of considering environmental effects.[61] EIRs are very effective tools to analyze project-specific impacts, such as an impact on a historic resource or a protected species. But many environmental effects

50. *Id.* at 25.

51. *Id.*

52. *See* Robert B. Olshansky, *The California Environmental Quality Act and Local Planning*, 62 J. OF THE AM. PLANNING ASS'N. 313, 317–18 (1996).

53. CAL. GOV'T CODE §§ 65300, 65302(g)(7) (West 2017); *see* STATE OF CAL. GENERAL PLAN GUIDELINES 10 (2003) ("The California Supreme Court has called the general plan the 'constitution' for future development.").

54. SEE GOV'T § 65300.5.

55. *Id.* § 65302. The General Plan is comprised of seven elements: land use, open space, noise, circulation, housing, conservation, and safety. *See id*. The Housing Element, which details how the jurisdiction will satisfy its allocation of the regional housing need, is the only element that must be updated according to a planning schedule. *Id*.

56. *See* Olshansky, *supra* note 52, at 325.

57. *Id.* at 317.

58. *Id.* at 319–20. In 1996, the average cost of an EIR was $38,214. The average cost of a General Plan was $208,000.

59. *Id.*

60. Passed as a voter initiative in 1978, Proposition 13 amended the California Constitution to freezing property tax values at 1976 levels and limited tax increases at a maximum of 2 percent per annum. *See* CAL. CONST. art. XIIIA, §§ 1(a), 2(a). This has led to a sharp decline in the revenue local governments receive from property tax revenue. LEGISLATIVE ANALYST'S OFFICE, COMMON CLAIMS ABOUT PROPOSITION 13, at 2 (2016).

61. *See* Olshansky, *supra* note 52, at 320.

are cumulative in that they are not traceable to a single project. Traffic, for example, is a regional issue stemming from historic patterns of land use that prioritized separation of uses and disinvestment in public transportation. An updated General Plan is the best equipped solution for traffic issues because it can set forth the region's plan to invest in transit infrastructure and promote mixed uses and housing near jobs. Meanwhile, an EIR can address how a project contributes to traffic—perhaps by adding additional VMT—but it does nothing to solve that regional problem. Instead, it forces a single project to bear the costs of the region's poor decision making. Unfortunately, instead of promoting long-term planning, CEQA often "burden[s] a single project with all of a region's problems"—a nearly impossible undertaking.[62]

CEQA also plays a similar role where there are lapses in regulation.[63] CEQA's procedural framework is sufficiently flexible to mitigate environmental problems that the law is slower to address. For example, though regions are just now beginning to conduct comprehensive long-term planning around sea level rise,[64] individual jurisdictions have been applying sea level rise mitigations on a project-by-project basis through CEQA for many years.[65] As discussed further in Part III.A, the purpose of BAAQMD receptor thresholds was also to plug a regulatory hole.

B. Public Participation

In addition to procedural requirements, CEQA has strict notice provisions that enable the public to participate in every major phase of review. These notice requirements are particularly demanding for an EIR. Immediately after determining that an EIR is necessary, the lead agency must issue a Notice of Preparation.[66] After posting this notice, the agency begins work on the Draft EIR. The agency must then issue notice and post the Draft EIR for public review for at least thirty days.[67] During this period, the public submits comments about the agency's findings. The lead agency must review and

62. *See id.* at 317.

63. *See id.*

64. *See generally* CAL. NAT. RES. AGENCY, SAFEGUARDING CALIFORNIA: REDUCING CLIMATE RISK: AN UPDATE TO THE 2009 CALIFORNIA CLIMATE ADAPTATION STRATEGY (2014); CAL. COASTAL COMM'N, SEA LEVEL RISE POLICY GUIDANCE (2015); CITY & CTY. OF SAN FRANCISCO, SAN FRANCISCO SEA LEVEL RISE ACTION PLAN (2016); CITY OF CARLSBAD, SEA LEVEL RISE VULNERABILITY ASSESSMENT (2016).

65. *See, e.g.,* Ballona Wetlands Land Trust v. City of Los Angeles, 134 Cal. Rptr. 3d 194, 205–06 (Cal. Ct. App. 2011) (discussing whether the EIR for a mixed-use development in Los Angeles adequately addressed impacts of sea level rise); OFFICE OF CMTY. INV. & INFRASTRUCTURE ET AL., DRAFT SUBSEQUENT ENVIRONMENTAL IMPACT REPORT: EVENT CENTER AND MIXED-USE DEVELOPMENT AT MISSION BAY BLOCKS 29–32, at 5.9-12 to 5.9-13 (2015), http://www.gswevent center.com/Draft_SEIR_and_Appendices/Vol_2_GSW_MB_DSEIR.pdf (discussing the impacts of sea level rise on the future Golden State Warriors stadium).

66. CAL. CODE REGS., tit. 14, § 15082 (2017).

67. *Id.* § 15105.

prepare a written response to all comments received during this period.[68] The agency then incorporates these responses into the Final EIR, which it recirculates to the public.[69] Within five days of certifying the Final EIR, the agency will file a public Notice of Determination with the county clerk,[70] which triggers the statute of limitations to bring suit.[71]

Although public participation is the democratic cornerstone of CEQA, many critics argue that it actually prevents much-needed housing and infrastructure from being built.[72] And while the Office of Planning and Research promulgates CEQA guidelines for implementation, no state agency substantively oversees CEQA.[73] Thus, like NEPA, citizen suits are the sole enforcement mechanism to ensure a lead agency's compliance.

Recent years have seen an increase in literature dissecting the role of CEQA and environmental review in housing production.[74] Seizing on the link between CEQA litigation and infill housing production, one study found that 80 percent of all CEQA litigation in the past 15 years targeted infill development.[75] While scholars have criticized this report for its overly inclusive definition of infill development,[76] legal defensibility of the Final EIR or Negative Declaration has historically been a top priority for the lead agency and developer.[77]

Developers are concerned with legal defensibility because CEQA lawsuits are so easy to file. Filing fees are relatively inexpensive, and courts limit proceedings to the administrative record, which obviates the need for a lengthy discovery process.[78] Moreover, unlike NEPA, CEQA allows plaintiffs to more easily satisfy standing requirements.[79] In fact, the California Supreme Court

68. *Id.* § 15088.

69. *Id.* §§ 15088, 15132.

70. CAL. PUB. RES. CODE § 21152(a) (West 2017).

71. *Id.* § 21167.

72. *See* TAYLOR, *supra* note 20, at 18.

73. PUB. RES. § 21083.

74. *See* TAYLOR, *supra* note 20, at 18; THE WHITE HOUSE, HOUSING DEVELOPMENT TOOLKIT 7 (2016), https://www.whitehouse.gov/sites/whitehouse.gov/files/images/Housing_Development_Toolkit%20f.2.pdf.

75. JENNIFER HERNANDEZ ET AL., HOLLAND & KNIGHT, IN THE NAME OF THE ENVIRONMENT 8, 12 (2016), https://www.hklaw.com/files/Uploads/Documents/Alerts/Environment/InfillHousingCEQALawsuits.pdf. This study is novel in its analysis of all CEQA lawsuits that have been filed within the past fifteen years. Prior studies relied on published court opinions, which comprise only 5 percent of all filed CEQA lawsuits. *Id*. at 8.

76. *See* Sean B. Hecht, *Anti-CEQA Lobbyists Turn to Empirical Analysis, but Are Their Conclusions Sound?,* LEGAL PLANET (Sept. 28, 2015), http://legal-planet.org/2015/09/28/anti-ceqa-lobbyists-turn-to-empirical-analysis-but-are-their-conclusions-sound/.

77. *See* BARBOUR & TEITZ, *supra* note 47, at 11.

78. *See* HERNANDEZ ET AL., *supra* note 75, at 20.

79. In *Save the Plastic Bag Coalition v. City of Manhattan Beach*, the California Supreme Court refused to apply the federal "zone of interests" test for CEQA litigation. 254 P.3d 1005, 1012–13 (Cal. 2011). Limiting standing under CEQA has been proposed as a way to reduce the proliferation of CEQA litigation. *See* Eric Biber, *Could Standing Save CEQA?* LEGAL PLANET (Apr. 9, 2012) http://legal-planet.org/2012/04/09/could-standing-save-ceqa/.

has held that CEQA's "zone of interests" is broader than NEPA's which only includes the physical environment.[80] Instead, parties whose business interests are "adversely affected by governmental action" have standing to file suit.[81]

In addition to simply creating more litigation, this economic harm standing creates a faulty enforcement mechanism. A recent study found that labor unions and business competitors file 10 percent of all CEQA suits.[82] Even assuming that business petitioners are leveraging valid environmental concerns, those concerns are only a bargaining chip for the ultimate goal—a Project Labor Agreement for a renewable energy project or a moratorium on an infrastructure project that threatens a strip mining company's operations.[83] Indeed, once the project proponent capitulates to the opponent's demands in exchange for withdrawing the suit, there is no one to enforce the underlying defects.

In the worst-case scenario, these business-minded competitors are merely exploiting ambiguity in existing law or raising highly technical arguments. This exploitation has led to the "paper tiger" or "'bullet-proof' EIRs."[84] Consequently, detractors accuse agencies of substituting quantity for quality in environmental documents to prevent litigation.[85]

Litigation is not entirely a bad thing where it forces agencies to more closely scrutinize environmental impacts. In many cases, citizen suits actually do hold lead agencies accountable and protect the environment.[86] This litigation does suggest, however, that thorough environmental review has significant costs for the lead agencies and developers who must defend the environmental determination. In Part III, I return to whether these costs are sufficiently offset by CEQA's results. This Note now turns to the *CBIA* decision and how litigation costs and benefits played out in the context of the receptor thresholds.

80. *Save the Plastic Bag Coalition*, 254 P.3d at 1012 n.3; *see also* Metro. Edison Co. v. People Against Nuclear Energy, 460 U.S. 766, 772 (1983) (holding that NEPA's zone of interests extends only to "the physical environment—the world around us, so to speak.").

81. *Save the Plastic Bag Coalition*, 254 P.3d at 1015.

82. *See* HERNANDEZ ET AL., *supra* note 75, at 23.

83. *See id*. at 24.

84. *See* BARBOUR & TEITZ, *supra* note 47, at 15.

85. *See* Karkkainen, *supra* note 24, at 917–18.

86. CEQA success stories are numerous. CEQA citizen suits have protected vanishing marshes, prevented the construction of a hazardous waste incinerator near a residential community in East Los Angeles, and preserved historic farmland. For more discussion of these stories, see generally PLANNING & CONSERVATION LEAGUE FOUND., EVERYDAY HEROES PROTECT THE AIR WE BREATHE, THE WATER WE DRINK, AND THE NATURAL AREAS WE PRIZE: THIRTY-FIVE YEARS OF THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (2005), http://www.ecovote.org/imx/ceqa_report.pdf.

II. *CBIA V. BAAQMD*

In 2009, BAAQMD proposed new thresholds of significance for project-related effects on air quality.[87] While the proposed 2009 guidelines contained new thresholds of significance for the project's operational and construction-related emissions, the guidelines were unique in that they also assessed the health impact of existing emissions of fine particulate matter on sensitive use receptors (the "receptor thresholds").[88]

Within the nine Bay Area counties, BAAQMD is charged with achieving the National Ambient Air Quality Standards.[89] In this capacity, BAAQMD issues permits to stationary sources that emit into the atmosphere.[90] When BAAQMD has discretion over a permit issuance, it acts as the lead agency in conducting the CEQA process.[91] Residential development in the Bay Area, however, does not require a BAAQMD permit.[92] For these projects, BAAQMD acts as a responsible or commenting agency.[93] Typically BAAQMD reviews the environmental documents to assess the adequacy of the air quality analysis against their adopted thresholds.[94] Lead agencies, like local planning departments, may also choose to adopt BAAQMD's CEQA thresholds.[95]

BAAQMD adopted the receptor thresholds in response to an existing gap in air quality regulation. The Clean Air Act subjects stationary sources to permitting requirements and sets technology-based standards for mobile sources of emissions.[96] Traditionally in the land-use context, compliance with this regulatory scheme has served as a proxy for public health.[97] But in California today, motor vehicles are the largest emitters of PM 2.5,[98] which is "by far the most harmful air pollutant in the [San Francisco Bay Area Air Basin] in terms of the associated impact on public health."[99] The existing

87. BAY AREA AIR QUALITY MGMT. DIST., CALIFORNIA ENVIRONMENTAL QUALITY ACT GUIDELINES: AIR QUALITY 2-1 (2009), http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/final_draft_baaqmd_ceqa_guidelines_november_12_2009.pdf?la=en.

88. Sensitive use receptors include the future inhabitants of residential buildings, schools, and daycares. *See id.* at 2-5, 5-8.

89. CAL. HEALTH & SAFETY CODE §§ 40000, 40200, 40233 (West 2017). National Ambient Air Quality Standards are air quality standards designed to protect human health and public welfare from certain criteria pollutants. 42 U.S.C. § 7409(b)(1)–(2) (2012). States must achieve the National Ambient Air Quality Standards through state implementation plans. § 7407.

90. *See* BAY AREA AIR QUALITY MGMT. DIST., *supra* note 87, at 1-1.

91. *See id.*

92. *See* Bay Area Air Quality Management District's Answering Brief at 6, Cal. Bldg. Indus. Ass'n v. Bay Area Air Quality Mgmt. Dist., 362 P.3d 792 (Cal. 2015) (No. S213478).

93. *See id.*

94. *See id.* at 7.

95. *Id.* at 8.

96. *See* 42 U.S.C. §§7411(b)(1)(B), 7521(a)(1) (2012).

97. Rajiv Bhatia & Aaron Wernham, *Integrating Human Health into Environmental Impact Assessment: An Unrealized Opportunity for Environmental Health and Justice*, 116 ENVTL. HEALTH PERSPECTIVES 991, 993 (2008).

98. *See* BAY AREA AIR QUALITY MGMT. DIST., *supra* note 87, at 5-2.

99. *See id.* at 5-2.

regulatory system cannot command reductions in VMT, which are increasing faster than the population is growing.[100] While California awaits the achievements in VMT reductions from legislation like SB 375 and AB 32, the receptor thresholds aim to mitigate the health impacts of the associated emissions.[101]

Under the receptor thresholds, agencies are instructed to evaluate the existing cumulative emissions from all sources within 1000 feet of the proposed project.[102] If these cumulative emissions either exceed 0.8 micrograms of PM 2.5 or expose receptors to an increased cancer risk greater than 100 in a million, then the project has a significant effect on the environment.[103] Additionally, any single source within 1000 feet that exposes receptors to an increased cancer risk of ten in a million would trigger a significance finding.[104]

At the general and specific plan level, BAAQMD suggested overlay zones[105] to separate the receptor from PM 2.5 sources.[106] As part of the receptor thresholds, land-use diagrams must incorporate a minimum 500-foot buffer zone between the receptor and freeways or major roadways.[107] The diagram must also contain overlay zones that separate the receptor from known or planned single source emitters like dry cleaning facilities or factories.[108]

During the public comment period, various groups including the Association of Bay Area Governments[109] and CBIA[110] expressed concerns that these thresholds would trigger an EIR for an infill project that would have otherwise been approved under an Initial Study or a section 15332 infill exemption. Additionally, if adopted by lead agencies, the 500-foot buffer zone between freeways and housing would make development in close proximity to transit-rich corridors impossible.[111] This central contention—one that weighed on the *CBIA* court—was that by making the approval process for infill

100. *See* LEGISLATIVE ANALYST'S OFFICE, CALIFORNIA TRAVELS: FINANCING OUR TRANSPORTATION 6 (2007), http://www.lao.ca.gov/2007/ca_travels/ca_travels_012607.pdf.

101. *See* BAY AREA AIR QUALITY MGMT. DIST., *supra* note 87, at 1-1.

102. *Id.*

103. *Id.* at 2-5.

104. *Id.*

105. An overlay zone is a zoning district that sits atop a previously established zoning district. Overlay zones typically establish additional or stricter standards than the underlying zoning district. *See Property Topics and Concepts*, AM. PLANNING ASS'N, https://www.planning.org/divisions/planningandlaw/propertytopics.htm#Overlay (last visited Apr. 22, 2017).

106. BAY AREA AIR QUALITY MGMT. DIST., *supra* note 87, at 2-9.

107. *Id.*

108. *Id.*

109. *See* Association of Bay Area Governments, Public Review Comments & Responses on the CEQA Guidelines Update and Revised Thresholds (2009), http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/all-letters_responses-to-comments.pdf?la=en.

110. *See id.*

111. *See id.* at 2 ("Given the inherent challenges of infill development . . . it is likely that adding another layer of complexity with these new toxic air contaminant standards will lead developers to look to places where development is easier.").

development more onerous, the receptor thresholds would in fact thwart the smart growth objectives of SB 375.

Despite these objections, BAAQMD adopted the thresholds in 2010. Shortly thereafter, CBIA filed a petition for writ of mandamus challenging their validity on various claims, including the question of whether CEQA requires a reverse analysis.[112] Due in part to the fact that CBIA mounted a facial rather than an as-applied challenge to the receptor thresholds, both the superior court and the court of appeal declined to reach the reverse CEQA question. In 2013, the California Supreme Court granted certiorari to resolve this issue.

For the California Supreme Court, the central issue was whether a significant "environmental effect" under CEQA includes the effects of the environment on the future users. Prior case law had termed this CEQA "in reverse."[113] While the California Supreme Court found the term "misleading and inapt,"[114] the court ultimately held that CEQA does not operate in reverse except in two limited circumstances: (1) where the legislature has explicitly stated that an analysis of an environmental effect on the project is required,[115] and (2) where the proposed project will worsen existing adverse environmental conditions.[116]

In reaching its conclusion, the court relied primarily on the plain meaning of the CEQA statute. The court noted that a project has a significant effect when it has the potential to "degrade the quality of the environment."[117] Section 21060.5 defines the environment as the "physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, [and] noise . . . ."[118] This definition encompasses the adverse effects on people that arise from the project's impact on the land, air, water, minerals, flora, and fauna; however, it does not encompass the impacts of the existing physical environment on future residents.[119] In the end, although the court agreed with BAAQMD that CEQA

112. Cal. Bldg. Indus. Ass'n v. Bay Area Air Quality Mgmt. Dist., 161 Cal. Rptr. 3d 128, 135–36 (Cal. Ct. App. 2013).

113. *See* Baird v. Cty. of Contra Costa, 38 Cal. Rptr. 2d 93, 94, 96 n.2 (Cal. Ct. App. 1995) (holding that analysis of the effect of existing hazardous contamination on a rehabilitation center was impermissible under CEQA); S. Orange Cty. Wastewater Auth. v. City of Dana Point, 127 Cal. Rptr. 3d 636, 646 (Cal. Ct. App. 2011) (holding that analysis of the impact of odors on a project was impermissible under CEQA); Ballona Wetlands Land Trust v. City of Los Angeles, 134 Cal. Rptr. 3d 194, 206–07 (Cal. Ct. App. 2011) ("[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project.").

114. *See* Cal. Bldg. Indus. Ass'n. v. Bay Area Air Quality Mgmt. Dist., 362 P.3d 792, 800 n.11 (Cal. 2015).

115. *See id.* at 804.

116. *See id.* at 801–02.

117. *See id.* at 801 (quoting CAL. PUB. RES. CODE § 21083(b)(1) (West 2017)).

118. *See id.* (quoting PUB. RES. § 21060.5).

119. *See id.*

is clearly concerned with public health,[120] it could not locate a provision in the statute "that cuts against the specificity of that definition."[121]

Despite the apparent plain meaning of the statute, the court did have to reconcile its interpretation of "environment" with several conflicting statutes and guidelines. Various sections of the Public Resources Code require a reverse analysis when siting certain types of projects.[122] For example, a public agency cannot certify an EIR or negative declaration for a school located on a contaminated site or in proximity to certain toxic air contaminants unless the sponsor commits to certain mitigation measures.[123] Similarly, if an agency wants to certify an environmental document for a project located within two miles of an airport, it must analyze the effects of noise and aviation safety on the proposed project.[124] While BAAQMD maintained that these provisions express the legislature's overall concern with reverse environmental effects, the court did not agree.[125] Instead, "these statutes [are] specific exceptions to CEQA's general rule" rather than illustrative of it.[126]

A second hurdle was section 15126.2 of the CEQA Guidelines, which requires agencies to analyze "any significant environmental effects the project might cause by bringing development and people into the area affected."[127] Such an analysis could include the environmental effects of locating a development on an earthquake fault line or in an area where the project could exacerbate existing hazards like floodplains, coastlines, and wildfires.[128] By requiring agencies to analyze the impacts of attracting people to an area with existing environmental hazards, this guideline endorsed a reverse analysis.[129]

Yet the court affirmed the validity of the guideline only to the extent that it requires analysis of how the project might exacerbate existing environmental hazards.[130] For example, locating a project in a wildfire hazard area or coastline flood area could exacerbate existing hazards by giving a fire more area to burn or further eroding the coastline. But siting development atop an earthquake fault line does not increase the underlying risk of earthquakes and thus would not warrant environmental review of them. The former example "still focuses on the project's impact on the environment" whereas the latter example deviates too far from the text of the statute.[131] Accordingly, the court

120. Section 21083(b)(3) of the Public Resources Code states that where "the environmental effects of a project will cause substantial adverse effects on human beings," the proposed project has a significant effect on the environment. PUB. RES. § 21083(b)(3).

121. *See Cal. Bldg. Indus. Ass'n*., 362 P.3d at 801.

122. *See id.* at 803–04.

123. PUB. RES. § 21151.8.

124. *Id*. § 21096.

125. *See Cal. Bldg. Indus. Ass'n*, 362 P.3d at 804.

126. *Id.*

127. *Id.* at 801–02.

128. *See id.* at 802.

129. *See id.* at 799.

130. *Id.* at 801–02.

131. *Id.* at 802 (emphasis omitted).

found that the language in the guideline was "clearly erroneous and unauthorized under CEQA."[132]

In relying on the plain meaning of the statute, the California Supreme Court appeared to ignore many of the practical implications of the reverse CEQA issue that the parties and their amici highlighted. Writing in support of BAAQMD, the California Chapter of the American Planning Association emphasized that reverse CEQA has been a longstanding practice in California and is essential to effective planning for the public health.[133] Similarly, South Coast Air Quality Management District asserted that the mitigation of toxic air contaminants is consistent with CEQA's concern for public health.[134] In contrast, amici for CBIA seized on the impediments CEQA poses to urban land development and affordable housing in particular.[135]

The opinion ultimately attempts to balance these dueling perspectives. Perhaps acknowledging the widespread planning practices that already incorporate reverse environmental effects into CEQA review, the court indicated in a footnote that nothing in the CEQA statute prohibits an agency from voluntarily considering these reverse effects.[136] Similarly, in a nod to CBIA's constituents, the court cautioned against expanding CEQA beyond what a fair reading of the statute would require. Given the "costly nature of the analysis required under CEQA . . . such an expansion would tend to complicate a variety of residential . . . projects."[137]

But in attempting to balance these interests, does the court actually leave jurisdictions with any teeth to address these important health impacts? Even if a lead agency voluntarily chooses to conduct a reverse CEQA analysis, after *CBIA* a lead agency cannot legally require mitigations unless the reverse effect falls into one of the two exceptions. The answer to this problem, as BAAQMD proposed on remand to the court of appeal, lies in the police power of the state.[138]

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132. *See id.* at 803. The court invalidated the following language of section 15126.2(a) of the CEQA Guidelines: "[A]n EIR on a subdivision astride an active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision. The subdivision would have the effect of attracting people to the location and exposing them to the hazards found there."

133. Brief for Cal. Chapter of the Am. Planning Ass'n & Cal. Ass'n of Envlt. Prof'l as Amici Curiae Supporting Appellant, *supra* note 19, at 4, 9.

134. Brief for South Coast Air Quality Mgmt. Dist. as Amicus Curiae in Support of Defendant and Appellant at 13–15, Cal. Bldg. Indus. Ass'n v. Bay Area Air Quality Mgmt. Dist., 362 P.3d 792 (Cal. 2015) (No. S213478).

135. Brief for Ctr. for Creative Land Recycling et al. as Amici Curiae Supporting Respondent, *supra* note 35, at 13–14.

136. *See Cal. Bldg. Indus. Ass'n*, 362 P.3d at 801 n.12.

137. See *id.* at 801.

138. *See* Cal. Bldg. Indus. Ass'n v. Bay Area Air Quality Mgmt. Dist., 207 Cal. Rptr. 3d 911, 913–14 (Cal. Ct. App. 2016). On remand from the California Supreme Court, BAAQMD claimed that the receptor thresholds are a valid exercise of a locality's police powers. *See id*. The court of appeal ultimately declined to hear the issue, holding it was not properly raised. *Id*. at 914.

While the Federal Constitution considers local governments "political subdivisions" of the state,[139] the California Constitution empowers all cities to pass "all local, police, sanitary, and other ordinances," provided that local regulation does not conflict with state law.[140] By virtue of this police power, cities are able to control local matters like land use and public health.[141] And while the California legislature adopts the Building Standards Code, which applies to the entire state, local amendments do not necessarily conflict with state law. Indeed, state law explicitly permits cities to make reasonable amendments to the California Building Standards Code based on local conditions.[142] These provisions enable local governments to regulate indoor air quality through building code and health and safety code legislation.

Before turning to how cities currently exercise these police powers in the area of indoor air quality, I turn now to a discussion of how agencies across the state incorporated the receptor thresholds into CEQA review. This discussion will fill in some of the gaps of the *CBIA* opinion as well as further develop the advantages and disadvantages that attach to the CEQA process. Understanding how agencies implemented the receptor thresholds will also provide a baseline to gauge the effectiveness of police power regulation.

III. EVALUATING THE USE OF RECEPTOR THRESHOLDS IN CEQA

Because *CBIA* presented a facial challenge to the thresholds, the opinion does not reveal how the thresholds functioned in practice. Part III aims to answer two basic questions that test the underlying assumptions of the parties. First, as BAAQMD asserted, did the information-forcing procedures of CEQA lead to protective health outcomes? Second, as CBIA predicted, did the receptor thresholds actually pose a substantial obstacle to infill production? Since it is difficult to understand how the thresholds informed a project applicant's design or siting decisions ex ante, this Part will focus on the threat of litigation as the primary obstacle to project completion.

A. Health Outcomes

This Part draws on sample infill projects funded under the AHSC program to conduct a mini case study of the receptor thresholds. Because these projects embody smart growth goals, they also approximate the effectiveness of the thresholds in protecting infill residents from harmful air pollutants.

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139. *See* Hunter v. City of Pittsburgh, 207 U.S. 161, 178 (1907).

140. CAL. CONST. art XI, § 7.

141. *See* City of Riverside v. Inland Empire Patients Health & Wellness Ctr., 300 P.3d 494, 499 (Cal. 2013) ("Land use regulation in California historically has been a function of local government under the grant of police power contained in article XI, section 7 . . . .") (quoting Big Creek Lumber Co. v. Cty. of Santa Cruz, 38 Cal.4th 1139, 1151 (2006)); LAWRENCE O. GOSTIN, PUBLIC HEALTH LAW 165 (rev. 2d ed. 2008).

142. *See* CAL. HEALTH & SAFETY CODE § 17958.8 (West 2017).

California's comprehensive climate change legislation, beginning with the Global Warming Solutions Act of 2006 (AB 32), led to the creation of the AHSC program.[143] AB 32 prioritized the use of market-based tools to reduce California's greenhouse gas emissions.[144] One such tool is the California Air Resources Board cap-and-trade program.[145] Under this program, California Air Resources Board auctions greenhouse gas emission allowances to stationary source emitters.[146] The proceeds from these auctions capitalize the Greenhouse Gas Reduction Fund, which provides financial support to projects that meet the goals of AB 32 and SB 375.[147]

California has committed 20 percent of the Greenhouse Gas Reduction Fund annually to develop and administer the AHSC program.[148] This program aims to "reduce greenhouse gas emissions . . . [by] support[ing] infill and compact development."[149] To obtain AHSC funding, developers must submit applications to the Department of Housing and Community Development during set funding cycles.[150] The department ranks the applications according to the project's projected contribution to greenhouse gas reductions as well as financial feasibility.[151] In exchange for program compliance and a promise to deed restrict the units to low-income households, AHSC provides developers with deferred low-interest loans.[152]

Advocates feared the receptor thresholds would make AHSC projects infeasible for several reasons. First, to qualify for AHSC funding, the project must be located in a high quality transit corridor.[153] These corridors are typically sites of high pollution due to converging freeways and bus and rail lines.[154] Second, AHSC funds can only be used for projects that include an affordable housing component for low-income people.[155] Priority is given to developments in environmentally disadvantaged communities.[156] These

143. *See id.* §§ 38500–38599.

144. *See id.* §§ 38550, 38562(c).

145. *See* CAL. CODE REGS. tit. 7, § 95801 (2017).

146. *Id.* § 95910.

147. *Id.* § 95870.

148. HEALTH & SAFETY § 39719(b)(1)(C).

149. *See* CAL. PUB. RES. CODE § 75210 (West 2017).

150. CAL. STRATEGIC GROWTH COUNCIL, AFFORDABLE HOUSING AND SUSTAINABLE COMMUNITIES PROGRAM: 2015-2016 PROGRAM GUIDELINES 5 (2015), http://sgc.ca.gov/pdf/ADOPTED_FINAL_15-16_AHSC_Guidelines_with_QM.pdf.

151. *Id.* at 32–33.

152. *See id.* at 16.

153. *Id.* at 8.

154. Catalina Garzón, *New Housing Near Highways Threatens Community Health*, 19 RACE, POVERTY & THE ENV'T 78, 79 (2012).

155. *See* CAL. STRATEGIC GROWTH COUNCIL, *supra* note 150, at 8.

156. *See id.* at 30. The California Environment Protection Agency (CalEPA) has identified the census tracts in California with the top 25 percent of CalEnviroScreen 2.0 scores as Disadvantaged Communities. CalEnviroScreen is a statewide survey that "evaluat[es] multiple pollution sources in a community while accounting for a community's vulnerability to pollution's adverse effects." OFFICE OF ENVTL. HEALTH HAZARD ASSESSMENT, CALIFORNIA COMMUNITIES ENVIRONMENTAL HEALTH

communities are the most vulnerable to health impacts because low-income people have the least market power to choose where they live. Historically, low-income populations in high-cost regions have had few housing choices "besides those made affordable by their proximity to freeways . . . and other polluting areas."[157] Thus, protecting low-income people from pollution-induced illnesses should be a priority for these projects.

To qualify for AHSC funding, a project must already be entitled in its local jurisdiction, meaning that each project has already gone through CEQA review. Because Air Quality Management Districts (AQMDs) across the state also issued similar receptor threshold guidelines,[158] the AHSC program provides a glimpse into how the thresholds played out across California pre-*CBIA*. The extent to which jurisdictions require mitigation measures like air filtration systems, green walls, or buffer zones will test the ability of CEQA to address these human health impacts.

In the 2014–2015 funding cycle, the Department of Housing and Community Development funded 28 out of 147 proposals.[159] Of these twenty-seven projects, seven residential developments were located within 1000 feet of a major freeway or roadway.[160] Thus, under BAAQMD's receptor thresholds, the lead agency would have had to analyze the health impacts of the outdoor air on the future residents. In all but one development, where the receptor thresholds were in place at the time of entitlement, the lead agency incorporated air quality receptor thresholds into CEQA review. Cumulatively, these seven projects resulted in three EIRs, two MNDs, and two categorical infill exemptions.

Three of these projects located in Southern California exceeded the significance threshold for PM 2.5. Lead agencies uniformly required that the developer install air filtration systems with Minimum Efficiency Reporting

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SCREENING TOOL VERSION 2.0, at 1 (2014), https://oehha.ca.gov/media/CES20FinalReportUpdateOct2014.pdf.

157. *See* Garzon, *supra* note 154, at 81.

158. *See, e.g.*, S. COAST AIR QUALITY MGMT. DIST., GUIDANCE DOCUMENT FOR ADDRESSING AIR QUALITY ISSUES IN GENERAL PLANS AND LOCAL PLANNING 2-1 (2005), http://www.aqmd.gov/docs/default-source/planning/air-quality-guidance/complete-guidance-document.pdf; SACRAMENTO METRO. AIR QUALITY MGMT. DIST., CEQA GUIDANCE 5-1(2009) (on file with author).

159. *See* CAL. STRATEGIC GROWTH COUNCIL, AFFORDABLE HOUSING AND SUSTAINABLE COMMUNITIES PROGRAM – FY 2014–15 NOFA 1–3 (2016), http://www.sgc.ca.gov/pdf/AHSC%20Data%201415%20Affordable%20Housing%20Devt.pdf. AHSC also funds transit investment projects, which are not included in the twenty-eight funded projects. *See Affordable Housing and Sustainable Communities Program*, CAL. STRATEGIC GROWTH COUNCIL, http://www.sgc.ca.gov/Grant-Programs/AHSC-Program.html#goals (last visited Apr. 18, 2017). The three projects that were not awarded because of a regional cap were later funded in the NOFA cycle from excess Greenhouse Gas Reduction Fund proceeds. *See* CAL. STRATEGIC GROWTH COUNCIL, AHSC FALL 2015 SCORING AND RECOMMENDATIONS (2015), http://sgc.ca.gov/pdf/Item7_Attachment_1Fall_2015NOFARecommendedAwards121715.pdf.

160. *See infra* Figure 1.

Value (MERV) filters.[161] These agencies also imposed other design requirements like minimizing the number of operable windows, orienting intake air ducts away from the pollution source, and constructing a vegetated wall to buffer the units from the freeway.[162]

Interestingly, four projects within BAAQMD's jurisdiction did not exceed significance thresholds despite their close proximity to a trafficked roadway. For instance, air quality modeling in the Miraflores Senior Apartments EIR found the cancer risk associated with PM 2.5 just below the significance threshold despite the proximity to the most trafficked roadway in the Bay Area.[163] As a result, that project was not required to provide enhanced ventilation or other mitigation measures to provide cleaner air to the units. Another development in Emeryville within 500 feet of the highly-trafficked Interstate 580 did not even consider air quality when issuing an infill exemption from CEQA,[164] despite the fact that air quality is a sub-factor of 1 of the 5 statutory requirements for a categorical exemption.[165]

If the lead agency for these projects had been engaged in the general plan process, BAAQMD's 500-foot buffer zone requirement would have precluded the siting of three out of four of these Bay Area projects. But because review occurred at the project level, the buffer zone requirement did not apply. Nevertheless, the different outcomes are striking. If proximity to congested freeways is hazardous to the point that agencies should not be placing residential uses there, how could these projects be approved without air filtration mitigations?

161. *See* CITY OF LOS ANGELES, PROPOSED MITIGATED NEGATIVE DECLARATION FOR 536 W. 127TH STREET 1 (2014), http://cityplanning.lacity.org/staffrpt/mnd/ENV-2014-2372.pdf (presenting combined environmental review results for 127th Street and El Segundo Family Apartments); CITY OF NAT'L CITY, WESTSIDE SPECIFIC PLAN: FINAL ENVIRONMENTAL IMPACT REPORT AND MITIGATION MONITORING AND REPORTING PROGRAM 3-27 (2010), http://www.nationalcityca.gov/Home/ShowDocument?id=12881. A subsection of the Westside Specific Plan EIR analyzed the Westside transit-oriented development project. *See id*. at 3-48 to 3-49.

162. *See* CITY OF LOS ANGELES, *supra* note 161, at 1; CITY OF NAT'L CITY, *supra* note 161, at 3-27.

163. See CITY OF RICHMOND, *supra* note 1, at 2-8 to 2-10 (discussing CEQA review and mitigation measures for the Miraflores project that do not include indoor air quality mitigations); *See* METRO. TRANSP. COMM'N, *supra* note 11 (finding that I-80 is the second most congested highway in the Bay Area).

164. *See* PLANNING COMM'N OF EMERYVILLE, RESOLUTION CPC NO. UPDR14-001 (2015) (on file with author) (adopted Jan. 25, 2015; discussing the exemption from CEQA review for the 3706 San Pablo project).

165. *See* CAL. CODE REGS., tit. 14, § 15332 (2017).

Figure 1: AHSC Projects Within 1000 feet of a Freeway[166]

Project	City	County	Nearest Highway	Distance (ft)	CEQA Review	Mitigation
El Segundo Family Apartments	Los Angeles	Los Angeles	I-110	457	MND	Yes – ventilation system, MERV 11 filtration, buffer, minimized window operations
127th Street Apartments	Los Angeles	Los Angeles	I-110	230	MND	Yes – ventilation system, MERV 11 filtration, buffer, minimized window operations
3706 San Pablo	Emeryville	Alameda	I-580 CA-123	500 260	§ 15322 Infill Exemption	No
Civic Center 14 TOD Apartments	Oakland	Alameda	I-980	660	§ 15322 Infill Exemption	No[167]
El Cerrito Senior Mixed Use	El Cerrito	Contra Costa	CA-123	100	EIR	No
Miraflores Senior Housing	Richmond	Contra Costa	I-80	220	EIR	No
Westside Infill TOD	National City	San Diego	I-5	1000	EIR	Yes –ventilation, filtration, buffer, minimized window operation

166. For the distance between the twenty-eight projects funded under AHSC during the 2014–15 funding cycle, *see supra* text accompanying note 159. The nearest highway was measured using Google Maps. *See* GOOGLE MAPS, https://maps.google.com (last visited Apr. 18, 2017). For the seven projects located within 1000 feet of a highway, information on the CEQA review process and mitigation measures was compiled. *See* CITY OF LOS ANGELES, *supra* note 161, at 1 (discussing combined CEQA review and mitigation measures for the El Segundo and 127th Street projects); PLANNING COMM'N OF EMERYVILLE, RESOLUTION CPC NO. UPDR14-001 (2015) (on file with author) (adopted Jan. 25, 2015; discussing the exemption from CEQA review for the 3706 San Pablo project); E-mail from Maurice Brenyah-Addow, Planner, Planning & Bldg. Dep't, City of Oakland, to Giulia Gualco-Nelson (Oct. 7, 2016, 3:23 PST) (on file with author) (discussing the exemption from CEQA review for the Civic Center 14 project); CITY OF EL CERRITO, EDEN HOUSING SAN PABLO MIXED USE APARTMENT PROJECT: DRAFT ENVIRONMENTAL IMPACT REPORT, at ES-1, ES-4 to ES-5 (2013), http://www.el-cerrito.org/DocumentCenter/View/2917 (discussing CEQA review and mitigation measures for the El Cerrito Senior Mixed Use project); CITY OF RICHMOND, *supra* note 1, at 2-8 to 2-10 (discussing CEQA review and mitigation measures for the Miraflores project); CITY OF NAT'L CITY, *supra* note 161, at 3-27, 3-48 to 3-49 (discussing CEQA review and mitigation measures for the Westside Infill project).

167. Environmental review for Civic Center 14 TOD was completed in 2006, prior to BAAQMD's adoption of the receptor thresholds.

These results reveal some of the shortcomings of the CEQA process highlighted in Part I. Though the sample is not large enough to raise issues of intra-jurisdictional inconsistency, it shows that CEQA might not be the best tool to create uniform health outcomes across the state because it overlooks a key determinant of pollution exposure—proximity.[168] Studies show that living close to highly trafficked roadways exposes people to more particulate matter, which greatly increases mortality, cancer, and asthma rates.[169] A recent study also suggests a link between residential highway proximity and dementia.[170]

CEQA does not always protect these areas closest to pollution hot spots because it relies entirely on project-by-project modeling to determine whether to impose mitigations. The first limitation to this approach is the availability of local data. Emission estimates are not exact measurements of emissions as they exist at that location, but rather calculations based on certain factors and assumptions.[171] Second, even assuming the availability of local air quality data, varieties in background conditions and data sets can make the analysis inaccurate.[172] For example, a lead agency might assume that because a project is downwind of a freeway, the wind will disperse much of the particulate matter. Yet background wind conditions can change with other weather conditions.[173] Moreover, future changes to the built environment itself can

168. *See* Yifang Zhu et al., *Concentration and Size Distribution of Ultrafine Particles Near a Major Highway*, 52 J. OF THE AIR & WASTE MGMT. ASS'N. 1032, 1032, 1038 (2002) (finding that "ultrafine particle size . . . and its . . . concentration dropped dramatically with increasing distance" from Interstate 405 in Los Angeles).

169. *See* Wen Qi Gan et al., *Changes in Residential Proximity to Road Traffic and the Risk of Death from Coronary Heart Disease*, 21 EPIDEMIOLOGY 642, 642 (2010) ("Living close to major roadways was associated with increased risk of coronary mortality, whereas moving away from major roadways was associated with decreased risk."); Doug Brugge et al., *Near-Highway Pollutants in Motor Vehicle Exhaust: A Review of Epidemiologic Evidence of Cardiac and Pulmonary Health Risks*, 6 ENVTL. HEALTH 23, 23 (2007) ("[H]ealth studies show elevated risk for development of asthma and reduced lung function in children who live near major highways. Studies of particulate matter (PM) that show associations with cardiac and pulmonary mortality also . . . suggest[] localized [exposure] sources that likely include major highways."). However, a 2010 analysis concluded that evidence of an association between proximity of residence to a highway and disease were "suggestive[,] but not sufficient" to infer causation, because of limited reliable data and the failure of studies to control for variables. HEALTH EFFECTS INST., TRAFFIC-RELATED AIR POLLUTION: A CRITICAL REVIEW OF THE LITERATURE ON EMISSION, EXPOSURE, AND HEALTH EFFECTS x (2010), https://www.healtheffects.org/system/files/SR17Traffic%20Review.pdf.

170. Hong Chen et al., *Living Near Major Roads and the Incidence of Dementia, Parkinson's Disease, and Multiple Sclerosis: A Population-Based Cohort Study*, 389 LANCET 718, 718 (2017).

171. *See e.g.*, *CHAPIS Emissions Maps*, CAL. ENVTL. PROT. BD., AIR RES. BD., https://www.arb.ca.gov/ch/chapis1/chapis1.htm (last visited Apr. 18, 2017) ("Emission estimates are based on overall average conditions (not any specific day), and are generally based on a limited number of source tests, available emission factors, or material balance calculations for similar types of sources. The exact locations of the releases may not be reflected in detail, nor the types of stacks or other release characteristics that influence how the emissions may affect downwind areas.").

172. The US Environmental Protection Agency refers to this as "[r]educible uncertainties," which consist primarily of uncertainties in the values of known conditions, errors in measured concentrations of emissions, and inadequate model formulation. *See* 40 C.F.R. pt. 51, app. W, § 9.1.1(b) (2017).

173. *See* Fei Chen et al., *A Numerical Study of Interactions Between Surface Forcing and Sea-Breeze Circulations and Their Effects on Stagnation in the Greater Houston Area*, 116 J. OF

influence wind tunnels and the dispersion of pollutants.[174] Studies have also shown that air quality models are less reliable when estimating concentrations that occur at a particular time and site.[175] An approach that relies entirely on modeling will not be as inclusive of areas that experience the most congestion during peak traffic times or areas that experience fluctuating wind and weather conditions. The disparities between the AHSC developments in Alameda and Contra Costa Counties versus the outcomes in Los Angeles and San Diego reveal the limitations of a pure modeling approach.

This case study is also interesting because it shows that contrary to CBIA and its amici, the receptor thresholds did not make this subset of affordable infill projects infeasible. First, the receptor thresholds did not trigger EIRs in all instances. Despite proximity to a congested freeway, two projects received categorical exemptions and two received mitigated negative declarations. Second, for two of the projects that went through the EIR process, the lead agency did not even impose mitigations. This suggests that even though most jurisdictions incorporated similar receptor thresholds, the receptors did not necessarily plug the regulatory hole as BAAQMD had hoped.

B. Barriers to Production

For developers in California, project feasibility is not just the ability to obtain regulatory approvals, but also the ability to withstand project challenges. As highlighted in CBIA's amicus brief, developers feared that the expansion of CEQA's scope to include reverse effects would lead to more frequent litigation across the board, not just litigation over the receptor thresholds.[176] The cost and time burden of defending these suits would be an additional burden to infill development.

The judicial record does not indicate that any of these seven AHSC projects were challenged under the receptor thresholds.[177] Though they were not litigated, the receptor thresholds were the subject of several comment letters for project EIRs. Responding to the circulation of the Draft EIR for Miraflores Senior Apartments, counsel for the Carpenter's Local 152 submitted five pages of comments regarding the lead agency's failure to analyze and mitigate the air

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GEOPHYSICAL RES. 1 (2011) (finding that as hot temperatures heat urban pavement, the heat changes wind patterns, which causes stagnant pollutants to build up in the air).

174. *See* C. G. Collier, *The Impact of Urban Areas on Weather*, 132 Q. J. OF THE METEOROLOGICAL SOC'Y 1, 4 (2006) (noting that large buildings increase surface drag and wake turbulence, and decrease wind speed).

175. *See* 40 C.F.R. pt. 51, app. W, § 9.1.2(b).

176. *See* Brief for Ctr. for Creative Land Recycling et al. as Amici Curiae Supporting Respondent, *supra* note 35, at 19.

177. To determine if any of the AHSC projects were litigated, I searched Westlaw and Lexis records of CEQA lawsuits against the entitlement jurisdiction after the date of entitlement. This search only includes challenges that resulted in a court order or opinion and will not include instances where a complaint was filed and subsequently settled.

quality impacts of I-80.[178] Comments focused on the type of modeling utilized by the agency as well as attacking the agency's methodology.[179] The agency responded substantively to Local 152's comments; however, the agency ultimately did not adopt the mitigation measures that Local 152 suggested in their letter.[180] Local 152 never filed suit to challenge the project,[181] but the failure of this public comment mechanism reinforces observations that legitimate environmental concerns can fall through the cracks when leveraged by special interests.

With regard to receptor threshold litigation outside the AHSC context, a quick search in Westlaw reinforces CBIA's assertion that the receptor thresholds interfere with the building blocks of SB 375.[182] Litigation over receptor thresholds interfered with the smart growth goals of SB 375 in three key ways. First, petitioners used the receptor thresholds to challenge the development of dense, mixed-use infill communities. This scenario occurred in a challenge to a mixed-use master plan area anchored by Walmart in Atascadero[183] and the redevelopment of a former railroad yard into a mixed-use district in Sacramento.[184] Perhaps these challenges truly aimed to remedy defective air quality analyses rather than dispute the selection of Walmart, a retailer that does not use unionized labor; however, in both instances, the court of appeal found that the EIRs were not defective.[185]

Second, petitioners used receptor thresholds to challenge infrastructure investments to accommodate new residential and commercial growth, as seen in the challenges to the implementation of a new bicycle plan in San Francisco[186] and the extension of a roadway to serve new mixed-use development in Sunnyvale.[187] In the San Francisco case, the court of appeal found the EIR legally sufficient.[188] Though it noted the "future regional transportation benefits" of the proposed project, the court of appeal ultimately

178. *See* CITY OF RICHMOND, *supra* note 1, at 5-76 to 5-80.

179. *See id.*

180. *See id.* at 3-8 to 3-11.

181. To challenge the project approval, Local 152 must have filed suit within thirty days of December 22, 2009—the date the Richmond City Council adopted the NOD. *See* CAL. PUB. RES. CODE § 21167(c) (West 2017). The Contra Costa Superior Court docket shows that Local 152 never filed suit within the statute of limitations. *See Online Case Information*, SUPERIOR COURT OF CAL., CTY OF CONTRA COSTA, http://icms.cc-courts.org/tellme/ (last visited Apr. 18, 2017).

182. This search does not include complaints that were filed and subsequently settled.

183. Save Atascadero v. City of Atascadero, No. B250126, 2014 WL 3105199, at *1 (Cal. Ct. App. July 8, 2014) (unpublished).

184. Castro v. City of Sacramento, No. C064091, 2015 WL 5915264, at *9–12 (Cal. Ct. App. Oct. 9, 2015) (unpublished).

185. *See Save Atascadero*, 2014 WL 3105199, at *6; *Castro*, 2015 WL 5915264 at *11–12.

186. Anderson v. City & Cty. of San Francisco, No. A129910, 2013 WL 144915, at *26 (Cal. Ct. App. Jan. 14, 2013) (unpublished).

187. *See* Sunnyvale W. Neighborhood Ass'n v. City of Sunnyvale City Council, 119 Cal. Rptr. 3d 481, 487–88, 495, 511–12 (Cal. Ct. App. 2010).

188. *See Anderson*, 2013 WL 144915 at *45–46.

found the Sunnyvale EIR deficient because the City used the wrong baseline to measure project impacts.[189]

Finally, the petitioners used receptor thresholds to challenge the implementation of SB 375 through San Diego's Sustainable Communities Strategy.[190] Sustainable Community Strategies are state-mandated regional plans that "set forth a forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, will reduce the greenhouse gas emissions from automobiles."[191] While this lawsuit is perhaps the most literal expression of the conflict between SB 375 and the receptor thresholds, it also exemplifies situations where CEQA lawsuits are most needed. As a long-term regional plan that links land use and transit, a Sustainable Community Strategy better addresses cumulative air quality impacts than a project-level EIR because it can actually change those long-term impacts. Here, this particular lawsuit may be keeping governmental decision makers accountable to ensure that long-term plans address the health impacts of smart growth.[192]

The petitioners also used receptor thresholds to challenge projects outside of California's investment in smart growth. Not only did these projects include usual CEQA targets like a big box Target store in Chula Vista,[193] but they also included more unusual ones, such as a hazardous waste disposal in Kings County,[194] the renovation of a diesel truck expressway serving the Los Angeles and Long Beach ports,[195] and the renovation of an athletic field in San Francisco.[196] Nevertheless, many of these suits evoke the tension between the receptor thresholds and the goals of reducing VMTs through smart growth. They also reveal where public input and litigation is most effective—at the general plan level—and where it can be inefficient—the individual project level.

In sum, this qualitative look at projects funded under the AHSC program suggests that CBIA's central arguments were not entirely misplaced. Though the receptor thresholds did not make infill development next to freeways impossible, the thresholds certainly added to the scope of environmental

189. *See Sunnyvale W. Neighborhood Ass'n*, 119 Cal. Rptr. 3d at 512–13.

190. Cleveland Nat'l Forest Found. v. San Diego Ass'n of Gov'ts, 180 Cal. Rptr. 3d 548, 570–74 (Cal Ct. App. 2014).

191. *See* CAL. GOV'T CODE § 65080(b)(2)(B) (West 2017).

192. Though the court of appeal sided with the petitioners, the California Supreme Court has granted review on an issue unrelated to the receptor thresholds. *See* Cleveland Nat'l Forest Found. v. San Diego Ass'n of Gov'ts, 343 P.3d 903, 903 (Cal. 2015).

193. Citizens for Responsible Equitable Envtl. Dev. v. City of Chula Vista, 127 Cal. Rptr. 3d 435, 439–40 (Cal. Ct. App. 2011).

194. El Pueblo Para El Aire y Aqua Limpio v. Kings Cty. Bd. of Supervisors, No. F062297, 2012 WL 2559652, at *1 (Cal. Ct. App. July 3, 2012) (unpublished).

195. Nat. Res. Def. Council v. Cal. Dep't of Transp., No. B228048, 2011 WL 5843449, at *11 (Cal. Ct. App. Nov. 22, 2011) (unpublished).

196. Sierra Club v. City & Cty. of San Francisco, No. A140891, 2015 WL 5724809, at *5 (Cal. Ct. App. Sept. 30, 2015) (unpublished).

review. The potential for health protections across the state did not offset these costs because these protections were not consistently realized. Moreover, litigation shows that the receptor thresholds did in fact interfere with smart growth policy objectives of SB 375 as CBIA predicted. But just because CEQA may not be the best tool to address deteriorated air quality, jurisdictions should not abdicate responsibility. Part IV discusses San Francisco's approach to regulating indoor air quality, which could ultimately serve as a model for regulating other reverse effects post-*CBIA*.

IV. COMMAND-AND-CONTROL APPROACH

While the public often has difficulty predicting the outcomes of project-level CEQA review, command-and-control regulation creates uniform standards. At the local level, command-and-control regulation is exercised through the locality's police powers.[197] Common forms of this type of regulation include public health and safety codes, building standards, and fire codes. San Francisco's Article 38 is an example of a command-and-control regulatory approach to project-level air quality mitigations. It provides an important alternative to CEQA and a model for mitigating "reverse" environmental impacts going forward.

A. San Francisco's Article 38

Article 38 of San Francisco's Health Code fills the gap in "[e]xisting regulatory control measures," which are "often [too] focused on new stationary sources of emissions . . . to address all local sources of exposure or disparities in exposure" to emissions.[198] The evolution of San Francisco's Article 38 evidences the advantages to health and administrability of a uniform command-and-control approach to indoor air regulation.

In enacting Article 38, the San Francisco Board of Supervisors attempted to balance the need for "significant residential development . . . in urban infill sites" with the cost of "potentially increasing these residents' exposure to air pollutants and their associated health risks."[199] Prior to Article 38's passage, San Francisco had finalized its Eastern Neighborhoods Plan Area—a long-term plan that rezoned many freeway adjacent sites for residential use.[200] To mitigate the health effects, Article 38 "impos[es] an enhanced ventilation requirement for all urban infill sensitive use development within the Air Pollutant Exposure Zone (APEZ)."[201]

In its original form, Article 38 resembled the threshold receptor system under CEQA. Like the receptor thresholds, proximity to major highways or

197. *See* CAL. CONST. art XI, § 7.
198. SAN FRANCISCO, CAL., HEALTH CODE art. 38, § 3802(f) (2014).
199. *See* SAN FRANCISCO, CAL., HEALTH CODE art. 38, § 3802(c) (2008).
200. *See* Bhatia & Wernham, *supra* note 97, at 994.
201. *See* SAN FRANCISCO, CAL., HEALTH CODE art. 38, § 3803(a) (2014).

roadways was the sole criteria that determined whether the project fell within the APEZ. The original APEZ map, pictured in Figure 3, included all sites adjacent to freeways and major roadways in the City.[202] Projects within the zone had to model the air quality and submit the results to the Department of Public Health (DPH).[203]

If the amount of PM 2.5 exceeded 0.2 µg/m3, Article 38 gave developers two mitigation options.[204] First, the developer could alter the site plan to orient the intake air ducts or windows away from the roadway.[205] If this design alternative did not reduce the PM 2.5 exposure below the significance threshold, then the project had to incorporate an enhanced ventilation system to reduce the PM 2.5 concentration inside the units by 80 percent.[206]

Responding to input from the scientific community, BAAQMD, local community groups, and developers, the Board of Supervisors amended the law in 2014. Since its original enactment, scientific evidence of the deleterious health outcomes of exposure to fine particulate matter had increased.[207] During this time period, San Francisco had also broken ground on the Hunters Point Shipyard Redevelopment Area—home to San Francisco's only federal superfund site and nearly a quarter of San Francisco's African American population.[208] Local community groups drew attention to the health effects of pollution that disproportionately impact this community of color.[209] Finally, developers wanted a more transparent process that would notify them at the outset whether the enhanced ventilation system applied.[210]

The changes to Article 38 emphasize the need for greater uniformity, attention to health-based assessment, increased streamlining with other city agencies, and mandatory disclosure and monitoring of the ventilation systems. While the original APEZ map focused solely on proximity to freeways, the new map uses air quality modeling and health data to create the APEZ.[211] At least once every five years, DPH models the air quality throughout the City.[212] Any areas where PM 2.5 exceeds 10 µg/m3 or where the estimated cumulative

202. *See* SAN FRANCISCO, CAL., HEALTH CODE art. 38, § 3803(f)–(g) (2008).
203. *Id.* §§ 3804, 3806(a).
204. *See id.* § 3807(a).
205. *Id.* § 3807(a)(1).
206. *Id.* § 3807(a)(2)–(b).
207. SAN FRANCISCO, CAL., HEALTH CODE art. 38, § 3802(a)–(c) (2014).
208. For a report that traces the history of environmental racism and injustice in the Shipyard, see generally BAYVIEW HUNTERS POINT MOTHERS ENVTL. HEALTH & JUST. COMM. ET AL., POLLUTION, HEALTH, ENVIRONMENTAL RACISM AND INJUSTICE: A TOXIC INVENTORY OF BAYVIEW HUNTERS POINT, SAN FRANCISCO (2004), http://greenaction.org/wp-content/uploads/2012/08/TheStateofthe Environment090204Final.pdf.
209. *See Land Use and Economic Development Committee* (S.F. BD. OF SUPERVISORS video agenda Oct. 6, 2014), http://sanfrancisco.granicus.com/MediaPlayer.php?view_id=12&clip_id=21115& meta_id=406399 (noting that southeastern neighborhoods in San Francisco suffer disproportionately from traffic and construction related emissions).
210. *Id.*
211. SAN FRANCISCO, CAL., HEALTH CODE art. 38, § 3806(a) (2014).
212. *Id.* § 3806(b).

excess risk of cancer resulting from lifetime exposure is greater than 100 in a million is automatically within the APEZ.[213]

In addition to these general thresholds of significance, DPH sets more stringent levels for Health Vulnerable Locations.[214] These locations have the highest percentage of health vulnerable residents, based on criteria such as statewide hospitalization and emergency room visit records for air pollution-related conditions.[215] In San Francisco, three of the five zip codes[216] in the worst quintile of Bay Area health vulnerability scores are primarily composed of qualified census tracts.[217] In these areas, PM 2.5 greater than 9 µg/m3 or an estimated cumulative excess risk of cancer of greater than 90 in a million triggers inclusion in the APEZ map.[218] Figure 4 places these Qualified Census Districts and the APEZ maps side by side, showing that the most economically disadvantaged neighborhoods often bear the brunt of poor air quality in San Francisco.

Figure 2: PM 2.5 triggers in Health Vulnerable Locations and San Francisco Generally

	San Francisco	Health Vulnerable Locations
PM 2.5 exposure	10 µg/m3	9 µg/m3
Excess life time risk of cancer	100 in a million	90 in a million

The new APEZ map automatically includes any area within 500 feet of a freeway, although many of these areas are likely already captured in the air quality modeling assessment.[219] Rather than categorically proscribing development within 500 feet of a freeway, this parameter balances both the need for development near freeways with the need to protect residents' health. As shown in Figure 3 below, these amendments expanded the APEZ in the eastern and southeastern parts of the city, which is home to most of the major freeways and health vulnerable locations.

213. *Id.* § 3806(a).

214. *See id.* § 3806(a).

215. *Id.* § 3809(d)(1). These health risks include Chronic Obstructive Pulmonary Disease (COPD), Myocardial Infarction (MI, Heart Attack), Cardiovascular Hospital Admissions (less MI), and Asthma. *See id.*

216. *See id.* These zip codes are 94102 (Tenderloin), 94103 (South of Market), 94105 (Transbay), 94124 (Hunter's Point), and 94130 (Treasure Island). *Id.*

217. For a map of Qualified Census Tracts, see *2016 and 2017 Small DDAs and QCTs,* U.S. DEP'T OF HOUS. & URBAN DEV., https://www.huduser.gov/portal/sadda/sadda_qct.html (last visited Apr. 23, 2017). The term "qualified census tract" means any census tract either in which 50 percent or more of the households have an income which is less than 60 percent of the area median gross income for such year or which has a poverty rate of at least 25 percent. *See* 26 U.S.C. § 42(d)(5)(B)(ii)(I) (2012).

218. SAN FRANCISCO, CAL., HEALTH CODE art. 38, § 3806(a) (2014).

219. *Id.*

Figure 3: 2008 APEZ Map (L); 2014 APEZ Map (R) [220]

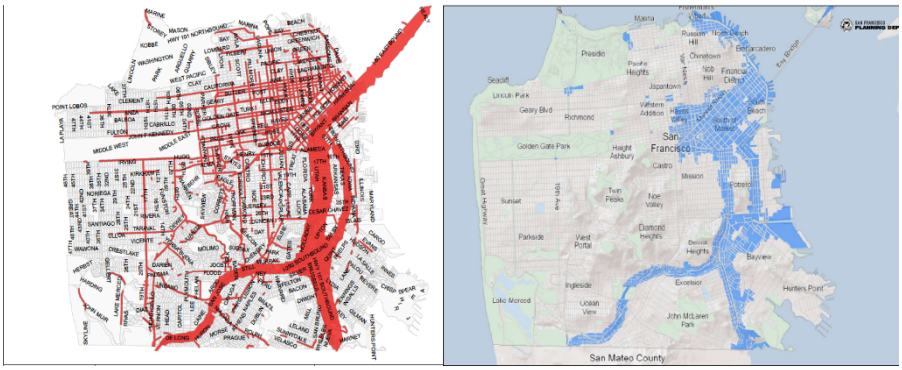
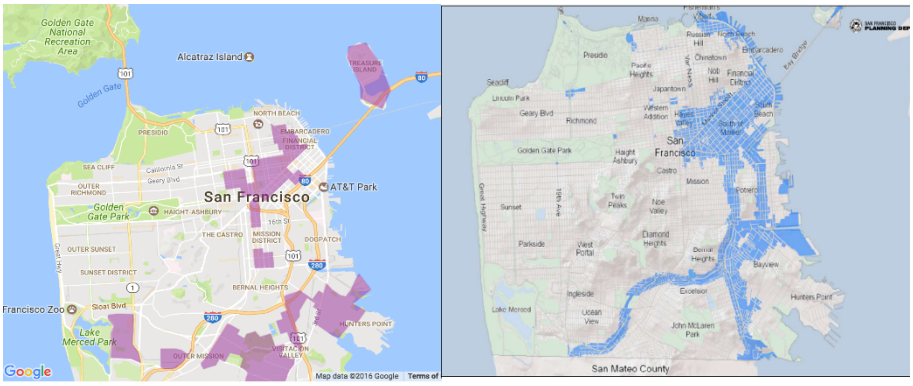


Figure 4: 2017 San Francisco Qualified Census Districts (L); 2014 APEZ Map (R) [221]



Under the amended Article 38, if a development is located within the APEZ, the developer must mitigate the impacts of poor air quality.[222] This means the developer must install an enhanced ventilation system capable of achieving protection from PM 2.5 equivalent to the MERV 13 standard.[223]

220. 2008 Pollutant Exposure Map taken from SAN FRANCISCO PLANNING DEP'T, NEW MUNICIPAL CODE CHANGE SUMMARY 2 (2009), http://www.sfplanning.org/ftp/files/legislative_changes/new_code_summaries/080934_Air_Quality_for_Urban_Infill.pdf. 2014 Pollutant Exposure Zone Map taken from SAN FRANCISCO PLANNING DEP'T, AIR POLLUTANT EXPOSURE ZONE MAP 1 (2014), https://www.sfdph.org/dph/files/EHSdocs/AirQuality/AirPollutantExposureZoneMap.pdf.

221. 2017 San Francisco Qualified Census Tracts taken from U.S. DEP'T OF HOUS. & URBAN DEV., *supra* note 217.

222. HEALTH, art. 38, § 3807(a)–(c).

223. MERV 13 standard means that the system is capable of preventing 70-98 percent of the fine particulate matter from reaching the inside of the units. The higher the MERV rating, the finer range of particles the system can capture. *See generally* NAT'L AIR FILTRATION ASS'N, UNDERSTANDING MERV (2014), http://www.nafahq.org/wp-content/uploads/52-2-Brochure-November-2014-BW.pdf.

In enacting Article 38, the San Francisco Board of Supervisors also amended the San Francisco Building Code to make the ventilation requirements consistent.[224] This consistency provides front- and back-end assurance that the developer implements ventilation standards. The Department of Building Inspections will not issue a final building permit until DPH certifies that the development complies with the ordinance.[225] And because the ventilation requirements are codified in the Building Code, the Department of Building Inspections cannot issue a certificate of occupancy until the ventilation system is inspected along with all the other systems in the building.[226] Even after obtaining the certificate, the owner of the building must maintain the enhanced ventilation system or face nuisance penalties.[227]

Article 38 also requires disclosure to renters and buyers.[228] At a minimum, the developer must notify residents that the building is located in an area with substantial concentrations of air pollutants.[229] The disclosure must show residents how to properly use the ventilation system to mitigate the effects of these pollutants.[230] Examples include disclosing the times when traffic is highest and mechanical ventilation is necessary and the times when traffic loads are lighter and window ventilation can suffice.

B. Evaluating Article 38

Though they protect more projects than CEQA, regulatory programs like Article 38 are complex and require agency expertise for effective implementation. Tracing both the benefits and costs of Article 38, this Part concludes that health and predictability benefits outweigh the ongoing costs to local government. By utilizing creative avenues, jurisdictions can also offset some of these costs as well as maximize the value of their investment in healthy infill communities.

1. Benefits of Article 38

Because building and health and safety codes apply uniformly to new construction, regulatory programs like Article 38 can confer more consistent health protections to more projects than would fall within CEQA's scope. Article 38 achieves these outcomes while providing a modicum of certainty for developers and relieving some of the demands of the entitlement process. This Part discusses each benefit in turn.

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224. *See* SAN FRANCISCO, CAL., BLDG. STANDARDS CODE ch. 12, § 1203 (2016).
225. SAN FRANCISCO, CAL., HEALTH CODE art. 38, § 3807(d) (2014).
226. *See id.* § 3807(d). Before occupants can move into the building, the Department of Building Inspections must issue a certificate of occupancy. *See* BLDG. STANDARDS, ch. 1A, § 109A.
227. HEALTH art. 38, § 3810(c).
228. *Id.* § 3809(d)(6)(B).
229. *Id.*
230. *Id.*

Consistent health protections are the first advantage of Article 38, which tells developers exactly how to mitigate the effects of poor air quality. If the project falls within the APEZ, it must have an enhanced ventilation system that removes 80 percent of the particulate matter from the outside air. CEQA does not require enhanced ventilation systems; instead, developers can manipulate project characteristics—installing a green wall as a buffer or orienting intake air ducts away from freeways—to reduce the exposure levels to less than significant. These site-specific mitigations, while important, do not confer the same benefits on residents as installing a system that removes 80 percent of the fine particulate matter from the air.[231]

Second, Article 38 protects more projects than CEQA. Whereas proximity of 1000 feet or less to a freeway triggers receptor threshold review under CEQA, citywide air quality modeling determines whether a project falls within San Francisco's APEZ. Therefore, projects located farther than 1000 feet from a freeway can still benefit from enhanced ventilation if the air quality is poor. For instance, 222 Beale, an AHSC project in San Francisco, is located 1200 feet from I-80—the same interstate adjacent to Miraflores Senior Apartments in Richmond.[232] Because the project is outside the 1000-foot zone, a lead agency would not have analyzed this project under CEQA; however, based on air quality models, DPH included that neighborhood within the APEZ. Paradoxically, the future residents of Miraflores who live next door to I-80 will not get the benefit of enhanced ventilation while the residents of 222 Beale who live much farther from I-80 will.[233]

In addition to protecting projects beyond the 1000-foot buffer, Article 38 also protects the projects closest to the freeways. Because any project within 500 feet of a freeway is automatically within the APEZ, all new development within this zone will have enhanced filtration. Requiring enhanced ventilation for these freeway-adjacent projects reflects research that shows particulate matter concentration is highest within 300 to 500 feet of a freeway.[234] Under CEQA, projects in this zone like the Miraflores development would have to submit air quality modeling before the agency determines mitigations.

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231. *See* CAL. ENVTL. PROT., AIR RES. BD., STATUS OF RESEARCH ON POTENTIAL CONCEPTS TO REDUCE EXPOSURE TO NEARBY TRAFFIC POLLUTION 14 (2012), https://www.arb.ca.gov/research/health/traff-eff/research%20status%20-reducing%20exposure%20to%20traffic%20pollution.pdf (finding that the benefits for site-specific mitigations are less clear than the benefits of enhanced filtration).

232. *See* CAL. STRATEGIC GROWTH COUNCIL, *supra* note 159, at 1; GOOGLE MAPS, https://maps.google.com (last visited Apr. 18, 2017). This project was not included in the AHSC case study because it was not within 1000 feet of a highway.

233. The segment of I-80 in San Francisco is actually more congested during the afternoon commute than the segment of I-80 in Richmond, but unlike its Richmond counterpart, it is not continuously congested from early morning to commute hours. *See* METRO. TRANSP. COMM'N, *supra* note 11.

234. Zhu et al., *supra* note 168, at 1032.

Third, by decoupling this aspect of environmental health from the entitlement process, Article 38 also gives developers more certainty. Developers can quantify the cost of the performance standard upfront, rather than wait for an Initial Study or an EIR to tell them what to do. This approach also reduces the scope of potential CEQA litigation, which in turn removes regulatory barriers from the entitlement process—what urban economists have called the "zoning tax."[235] In addition to reduction of these "soft" costs, Article 38 likely does not add insurmountable "hard" construction costs. Given that mechanical ventilation is already a code requirement,[236] the underlying mechanical system already exists. Article 38's filtered ventilation and the associated maintenance simply build off of that existing system.[237] Moreover, if developers advertise the benefits of these systems, living in close proximity to freeways may become more desirable.

Finally, Article 38 also holds developers to a higher standard than CEQA. Even if a project is developable as of right, meaning the project will not undergo CEQA review, the developer must still meet the standards set forth in the building and health codes. If Governor Brown's push to increase by right development incentives succeeds,[238] more future development projects will fall outside the scope of CEQA review. And if that scenario comes to fruition, jurisdictions need regulatory tools like Article 38 that will continue to protect their residents' health.

2. Costs of Article 38

Article 38 is not without its costs—both fiscal and political. To ensure Article 38 is working efficiently, local governments must gather up-to-date air quality data in addition to bearing ongoing administrative costs. San Francisco's approach shows that permit fees and collaboration with the larger AQMD can minimize these expenses, but effective implementation nevertheless requires ongoing investment. Modifications to the existing Article 38 program could also improve ventilation in older housing stock.

Scholars have criticized command-and-control regulation like Article 38 for its under- and over-inclusiveness, which can lead to inefficiencies.[239] As Professor Karkkainen notes, "[r]ules of this type . . . are often costly to

235. Urban economists have referred to the gap between what a unit of housing sells for and its total construction and land costs as the "zoning tax." *See generally* Edward Glaeser, et al., *Why Is Manhattan So Expensive? Regulation and the Rise in House Prices*, 48 J.L. & ECON. 331 (2005). In San Francisco, for example, this gap ranges from 33-50 percent. *See id.* at 335.

236. *See* California Building Standards Code, CAL. CODE REGS., tit. 24, pt. 4, § 605.1.3 (2013) ("A mechanical exhaust system, supply system, or combination thereof shall be installed for each dwelling unit to provide whole building ventilation with outdoor air each hour . . . .").

237. *See* CAL. AIR RES. BD., *supra* note 231, at 4.

238. *See* BROWN, *supra* note 22.

239. *See* Bradley C. Karkkainen, *Information-Forcing Environmental Regulation*, 33 FLA. ST. U. L. REV. 861, 862 (2006).

implement, inflexible, insensitive to local variations in the economic costs and environmental benefits associated with achieving a specified level of environmental performance, and, in some circumstances, they may stifle innovation."[240] If air quality continues to worsen as traffic congestion increases, these mitigations are powerless to protect residents' health. On the contrary, if altering land-use patterns combined with the Low Carbon Fuel Standard[241] and increased ownership of electric cars dramatically improves air quality, regulations like Article 38 will burden projects with inefficient costs. Under CEQA, air quality is modeled on a project-by-project basis, which reflects real time changes in air quality. In this way, CEQA can respond faster to rapidly changing environmental conditions. To realize similar benefits through command-and-control regulation, DPH should update the APEZ maps more frequently than every five years to accurately reflect current conditions.[242]

But collecting up-to-date information and administering the program raises critical cost issues for cash strapped local governments. As previously mentioned, lead agencies frequently recoup most of the costs of an EIR or Initial Studies from the project applicant. How will they recoup the costs of Article 38 administration? In most jurisdictions, building permit fees are a percentage of total construction value.[243] The higher the total construction value of the building, the more the developer will remit to the local government in permit fees. In theory, the addition of an enhanced ventilation system adds both cost to the developer as well as value to the building. Thus, the cost of a building permit could marginally increase, which would support the added burden to the mechanical plan check process.[244] SF DPH also charges a flat fee of $984 plus hourly consultation fees to review a developer's Article 38 compliance.[245] This fee minimizes impact to the city's general fund.[246]

240. *Id.*

241. Promulgated pursuant to AB 32, the Low Carbon Fuel Standard is designed to encourage the use of cleaner low-carbon fuels in California, encourage the production of those fuels, and therefore, reduce greenhouse gas emissions. The California Air Resources Board sets a lifecycle greenhouse gas value per fuel source. Over time, this value will decline, which will require fuel producers to reduce the carbon intensity of their fuels, which will then reduce GHG emissions from the transportation sector. *See* CAL. CODE REGS. tit. 17, §§ 95480–95497 (2017).

242. Ideally a jurisdiction should use locally placed air quality monitors to determine the APEZ. New technologies are making these monitors more affordable, portable and user friendly. *See* Kate Galbraith, *Experimenting at Home with Air Quality Monitors*, N.Y. TIMES (Apr. 15, 2015), https://www.nytimes.com/2015/04/16/business/experimenting-at-home-with-air-quality-monitors.html?_r=0.

243. *See* California Building Standards Code, CAL. CODE REGS., tit. 24, pt. 2, § 501 (2016).

244. Although developers frequently under-value the total cost of construction to minimize permitting fees. *See* Glaeser et al., *supra* note 235, at 345 n.22.

245. *See* SAN FRANCISCO, CAL., HEALTH CODE art. 38, § 3811(a) (2014).

246. Article 38 is one of at least twelve Environmental Health Programs in San Francisco. In FY 2016-17, these programs generated $1,587,484 in revenue, pulling only $199,461 from the General Fund to cover all program areas. Unfortunately, it is not possible to verify what percentage of this General Fund money is attributable to Article 38. *See* Memorandum from Greg Wagner, Chief Financial Officer,

However, even with these fee programs in place, a local government will likely not recoup all its costs.

Admittedly, San Francisco is a "superstar" city with enough development to support such a program.[247] For jurisdictions without that volume of development, federal code enforcement funds present another potential funding source. Jurisdictions in California that receive Community Development Block Grant funding under the Housing and Community Development Act could potentially leverage some of the eligible enforcement costs.[248] This funding likely will not compensate a jurisdiction for upfront permitting costs, but it could help fund ongoing compliance inspections and spur renovation for older buildings.[249]

AQMDs across the state provide another important resource for these jurisdictions. San Francisco relied on BAAQMD's technical expertise in creating the Article 38 program. In fact, the 2014 amendment was "the end result of a collaborative effort with BAAQMD."[250] BAAQMD also provided much of the data regarding Health Vulnerable Locations.[251] This collaboration between the jurisdiction and the AQMD models the way smaller jurisdictions can overcome the technical barriers to implementation.

Ultimately, regulatory systems like Article 38 are creatures of political will; however, as the voluntary implementation of the receptor thresholds shows, local governments possess this will. In fact, lead agencies across the state chose to incorporate the receptor thresholds into CEQA review even

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on FY 2016-17 and 2017-18 Proposed Budget-Second Hearing to President Ed Chow and Honorable Members of the Health Comm. 8.16 (Feb. 11, 2016), https://www.sfdph.org/dph/files/hc/HCAgen/HCAgen2016/Feb%2016/FY16-18-HC-BudgetSummary-2-16-16.pdf.

247. Superstar cities experience somewhat inelastic housing supply coupled with excess demand. A practical implication of this is that people are willing to pay outsize prices to live in superstar cities without commensurate increases in the inherent value of the housing. *See* Joseph Gyourko et al., *Superstar Cities* 169–70 (Nat'l Bureau of Econ. Research, Working Paper No. 12355, 2013).

248. Code enforcement is defined as "a process whereby local governments gain compliance with ordinances and regulations regarding health and housing codes, land use and zoning ordinances, sign standards, and uniform building and fire codes." *See* U.S. DEP'T OF HOUS. & URBAN DEV., USE OF CDBG FUNDS FOR CODE ENFORCEMENT ACTIVITIES 2 (2014), http://portal.hud.gov/hudportal/documents/huddoc?id=14-16cpdn.pdf. While the use of Community Development Block Grant funds for code enforcement is highly controversial and likely not the best use of those funds, I offer this as a gesture towards thinking creatively about how to leverage state and federal funds to promote high quality indoor air environments.

249. Though continued funding of certain Housing and Urban Development programs could be described as uncertain, Secretary Ben Carson has expressed willingness to continue the Community Development Block Grant program although the administration of the program might change. *See* Janine White, *Ben Carson on 5 Big Issues Facing U.S. Cities*, NEXT CITY (Jan. 13, 2017), https://nextcity.org/daily/entry/ben-carson-hud-secretary-hearing-housing-cities.

250. *See* Press Release, City & Cty. of San Francisco, Dep't of Pub. Health, New Article 38 Requirements Now in Effect, at 1 (Dec. 8, 2014), https://www.sfdph.org/dph/files/EHSdocs/AirQuality/Article38DevGuidance.pdf.

251. *See* SAN FRANCISCO, CAL., HEALTH CODE art. 38, § 3809(d)(1) (2014).

though local AQMDs could not require them to do so.[252] These attempts to fill the regulatory hole in SB 375 show local governments' commitment to protecting urban residents from pollution hotspots. Absent cost and technical expertise barriers, jurisdictions that cared about indoor air quality enough to adopt the receptor thresholds will likely explore command-and-control regulations to mitigate the health externalities of infill development.

There is also a cost to doing nothing. Our health care system currently absorbs the costs of poor indoor air quality. The Health Vulnerable locations in San Francisco have the highest rates of hospitalization and mortality from cardiovascular and respiratory-related illnesses.[253] These locations are also home to some of the lowest income people in San Francisco who rely on subsidized health care programs like Medi-Cal.[254] For example, matching census data with 2011 Medi-Cal enrollment data shows that 42 percent of residents in Bay View Hunters Point (94124), 32 percent of residents in the Tenderloin (94102), and 38 percent of residents in South of Market (94103) are enrolled in Medi-Cal.[255] Even if fine particulate matter emissions from vehicles drastically drop, enhanced ventilation can still reduce healthcare costs. For instance, enhanced ventilation prevents common allergens—like pollen and mold—from contaminating indoor air, which can save the health care system $21 billion annually.[256] Though these healthcare savings cannot necessarily be leveraged by a local jurisdiction to offset administration costs, the savings come into play at the state level.

Indeed, state-level action is needed to truly ensure consistent inter-jurisdictional outcomes. Since many jurisdictions have adopted the California Building Standards Code, an amendment to the code could accomplish part of

252. Where BAAQMD does not act as a lead agency, it cannot require the use of its CEQA guidelines; however, most lead agencies chose to adopt those guidelines.

253. *See* HEALTH art. 38, § 3809(d)(1).

254. In San Francisco, for a household to enroll in CalWORKS, they must also apply for Medi-Cal. Thus CalWORKS enrollment and eligibility can serve as a rough approximation for Medi-Cal. *See* Rose Johns, UNIV. OF CAL., BERKELEY, GOLDMAN SCHOOL OF PUB. POLICY & SCH. OF SOC. WELFARE, FAMILIES LIVING ON THE EDGE: A REPORT ON THE ROLE OF CALWORKS FOR LOW-INCOME FAMILIES IN SAN FRANCISCO 2, 5 (2013), http://www.sfhsa.org/4651.htm (explaining the dual CalWORKS and Medi-Cal enrollment process and finding that very low-income families eligible for CalWORKS are more likely to live in the northeastern and southeastern parts of San Francisco); *infra* Part IV.A (finding that the Health Vulnerable Locations in San Francisco are in the northeastern and southeastern parts of the City).

255. *See Preliminary Medi-Cal Enrollment by Zip Code Pivot Table 2011*, CAL. DEP'T OF HEALTH CARE SERVS., http://www.dhcs.ca.gov/dataandstats/statistics/Pages/Medi-Cal_Enrollment_by_Zip_Code.aspx (last visited Apr. 20, 2017); *San Francisco Burden of Disease & Injury Study: Determinants of Health*, HEALTHYSF.ORG, http://www.healthysf.org/bdi/outcomes/zipmap.htm (last visited Apr. 19, 2017). Together, these sources show that Hunter's Point (94124) has 14,072 Medi-Cal enrollees or 42 percent of its residents, Tenderloin (94102) has 9,304 enrollees or 32 percent of its residents, and South of Market (94103) has 8,792 enrollees or 38 percent of its residents.

256. JANET L. GAMBLE ET AL., EPA, REVIEW OF THE IMPACTS OF CLIMATE VARIABILITY AND CHANGE ON AEROALLERGENS AND THEIR ASSOCIATED EFFECTS xv (2008), https://cfpub.epa.gov/ncea/risk/recordisplay.cfm;jsessionid=781190DC79E7C2666380A073789130F3.cfpub?deid=190306&CFID=84537648&CFTOKEN=67527714.

this goal.[257] Since 2009, the California Building Code has required mechanical ventilation in addition to window ventilation for all low-rise residential construction.[258] Originally intended to reduce energy loss related to heating and cooling, this code requirement has the additional benefit of making enhanced ventilation more feasible. The current code already requires filtration systems for hospitals.[259] At a minimum, the state could extend this requirement to residential housing within 500 feet of freeways, which would set a threshold standard for the state. Since building codes are adopted in three-year intervals with the most recent iteration going to effect in 2017, an interim amendment to the California Health and Safety Code could also establish this standard. Cities in California that wish to do more—perhaps by adding a health vulnerability assessment like San Francisco—could then impose requirements above this baseline.[260]

Unfortunately, Article 38 does not address the need for retrofitting housing built before the 2009 code amendments. Multifamily housing built pre-2009 does not have centralized mechanical air systems, which makes installing MERV filtration more difficult and costly. Making these developments safer for residents will require creative solutions and collaboration from both scientists and local health departments. State level action—in the form of legislation or rebate programs—is also needed to spur landlords to undertake these much-needed renovations.

Other jurisdictions in the United States provide some examples of these creative solutions. In partnership with the Department of Housing and Urban Development and the Tufts School of Medicine, the Somerville Housing Authority in Massachusetts installed window-mounted HEPA air filtration units in public housing units directly adjacent to a heavily trafficked interstate.[261] Despite a small sample size, results indicated that the units reduced fine particulate matter by nearly 50 percent.[262] Drawbacks to this approach include equipment noise from the unit (similar to a window-mounted air conditioning

257. *See* CAL. CODE REGS., tit. 24, (2016).

258. *See* California Building Standards Code, CAL. CODE REGS., tit. 24, pt. 4, § 605.1.3 (2013). "A mechanical exhaust system, supply system, or combination thereof shall be installed for each dwelling unit to provide whole building ventilation with outdoor air each hour."

259. *See* California Building Standards Code, CAL. CODE REGS., tit. 24, pt. 4, § 408.2 (2016).

260. Although there could be state law preemption issues if charter cities chose to regulate beyond what the state requires, state legislation could set a floor while authorizing supplementary local legislation. *See* Personal Watercraft Coal. v. Bd. of Supervisors, 122 Cal. Rptr. 2d 425, 438 (2002) (holding that "[t]here can be no implied preemption of an area where state law expressly allows supplementary local legislation").

261. Doug Brugge et al., *In-Home Air Filtration for Improving Cardiovascular Health: Lessons from a CBPR Study in Public Housing*, 7 PROGRESS COMMUNITY HEALTH PARTNERSHIP 49, 50–51 (2013).

262. Pedro Martinez et al., *A Randomized Cross-Over Air Filtration Intervention Trial for Reducing Cardiovascular Health Risks in Residents of Public Housing Near a Highway,* 12 INT'L J. OF ENVTL. RESEARCH & PUB. HEALTH 7814, 7822 (2015).

unit) as well as high electricity costs.[263] A study by the National Oceanic Atmospheric Administration found that sound barriers trap fine particulate matter near the interstate in low wind conditions.[264] And while noise barriers are suitable for ground freeways, they might not be as feasible for the elevated freeways that run through many cities. Researchers have also found that planted vegetation screenings can reduce particulate matter significantly.[265] But given land constraints in urban areas, planting a sufficient number of trees or installing a vegetated screen large enough to absorb the particulate matter might not be possible.[266] Though not as effective as enhanced air ventilation, these mitigations could prove beneficial in less land-constrained areas.

Given both the state-level housing crisis and the transportation sector's contributions to climate change, developing housing in transit corridors near freeways is likely the future of California land use. Jurisdictions have a responsibility to adopt long-term uniform solutions to mitigate the effects of pollution hotspots on the people who will live near these roadways. CEQA's case-by-case approach to project mitigations is appropriate to mitigate a project's effect on park shadow or an effect on the provisions of public services. For these types of impacts, reaching the best outcome requires negotiation, compromise, and balancing—tools that CEQA facilitates. Resources like clean air are too critical to leave to CEQA's sometimes haphazard approach to mitigation. Planners do not rely on CEQA to determine the level of earthquake or fire protection needed; air quality should not be any different. Article 38 efficiently and effectively mitigates health impacts by imposing a uniform mandate commensurate with the overwhelming scientific research that living near freeways harms human health.

CONCLUSION

The boom in infill housing is a welcome alternative to decades of greenfield expansion in California. Though transit-oriented development is a necessary step towards reducing our dependence on cars, California cannot ignore the health consequences that attach to this development pattern—particularly for many of the low-income populations that live near these high emission areas. As Part III.A shows, CEQA is one mechanism to address these externalities—but likely not the most efficient.

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263. Brugge et al., *supra* note 261, at 53.

264. Dennis Finn et al., *Tracer Studies to Characterize the Effects of Roadside Noise Barriers on Near-Road Pollutant Dispersion under Varying Atmospheric Stability Conditions*, 44 ATMOSPHERIC ENV'T 204, 204 (2010).

265. MICAH FULLER ET AL., U.C. DAVIS-CALTRANS, PRACTICAL MITIGATION MEASURES FOR DIESEL PARTICULATE MATTER: NEAR-ROAD VEGETATION BARRIERS 8 (2009), http://www.dot.ca.gov/hq/env/air/research/ucd_aqp/Documents/Mitigation-Measures-Package-Report-5-Micah-v3.pdf.

266. The U.C. Davis study used a tree-planted area of 30 meters by 200 meters, or 6000 square meters. *See id.* This is exponentially larger than the average lot size in most coastal cities.

Instead, San Francisco's implementation of Article 38 shows how a jurisdiction can use a combination of long-term planning and command-and-control regulation to effectively mitigate mobile source air pollution and reverse environmental effects more broadly. By amending its General Plan to allow infill development in freeway-adjacent areas, San Francisco concentrated more people in polluted areas. To mitigate the health impacts of this long-term planning decision, the City then enacted command-and-control ordinance in health and building codes.

Combining planning and command-and-control regulation is a key way states and local governments currently address other reverse environmental effects such as those stemming from earthquakes[267] and hazardous waste.[268] This approach to mitigating reverse effects, which so often directly implicate human health, improves the CEQA process because it provides certainty to all parties. Developers know which projects the law affects, the required standard of mitigation, and the cost. Future residents know that their home will have ventilation systems that protect against mobile source pollution, regardless of whether the project undergoes CEQA review.

Local jurisdictions can also map this method onto other efforts to mitigate reverse environmental effects. Though not a direct issue in the *CBIA* litigation, sea level rise is perhaps the largest reverse environmental impact of our time. Rising tides and sea levels threaten development along California's coasts and bays where three quarters of the population lives.[269] Moreover, in a housing-starved state, these coastal areas are ripe for expansion. For instance, both San Francisco and San Diego are currently redeveloping areas at risk of sea level rise into mixed use and commercial districts.[270] Although developing these areas contradicts much of the state-level planning guidance, which advocates avoiding new development in areas at risk of sea level rise,[271] in some jurisdictions the extreme need for housing tips the scales in the other direction.

Planning for sea level rise has recently begun.[272] In addition to adaptation measures, these plans aim to address where development can happen in sea level rise vulnerable areas and define the long-term infrastructure needed to accommodate this development. This long-term planning must also focus on

267. *See e.g.*, Alquist-Priolo Earthquake Fault Zoning Act, CAL. PUB. RES. CODE §§ 2621–2630 (West 2017).

268. *See e.g.*, CAL. HEALTH & SAFETY CODE §§ 25100–25259 (West 2017).

269. CAL. NAT. RES. AGENCY, *supra* note 64, at 155.

270. *See* Roger Showley, *Port Approves Seaport Redeveloper*, SAN DIEGO UNION TRIB. (Nov. 8, 2016, 5:00 PM), http://www.sandiegouniontribune.com/business/growth-development/sd-fi-seaport team-20161107-story.html; Bianca Torres, *Treasure Island is Set to Become San Francisco's New $5 Billion Neighborhood*, S.F. BUS. TIMES (June 24, 2016, 9:58 AM PDT), http://www.bizjournals. com/sanfrancisco/news/2016/06/24/5-billion-san-francisco-treasure-island-structures.html; CITY & CTY. OF SAN FRANCISCO, *supra* note 64, at 7.

271. *See* CAL. NAT. RES. AGENCY, *supra* note 64, at 179; CAL. COASTAL COMM'N, *supra* note 64, at 38.

272. *See generally* CAL. NAT. RES. AGENCY, *supra* note 64; CAL. COASTAL COMM'N, *supra* note 64; CITY & CTY. OF SAN FRANCISCO, *supra* note 64; CITY OF CARLSBAD, *supra* note 64.

community resiliency outside the quintessential engineering and adaption paradigm. For example, community cooling centers to stave off urban heat island impacts are just as necessary to preserve quality of life as engineering shorelines and levees. Once jurisdictions have these plans in place, implementation can occur through sea level rise zoning ordinances as well as defining project-level performance standards in the building code.[273] These standards must address building resiliency—such as locating mechanical and electrical equipment on the second rather than ground floor. But they must also manage health impacts for residents—for instance, by requiring window screenings to prevent vector-borne illnesses. Unlike CEQA, this approach ensures not just that mitigations will be imposed, but also that the jurisdiction decides on a comprehensive approach that consistently and holistically protects its population.

To create communities that are both adaptive to sea level rise and provide healthy air to residents, jurisdictions need more than CEQA's myopic focus on the individual project. In this way, the *CBIA* decision offers a new way forward. California need only take it.

273. *See, e.g.*, JESSICA GRANNIS, GEORGETOWN CLIMATE CTR., ZONING FOR SEA LEVEL RISE: A MODEL SEA-LEVEL RISE ORDINANCE AND CASE STUDY OF IMPLEMENTATION BARRIERS IN MARYLAND 7 (2012), http://www.georgetownclimate.org/files/report/Zoning%20for%20Sea-Level%20Rise%20Executive%20Summary%20Final.pdf.