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IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA

FIRST APPELLATE DISTRICT

DIVISION FOUR

NO WETLANDS LANDFILL EXPANSION et al., Plaintiffs and Respondents, v. COUNTY OF MARIN et al., Defendants and Appellants; REDWOOD LANDFILL, INC., Real Party in Interest and Appellant.	A137459 (Marin County Super. Ct. No. CIV 090198) ORDER MODIFYING OPINION AND DENYING REHEARING [NO CHANGE IN JUDGMENT]

BY THE COURT:

The petition for rehearing is denied. The opinion filed December 12, 2014, is modified by deleting footnote 16 of the original opinion, and inserting the following footnote 16 in its place:

> We disagree with the landfill opponents' argument that the submission of this letter and its attachments was improper. First, the material was included in the administrative record before—albeit very shortly before—the EIR was certified. (§ 21167.6, subd. (e)(6) [all written comments submitted in connection with project part of administrative record]; cf. *CBE*, *supra*, 184 Cal.App.4th at p. 88 [improper to rely on expert report based on undisclosed data "restricted to [expert's] eyes only" and submitted after EIR certified by city planning commission].) Second, in submitting the letter and its attachments, Redwood was responding to issues already raised during environmental review. Thus, the landfill opponents are incorrect in contending that the potential significant environmental impacts were left

undisclosed until late in the process and never analyzed. (E.g., *Vineyard Area Citizens*, *supra*, 40 Cal.4th at pp. 441-442.) Finally, and contrary to an assertion made by counsel for No Wetlands at oral argument, *Vineyard Area Citizens* permits an EIR to reference and incorporate previously prepared analyses. (*Id.* at pp. 442-443.)

The modification does not change the appellate judgment. (Cal Rules of Court, rule 8.264(c)(2).)

_____P.J.

Filed 12/12/14 (unmodified version)

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Three groups petitioned for a writ of mandate under the California Environmental Quality Act (CEQA)[1] challenging the certification of an environmental impact report (EIR) issued on a proposed expansion of the Redwood Landfill, a facility that handles most of Marin County's solid waste. The trial court ruled partly in favor of each side, and they both appealed. We conclude that the EIR adequately informed the public about the potential significant environmental effects of the proposed expansion. We therefore affirm in part and reverse in part and remand to the trial court with directions to enter an order denying the petition.

[1] CEQA is set forth in Public Resources Code section 21000 et sequitur. Further statutory references are to the Public Resources Code unless otherwise specified.

I.
FACTUAL AND PROCEDURAL BACKGROUND

This is the second time we have been asked to weigh in on the validity of the certification of the EIR permitting the expansion of the Redwood Landfill. In 2012, we concluded that the certification was not appealable to the Marin Board of Supervisors, and we remanded the case to the trial court to resolve any challenges to the adequacy of the EIR. (*No Wetlands Landfill Expansion v. County of Marin* (2012) 204 Cal.App.4th 573, 580, 586-587 (*No Wetlands I*).) In this appeal, we consider the trial court's rulings on those challenges.

Much of the factual background was discussed in *No Wetlands I*, and we briefly summarize it here. Redwood Landfill, Inc. operates the Redwood Landfill on a 420-acre site near the Petaluma River. The landfill "began receiving waste in 1958," and it accepts most of Marin County's solid waste. It has a solid-waste-facilities permit issued under the California Integrated Waste Management Act of 1989 (the permit). (§ 40000 et seq.) In 1992, appellant Marin County Environmental Health Services (Marin EHS) was certified to be the local enforcement agency by the California Department of Resources Recycling and Recovery (CalRecycle). (§§ 40110, 43200 et seq.)

In 1990, Redwood applied to revise the permit to allow it to expand, increase the amount of waste it could accept, and change its operations, environmental controls, and facility infrastructure. An EIR was prepared (the 1994 EIR), and a revised permit was issued in 1995. Although a copy of the 1994 EIR is not included in the administrative record, it was incorporated by reference and summarized in the EIR giving rise to this appeal.[2]

In March 1998, Redwood again applied to revise the permit to allow it to expand its capacity and change some operations. As the public agency with the principal responsibility for considering the application, Marin EHS assumed the role of lead

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[2] On July 24, 2013, we granted Redwood's request for judicial notice of portions of the 1994 EIR.

agency under CEQA. (Guidelines, § 15367.)[3] It determined that a new EIR was required since the 1995 EIR did not address all of the proposed changes. (Guidelines, § 15162, subd. (a).) This new EIR was prepared, and it recommended a mitigated alternative as the environmentally superior alternative. The mitigated alternative was adopted. The Marin County Planning Commission reviewed the EIR and recommended to Marin EHS that it be certified. In June 2008, Marin EHS certified the EIR.[4]

In October 2008, Marin EHS deemed the application complete and found it to be consistent with applicable state standards. (§ 44010.) CalRecycle concurred in this determination after a public hearing. (§ 44009.) The revised permit was then issued by Marin EHS in December 2008. (§ 44014, subd. (a).)

The following month, the instant lawsuit, a petition for a writ of mandate, was filed by three groups to challenge the permit. These groups included No Wetlands Landfill Expansion (an association of local residents); Sustainability, Parks, Recycling and Wildlife Legal Defense Fund (an environmental organization); and Northern California Recycling Association (another environmental organization).[5] (Code Civ. Proc., §§ 1085, 1094.5.) We shall refer collectively to these groups as the landfill opponents. They sued Marin County, the Marin County Board of Supervisors, and several Marin County agencies including Marin EHS and one of its officers. We shall refer collectively to the defendants as the Marin County entities.

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[3] "Guidelines" refers to the Guidelines for Implementation of CEQA, which are found in California Code of Regulations, title 14, section 15000 et sequitur. All subsequent regulatory citations to the Guidelines are to title 14 of the Code of Regulations.

[4] Public hearings were held on April 28 and May 5, 2008, regarding the Final EIR. A new report titled Redwood Landfill Final Environmental Impact Report, Second Amendment was then prepared to respond to issues raised at those hearings, as well as to incorporate other changes to the EIR. We sometimes refer generally to "the EIR," which encompasses various documents in the administrative record.

[5] The current role of the Recycling Association in this litigation is unclear, as the group does not appear on the notice of appeal and is not listed on respondents' certificate of interested entities or persons.

In October 2010, the trial court granted the landfill opponents' petition based on their argument that they should have been allowed to appeal the EIR's certification to the Marin County Board of Supervisors. We reversed. (*Wetlands I, supra*, 204 Cal.App.4th at pp. 586-587.) On remand, the trial court ruled in December 2012 that the EIR was substantively flawed, and it again granted the landfill opponents' petition. Redwood timely appealed, and Marin County filed a notice of joinder.[6] The landfill opponents filed a timely cross-appeal.

II.
DISCUSSION

A. An Overview of CEQA's EIR Requirement.

The Legislature intended CEQA to provide the fullest possible protection to the environment within the reasonable scope of the statutory scheme. (*California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 978.) The EIR is a mechanism " 'to force informed decision making and to expose the decision making process to public scrutiny.' " (*Ibid.*) Its purpose is to inform the public and government officials of the environmental consequences of decisions before they are made. (*Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 564.) The EIR " 'is the heart of CEQA' " (Guidelines, § 15003, subd. (a)), and it protects both the environment and informed self-government. (*Goleta Valley*, at p. 564.)

"[A] public agency is not required to favor environmental protection over other considerations, but it must disclose and carefully consider the environmental

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[6] Generally, a party may not simply file a notice of joinder but must file a notice of appeal in the trial court to perfect an appeal from an appealable order or judgment. (Cal. Rules of Court, rule 8.100(a)(1); cf. rule 8.200(a)(5) [party to appeal may join in appellate brief]; but see *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal.App.4th 899, 909 (*Rialto Citizens*) [city and its redevelopment agency "join[ed]" retail store's appeal in CEQA case].) Because the joinder here was filed well within the time to appeal and without objection, we may and do construe it as a notice of appeal and treat the Marin County entities as appellants and cross-respondents, as they identify themselves in the appellate briefs signed by county counsel. (Rule 8.100(a)(2) [notice of appeal must be liberally construed and is sufficient if it identifies judgment or order appealed from].)

consequences of its actions, mitigate or avoid adverse environmental effects if feasible, explain the reasons for its actions, and afford the public and other affected agencies an opportunity to participate meaningfully in the environmental review process." (*Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 466-467 (*Ballona Wetlands*).) An EIR must include a detailed statement summarizing (1) all of a project's significant effects on the environment, (2) any unavoidable or irreversible significant effects on the environment, (3) mitigation measures, (4) alternatives to the proposed project, and (5) the growth-inducing impacts of the proposed project. (§ 21100, subd. (b).) All of these requirements, except the last, are implicated in this appeal.

B. The Standards of Review.

Our review of the administrative record for error in a CEQA case, as in other mandamus cases, is the same as the trial court's. (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 427 (*Vineyard Area Citizens*).) That is, we review the public agency's action, not the trial court's decision. (*Ibid.*) In reviewing the agency's action, our inquiry shall extend "only to whether there was a prejudicial abuse of discretion." (§ 21168.5.) An abuse of discretion may be established in one of two ways: (1) if the agency did not proceed in a manner required by law or (2) if its determination or decision was not supported by substantial evidence. (*Ibid.*) "Judicial review of these two types of error differs significantly." (*Vineyard Area Citizens*, at p. 435.)

We review de novo whether the agency used the correct procedures, and we scrupulously enforce all legislatively mandated CEQA requirements. (*Vineyard Area Citizens*, *supra*, 40 Cal.4th at p. 435.) "The failure to provide information required by CEQA in an EIR is a failure to proceed in a manner required by law. [Citation.] The failure to comply with CEQA's procedural or information disclosure requirements is a prejudicial abuse of discretion if the decision makers or the public is deprived of information necessary to make a meaningful assessment of the environmental impacts." (*Ballona Wetlands*, *supra*, 201 Cal.App.4th at p. 468.)

We accord greater deference, however, when we review the agency's factual conclusions for substantial evidence. (*Vineyard Area Citizens*, *supra*, 40 Cal.4th at p. 435.) Substantial evidence "includes fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact," but it does not include "argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous, or evidence of social or economic impacts that do not contribute to, or are not caused by, physical impacts on the environment." (§ 21080, subd. (e)(1), (2).) Substantial evidence is defined by the Guidelines as "information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached." (Guidelines, § 15384, subd. (a).) In reviewing for substantial evidence, we may not set aside the approval of an EIR on the ground that a different conclusion would have been equally or more reasonable. (*Vineyard Area Citizens*, *supra*, 40 Cal.4th at p. 435.) Our job " 'is not to weigh conflicting evidence and determine who has the better argument.' " (*Ibid.*) We do not consider the correctness of an EIR's conclusions but instead pass only upon whether it is supported by substantial evidence and is sufficient as an informative document. (*Ballona Wetlands*, *supra*, 201 Cal.App.4th at p. 468; *Concerned Citizens of South Central L.A. v. Los Angeles Unified School Dist.* (1994) 24 Cal.App.4th 826, 835-836 (*Concerned Citizens*).)

"Technical perfection is not required" in an EIR, and we look "not for an exhaustive analysis but for adequacy, completeness and a good-faith effort at full disclosure." (*Rio Vista Farm Bureau Center v. County of Solano* (1992) 5 Cal.App.4th 351, 368.) An EIR is presumed to have complied with the statute (§ 21167.3, subd. (b)), and the plaintiff challenging an EIR has the burden to prove otherwise. (*Concerned Citizens*, *supra*, 24 Cal.App.4th at p. 836.)

With these general principles and the relevant standards of review in mind, we turn to the issues raised by the parties.

C. The EIR's Discussion of a Nonspecific Alternative Off-Site Project Was Adequate.

1. The 1994 EIR's Discussion of a Possible Off-site Alternative.

According to the 1994 EIR, a new landfill could not be developed on about two-thirds of Marin County because the land consists of urban centers, open-space preserves, wetlands, county conservation zones, or areas subject to 100-year flooding. The report discussed how the county had identified five possible alternative landfill sites in 1988 as part of a solid-waste management plan. The five sites all (1) were accessible to existing and adequate roads within Marin County, (2) measured more than 250 acres, (3) included canyon areas that were confined, with limited drainage basins, (4) had topographic features favorable to site grading and waste disposal, with slopes generally less than 20 percent, (5) were situated away from permanent creeks or areas subject to flooding or high groundwater conditions, and (6) had low visibility, were compatible with adjacent land uses, and had low potential for negative public reaction. The 1994 EIR noted that any new alternative site would be required to comply with federal regulations.

The 1994 EIR analyzed the five selected locations as possible alternatives to the expansion of the permit then under consideration, and it concluded that they would result in greater potential environmental harm.

2. The Final EIR's Description of an Off-site Alternative.

Redwood did not re-analyze these five alternative locations in its EIR for the current permit expansion. Instead, the final EIR briefly summarized the 1994 EIR's findings, and it again rejected these locations, reasoning that they were unlikely to substantially reduce or avoid the environmental impacts of the current permit expansion.

The final EIR also took an approach that had not been taken in the 1994 EIR by analyzing a hypothetical off-site alternative.[7] This hypothetical was an "unidentified landfill site" that would meet minimum criteria from a 1995 siting element for Marin

[7] In addition, the final EIR analyzed four other alternatives that are not challenged by the landfill opponents.

County and its cities.[8] Marin EHS explained that the purpose of the analysis was to evaluate whether it would be preferable to gain more landfill capacity by expanding the existing site or by establishing a new landfill somewhere else in the county, and that the EIR "need not specify a particular location . . . for an effective, though general, comparison." In doing so, the EIR essentially recognized that *any* new landfill meeting the required criteria, regardless of its location, would result in significant environmental effects.

According to the EIR, the first goal of the 1995 siting element was to assure 15 years of disposal capacity for Marin County. The element also listed 10 criteria that needed to be considered for any new site. These criteria were that the site should (1) not be on an earthquake fault, (2) not be in a 100-year flood plain, (3) be at least five feet above the highest anticipated ground-water level, (4) be in a location authorized for a solid-waste facility under the applicable city or county general plan, (5) be compatible with land uses specified for adjacent property covered by different general plans, (6) be at least 5,000 or 10,000 feet away from any airport runway, depending on the type of aircrafts that use the runway, (7) comply with federal, state, and local laws, (8) not cause a net loss of wetlands, (9) not be where it could harm water quality, and (10) not be in a stream-conservation area.

The EIR assumed that the hypothetical alternative "would be located in a remote upland area zoned for agriculture, with close proximity to the U.S. 101 corridor, and without incompatible adjacent land uses." In describing the types of environmental impacts that could be expected, it mentioned that any alternative site would unavoidably impact views and the visual character of the selected land, impose greater construction-related impacts on air quality than the planned project, impact biological resources in an area zoned for agricultural use, alter the hydrology of the selected site, likely conflict with several policies in the agricultural element of Marin's countywide plan, require

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[8] Under the California Integrated Waste Management Act, counties must prepare an integrated waste management plan containing several elements, including one for source reduction and recycling. (§§ 40900 et seq., 40901, 40912, 40950.)

public services and utilities where they are not likely currently provided, possibly impact recreational uses negatively, and possibly disturb cultural and mineral resources. Still, the EIR pointed out that the alternative site would provide environmental advantages because it would be required to satisfy applicable regulations requiring the landfill to be lined, and it would result in fewer mitigation measures than would be required by expanding the current permit.

The EIR concluded that the effects on public health and safety as well as transportation and traffic would be about the same at the off-site alternative as those expected from the proposed project. But the off-site alternative was ultimately rejected because its environmental impacts were greater than those of the mitigated alternative that was eventually adopted.

3. The EIR Sufficiently Analyzed an Off-site Alternative.

The landfill opponents claim that by failing to identify a specific location for the off-site alternative, Marin EHS deprived the public of an opportunity to meaningfully comment on the alternative. They also claim that the EIR's conclusion that the "off-site alternative is infeasible" was not supported by substantial evidence. We disagree with both contentions.

One goal of CEQA is to identify both significant environmental effects of a proposed project and feasible alternatives that would avoid or substantially lessen those effects. (§ 21002.) To further that goal, an EIR must consider and analyze project alternatives that would reduce adverse environmental impacts. (§§ 21061, 21100, subd. (b)(4); *In re Bay-Delta etc.* (2008) 43 Cal.4th 1143, 1163.) The Guidelines provide that an EIR "shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." (Guidelines, § 15126.6, subd. (a).) But the Guidelines specify that "[t]here is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason." (*Ibid.*; see also *In re Bay-Delta etc.*, at p. 1163.) The rule of reason "requires the EIR to set

forth only those alternatives necessary to permit a reasoned choice." (Guidelines, § 15126.6, subd. (f).) "The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project." (Guidelines, § 15126.6, subd. (d).)

The parties' dispute boils down to whether it was reasonable for the EIR to analyze an off-site alternative without specifying a particular location, other than referencing and summarizing the five locations discussed in the 1994 EIR. We conclude it was reasonable to do so under the circumstances. There is "no authority or rationale for an inflexible rule that the availability of other sites always must be considered or that it never need be considered. Situations differ; what is reasonable in one case may be unreasonable in another. It is necessary to examine the particular situation presented to determine whether the availability of other feasible sites must be considered in the EIR." (*Citizens of Goleta Valley v. Board of Supervisors* (1988) 197 Cal.App.3d 1167, 1179.) We agree with Redwood and the Marin County entities that CEQA and the Guidelines do not invariably compel all EIRs to consider off-site locations because particular circumstances may render such a consideration reasonably unnecessary. (*Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477, 491 [CEQA does not expressly require a discussion of alternative project locations].)

The EIR's consideration of the hypothetical alternative location here was reasonable. The landfill opponents claim that Marin EHS "refused to provide an actual location, thus depriving the public of an opportunity to meaningfully comment on the off-site alternative," apparently suggesting that Marin EHS was hiding information about a particular viable off-site location. But they direct us to no evidence supporting such a suggestion. (§ 21080, subd. (e)(1) [substantial evidence includes "reasonable assumption" based on fact].) Redwood and the Marin County entities explain that the nonspecific off-site alternative was evaluated "at a conceptual level for purposes of providing additional information." This approach was taken because five specific sites had been considered and rejected in the 1994 EIR, and the siting element required any new site to be able to accept waste for 15 years and be suitable under the 10 criteria. We

conclude that Marin EHS sufficiently considered and analyzed a range of reasonable project alternatives that would reduce adverse environmental impacts. (§ 21061; Guidelines, § 15126.6, subd. (a).)

The landfill opponents rely on *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal.App.4th 713, but this reliance is misplaced. In *San Joaquin Raptor*, the development consisted of 633 single-family homes, a commercial area, a park, and a district office building and meeting hall, to be located on 154.24 acres north of an unincorporated community in Stanislaus County. (*Id.* at p. 718.) The EIR's only discussion of a possible alternative site was a statement that there were " '*numerous* alternative sites for the project, including existing incorporated cities, other unincorporated communities, and proposed new communities.' " (*Id.* at p. 736, italics added.) After acknowledging the availability of numerous alternative sites, the EIR failed to clearly identify any in particular, and it simply concluded that "[t]he impacts associated with this development would be much the same if implemented at alternative sites . . . ." (*Ibid.*) *San Joaquin Raptor* concluded that the EIR "did not adequately identify and analyze the feasibility of *admittedly available alternative sites*." (*Ibid.*, italics added.) In contrast, here there are no identified available alternatives other than those discussed in the 1994 EIR. The options of siting a large new and legally compliant landfill to serve Marin County, where at least two-thirds of the county is inappropriate for such a facility, are fewer than the options of siting a community development in unincorporated Stanislaus County. Moreover, unlike the short, cursory summary of potential off-site alternatives in *San Joaquin Raptor*, the EIR here listed all the criteria for a new landfill and analyzed the serious environmental effects that such a new landfill—wherever it was located—would present. (Cf. *ibid.*) We conclude that the EIR's analysis of the hypothetical alternative under the circumstances of this case does not warrant setting aside the EIR.

We also reject the landfill opponents' argument that there was insufficient evidence to support the EIR's finding that an off-site alternative was infeasible. This contention is based on their argument that the EIR improperly failed to identify the

alternative's specific location, an argument we already have rejected. This case is distinguishable from *Center for Biological Diversity v. County of San Bernardino* (2010) 185 Cal.App.4th 866, upon which the landfill opponents rely. The EIR in that case analyzed the potential environmental effects of a proposed open-air facility for composting materials derived both from plants and human waste. (*Id.* at pp. 874-875.) It rejected an enclosed facility as uneconomical and impractical because it would cost anywhere from 28 to 41 times the cost of a conventional facility. (*Id.* at pp. 876-877.) These findings were based solely on an unsupported memorandum from an environmental-consulting firm, and the county failed to respond to information provided during the review process indicating that there were enclosed facilities operating in Los Angeles and Riverside Counties, as well as in other locations throughout the country. (*Id.* at pp. 876-877, 884.) The court concluded that the EIR was inadequate because the memorandum omitted vital information and there was no evidence that the alternative was technologically infeasible or impractical on account of additional costs. (*Id.* at pp. 883-885.) In contrast, the landfill opponents here do not challenge any specific finding about the off-site alternative, only that the EIR's conclusions were speculative because no specific location was identified. Because it was reasonable under the circumstances to analyze a hypothetical location in addition to those considered in the 1994 EIR, the EIR was not deficient for failing to identify a particular off-site alternative location.

D. The EIR Did Not Improperly Defer Mitigation Measures to Address Potential Sea-level Rise and Groundwater Contamination.

1. Summary of Applicable Law.

As we have discussed, one of CEQA's purposes is to help public agencies identify both significant environmental effects of proposed projects and feasible mitigation measures that would avoid or substantially lessen those effects. (§ 21002.) An agency should not approve a proposed project that will significantly affect the environment if there are feasible mitigation measures that would substantially reduce those environmental effects. (§§ 21002, 21002.1, subd. (b); Guidelines, § 15021, subd. (a)(2);

Ballona Wetlands, *supra*, 201 Cal.App.4th at p. 466.) CEQA thus mandates that an EIR include a detailed statement describing proposed mitigation measures. (§ 21100, subd. (b)(3); Guidelines, § 15126.4.) In general, formulating mitigation measures should not be deferred until some time in the future. (Guidelines, § 15126.4, subd. (a)(1)(B).) "However, measures may specify performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way." (*Ibid*.)

Although "[t]here is not a single, all-encompassing statement of the judge-made exception to the general rule prohibiting the deferral of the formulation of mitigation measures" (*POET, LLC v. State Air Resources Bd.* (2013) 218 Cal.App.4th 681, 735), we summarize the principles that apply here. "[W]hen, for practical reasons, mitigation measures cannot be fully formulated at the time of project approval, the lead agency may commit itself to devising them at a later time, provided the measures are required to 'satisfy specific performance criteria articulated at the time of project approval.' " (*Rialto Citizens*, *supra*, 208 Cal.App.4th at p. 944, italics omitted.) Mitigation measures improperly defer environmental assessment where they rely on "tentative plans for future mitigation after completion of the CEQA process." (*Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 92 (*CBE*).) "An EIR is inadequate if '[t]he success or failure of mitigation efforts . . . may largely depend upon management plans that have not yet been formulated, and have not been subject to analysis and review with the EIR.' [Citation.] 'A study conducted after approval of a project will inevitably have a diminished influence on decisionmaking. Even if the study is subject to administrative approval, it is analogous to the sort of post hoc rationalization of agency actions that has been repeatedly condemned in decisions construing CEQA.' " (*Ibid.*) Where an EIR improperly defers analysis of mitigation measures, the approving agency abuses its discretion by failing to proceed as required by law. (*Id.* at pp. 89-90; § 21168.5.)

Lead agencies have been allowed to defer formulating specific mitigation measures where they: "(1) undertook a complete analysis of the significance of the

environmental impact, (2) proposed potential mitigation measures early in the planning process, and (3) articulated specific performance criteria that would ensure that adequate mitigation measures were eventually implemented." (*CBE*, *supra*, 184 Cal.App.4th at p. 95.)

2. The EIR Did Not Improperly Defer Mitigation of Projected Sea-level Rise.

a. Background

Redwood Landfill "is located in flat, low-lying, drained marshlands," and it "is surrounded by a complex network of natural and manmade surface water bodies including ditches, ponds, creeks, and sloughs." It is bound on its northern and eastern sides by San Antonio Creek, which in turns flows to the Petaluma River and eventually into San Pablo Bay.

The EIR lists several environmental impacts of the proposed project related to hydrology and water quality. One of them is potential flooding of areas proposed for "composting and co-composting operations" and relocated administration facilities, which will be located within a 100-year flood plain (identified as impact No. 3.5.6 in the "Redwood Landfill Solid Waste Facilities Permit Revision Mitigation Monitoring and Report Program," dated November 17, 2008). To address this potential effect, the EIR contains four mitigation measures, one of which is challenged by the landfill opponents.

Protecting the landfill from flooding is not a new concern. An earthen levee system that reportedly dates from the 1940s sits along the edge of San Antonio Creek. The levee system has been periodically raised and maintained. The first mitigation measure directed at preventing flooding (No. 3.5.6a) is meant to address flooding concerns identified in impact No. 3.5.6. It states that the current elevation for a 100-year flood is about six to seven feet above sea level, and it calls for raising the height of the exterior levee to nine feet above median sea level and increasing the width of the levee to 10 feet, with completion by December 31, 2011. The landfill opponents do not challenge this mitigation measure.

They also do not challenge two additional mitigation measures meant to ensure that levee improvements are designed properly. By way of background, Redwood had

planned for several years to raise the entire length of the levee to nine feet above mean sea level as part of the plans approved in connection with the 1994 EIR. In November 2006, construction was completed on a section of the levee raising it to 9.5 feet above mean sea level. The following month, a 350-foot portion of the newly upgraded levee failed. According to Redwood, the failure did not result in any unauthorized flooding or discharge into San Antonio Creek. An engineering analysis concluded that the bay mud at the location could not support the weight of the reconstructed levee. A temporary repair was made, and the engineers recommended recalculating the strength and stability of the structure "using the correct, established factors and methods."

As part of the EIR process at issue here, it became clear that mitigation measures were necessary to ensure that the levee repair and future levee upgrades were adequately designed and constructed. The final EIR second amendment included two measures (Nos. 3.5.6b and 3.5.6c) aimed at studying the slope stability of levee upgrades to determine whether remedial action was necessary and to ensure that future upgrades were properly designed and constructed. Again, the landfill opponents do not challenge those two measures.

But the landfill opponents do challenge mitigation measure No. 3.5.6d, which is aimed at protecting the landfill against future rises in sea levels caused by global warming. Sea-level rise and fluctuations in tides affect the Petaluma River, near the Redwood Landfill property. During the EIR process, Redwood acknowledged the possibility of having to raise the levee system even higher to account for settling and accumulating underlying bay mud and to account for sea-level rise due to climate

change.[9] The Intergovernmental Panel on Climate Change estimated a rise in the global sea level of between 0.9 to 1.4 feet by the end of this century, and a more dramatic rise of up to 32.8 feet after the 21st century.[10]

Mitigation measure No. 3.5.6d provides that before project approval Redwood "shall prepare and submit to [Marin EHS] and the San Francisco Bay Regional Water Quality Control Board a plan for long-term flood protection of the site. The plan will include a consideration of feasible options for achieving protection from the 100-year flood in the face of rising sea level[s] and increased flood frequency and intensity. The plan shall include selection of the preferred method or methods for achieving flood protection, and both a schedule and financial assurances for their implementation. The engineering basis for the plan shall be independently peer reviewed by a Registered Geotechnical Engineer prior to submittal for approval. The plan will be drafted and then updated every 5 years during the remaining operational life of the landfill and the postclosure maintenance period to ensure that it is current with the most recent and broadly-accepted predictions for flood levels, following consultation with the U.S. Geological Survey, the San Francisco Bay Conservation and Development Commission, and other monitoring agencies that track bay and ocean levels and that may provide estimates of mean sea level rise and areas subject to future inundation." Adoption of all four measures was meant to ensure that potential flooding was reduced to a less-than-significant level.

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9 Citing *Ballona Wetlands*, *supra*, 201 Cal.App.4th at pages 473 to 474, Redwood and the Marin County entities briefly contend that the EIR had no duty to analyze or mitigate the environment's effect on the project (as opposed to the project's effect on the environment). But *Ballona Wetlands* is distinguishable because, although the EIR may not specifically say so, future sea rise here presumably would not only impact the project but would also impact the environment by contaminating waterways. (Cf. *Parker Shattuck Neighbors v. Berkeley City Council* (2013) 222 Cal.App.4th 768, 782-785 [questioning whether CEQA regulates environment's effect on project, as opposed to project's effect on environment].)

10 To be clear, the landfill is located miles from the ocean. The apparent concern is that as ocean levels rise, so too will San Pablo Bay and the waterways adjacent to the landfill that feed into the bay, all of which are "subject to tidal influence."

As part of implementing mitigation measure No. 3.5.6d, Geosyntec consultants prepared a long-term flood-protection plan for Redwood dated October 16, 2008. The plan noted that "the study of climate change and its effects on local tidal fluctuation and runoff is a rapidly developing field," and it stated that every five years the plan would be reevaluated and reissued to incorporate and address new information. The then-current proposed exterior levee design at the Redwood Landfill was "a 9+ ft minimum elevation above . . . the nationally referenced mean sea level . . . ." By contrast, the peak stage for a 100-year storm was calculated at 6.3 feet. The plan analyzed existing sea-level projections and concluded that nearby water was not expected to top the current levees. On the other hand, levee improvements would be needed after "about 2015 to 2030" in order to ensure two feet of space between projected river peak and the top of the levee. The plan stated that Redwood's levees were expected to provide sufficient flood protection for the following five to 10 years, and exterior levees would then need to be enlarged to account for ongoing settlement of the levees and sea-level rise. The report listed six different methods to enlarge existing levees and concluded that whichever method was used, "appropriate design, construction, monitoring, and maintenance procedure should be followed." The report concluded that in light of "the uncertainty and continuing research involved in predicting the impacts of climate change on the SF Bay Area, the flood protection estimates should be revisited with each" long-term flood-protection plan. Levees will be surveyed to evaluate the effects of levee settlement, and based on those surveys' updated information, "recommendations for updated levee flood protection elevations, if appropriate, and levee maintenance and enlargement, if needed, will be prepared and implemented."

A different engineering firm provided a peer review of the long-term flood control plan and opined that Geosyntec's evaluation of settlements and research about predicted sea-level rise were "generally appropriate for the site conditions." The firm noted that reviewing and updating the flood-protection plan every five years was appropriate, given the "unknowns associated with sea level rise."

b. Analysis

The parties dispute whether the adoption of mitigation measure No. 3.5.6d improperly deferred CEQA's required environmental assessment.

As an initial matter, we agree with Redwood and the Marin County entities that a very practical reason prevented mitigation measures from being "fully formulated" at the time of project approval: namely, the uncertainty of when and how much sea levels may rise. (*Rialto Citizens*, *supra*, 208 Cal.App.4th at p. 944.) The landfill opponents apparently do not contend otherwise. Thus, the question is whether the measure's performance criteria were sufficiently specific at the time of project approval. (*Ibid.*)

Redwood acknowledges that its levee system must be maintained to protect the landfill from flooding, and it has previously demonstrated a commitment to do so. The EIR continues this commitment by agreeing to study the issue every five years to determine whether the levees should be raised even higher. This strikes us as reasonable in the face of the substantial uncertainties of sea-level rise.

The landfill opponents compare the EIR in this case to the one found inadequate in *CBE*, *supra*, 184 Cal.App.4th 70. In that case, Chevron sought permits to allow its Richmond refinery to process additional types of crude oil. (*Id.* at p. 75.) A draft EIR stated that the project would result in a net increase of 898,000 metric tons of carbon dioxide emissions per year (reportedly the equivalent of the emissions generated by 160,000 cars), but it declined to make conclusions about the possible impacts of the emissions. (*Id.* at pp. 90-91.) After several objections were raised to the draft EIR's treatment of greenhouse gases, the final EIR acknowledged the environmental significance of greenhouse-gas emissions and their effect on global warming, but it did not conclude that the refinery's additional emissions would have a significant effect on the environment. (*Id.* at p. 90.) After the final EIR was issued, "there was an outpouring of public comment" criticizing the downplaying of the effect of greenhouse gases. (*Ibid.*) After the passage of the California Global Warming Solutions Act of 2006 (California Global Warming Act, Health & Saf. Code, § 38500 et seq.) and the publication of a white paper on how to assess greenhouse-gas emissions, a new volume of the EIR was issued

that acknowledged that the increase of 898,000 metric tons of emissions would most likely have a significant effect on the environment. (*CBE*, at p. 91.) The final EIR proposed a mitigation measure to require Chevron, within a year of project approval, to submit to a plan to be approved by Richmond's city council to reduce the additional emissions. (*Ibid*.) The report also listed a handful of *possible* measures to be considered to mitigate the emissions. (*Id.* at p. 92.)

This court found that the mitigation plan was deficient because it "merely propose[d] a generalized goal of no net increase in greenhouse gas emissions and then set[] out a handful of cursorily described mitigation measures for future consideration that might serve to mitigate the 898,000 metric tons of emissions resulting from the Project." (*CBE*, *supra*, 184 Cal.App.4th at p. 93.) The possible mitigation measures were "nonexclusive, undefined, untested and of unknown efficacy," and the only measure of the mitigation plan's success was whether the city council adopted it—"outside of any public process a year after the Project [was] approved." (*Ibid.*) The court concluded that "for kinds of impacts for which mitigation is known to be feasible, the EIR may give the lead agency a choice of which measure to adopt, so long as the measures are coupled with *specific and mandatory performance standards* to ensure that the measures, as implemented, will be effective." (*Id.* at p. 94, italics added.)

Redwood and the Marin County entities contend that the EIR here is distinguishable because the mitigation is plainly set forth in the measure itself: "protection from the 100-year flood in the face of rising sea level and increased flood frequency and intensity." The landfill opponents dismiss this performance measure, claiming it lacks adequate performance criteria because there is no indication how Redwood must design and construct the levees. They acknowledge that the challenged mitigation measure specifies that levees shall continue to be designed in order to protect the landfill from a 100-year flood, but they posit that the measure "could have specified a minimum levee height as a performance standard, which is the performance criteria now for protection against a 100 year flood."

We conclude that Redwood and the Marin County entities have the stronger argument. There were compelling practical reasons not to set a minimum levee height at the time the EIR was prepared because it was unclear when and how high sea levels would rise, and how that rise might affect the waterways near the landfill. Because of this uncertainty, mitigation measure No. 3.5.6d requires Redwood to review, every five years during the entire remaining operating life of the landfill and postclosure maintenance period, whether known sea-level estimates are "current with the most recent and broadly-accepted predictions for flood levels, following consultation with the U.S. Geological Survey, the San Francisco Bay Conservation and Development Commission, and other monitoring agencies that track bay and ocean levels and that may provide estimates of mean sea level rise and areas subject to future inundation." This reference to widely-accepted sea-level predictions is an adequate measure to guide compliance, and we are therefore not persuaded by the landfill opponents' argument that mitigation measure fails to incorporate or refer to any regulatory scheme. (*Oakland Heritage Alliance v. City of Oakland* (2011) 195 Cal.App.4th 884, 906 ["[A] condition requiring compliance with regulations is a common and reasonable mitigation measure, and may be proper where it is reasonable to expect compliance"].)

This case is distinguishable from *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, upon which the landfill opponents rely. In that case, the court faulted an EIR because it included a generalized goal of maintaining biological resources near the proposed project but failed to include any specific criteria or standards to protect those resources. Thus, the success or failure of the mitigation efforts depended on plans that had not yet been formulated or analyzed without any justification for their deferral. (*Id.* at pp. 668-671.) Here, the EIR reveals an obligation on the part of Redwood to protect the levee system from a 100-year flood. Currently, that means keeping the levees nine feet above mean sea level. Given the uncertainty about the timing and extent of sea-level rise, we conclude that this approach is specific enough. (*California Native Plant Society v. City of Rancho Cordova* (2009) 172 Cal.App.4th 603, 621 ["[W]hen a public agency has evaluated the potentially significant impacts of a

project and has identified measures that will mitigate those impacts, the agency does not have to commit to any particular mitigation measure in the EIR, so long as it *commits to mitigating the significant impacts of the project*"], italics added.) This court recently recognized that "premature attempts to evaluate effects that are uncertain to occur *or whose severity cannot reliably be measured* is 'a needlessly wasteful drain of the public fisc.' " (*Citizens for a Sustainable Treasure Island v. City and County of San Francisco* (2014) 227 Cal.App.4th 1036, 1061.)

We agree with Redwood and the Marin County entities that this case is akin to *Sacramento Old City Assn. v. City Council* (1991) 229 Cal.App.3d 1011, where Sacramento's city council (the City) sought to expand its downtown convention center and build an office tower. (*Id.* at p. 1015.) To address concerns about lack of adequate parking, the EIR required a transportation-management plan to be prepared to reduce project-related traffic and parking. (*Id.* at pp. 1019-1020.) The EIR also listed potential mitigation measures and identified seven to be studied, analyzed, and possibly incorporated into the transportation-management plan. (*Id.* at pp. 1021-1023, 1030.) The Court of Appeal rejected the challenge to these measures as inadequate, concluding that the City "did not minimize or ignore the [parking] impacts in reliance on some future parking study" and in fact approved funds for "a major study of downtown transportation." (*Id.* at pp. 1028-1029.) "[F]or kinds of impacts for which mitigation is known to be feasible, but where practical considerations prohibit devising such measures early in the planning process . . . , the agency can commit itself to eventually devising measures that will satisfy specific performance criteria articulated at the time of project approval. Where future action to carry a project forward is contingent on devising means to satisfy such criteria, the agency should be able to rely on its commitment as evidence that significant impacts will in fact be mitigated." (*Ibid.*) As the City recognized in *Sacramento Old City Assn.*, Redwood and the Marin County entities here recognize the possible significant environmental effects of the project and required a financial commitment to offset these impacts. (See also § 43509 [landfill owners required to

calculate costs for closure and postclosure maintenance for as long as solid waste could adversely affect water quality].)

Finally, we reject the landfill opponents' brief argument that sea-level rise was addressed only late in the process. The flood plan was completed prior to project approval, parties were provided access to it before the project was approved, and a coalition of environmental groups (including respondent No Wetlands) commented on it.

In short, we disagree with the trial court's conclusion that the EIR improperly deferred mitigation of sea-level rise.

3. The EIR Did Not Improperly Defer Mitigation to Protect Groundwater.

a. Background

The landfill opponents next challenge mitigation measures meant to protect groundwater from leachate, which is "liquid that has come in contact with or percolated through waste materials and has extracted or dissolved substances therefrom." As with protecting the area from flooding, managing leachate at the Redwood Landfill is not new. A leachate-management plan was developed in 1992, and a leachate collection-and-removal trench was built around the perimeter of the landfill over a 13-year period, from 1991 to 2004. Redwood has annually reported on the leachate trench to the California Regional Water Quality Control Board, San Francisco Bay Region. The landfill also maintains a system to monitor and detect any release of leachate into groundwater, as required by California Code of Regulations, title 27, section 20380, and there has been no verified escape of leachate from the site.

During the comment period, concerns were raised over the effectiveness of the leachate collection-and-removal system. An amended response to comments, dated March 2008, summarized several hypothetical "failure scenarios" in which leachate could escape and identified mitigation measures to prevent these scenarios. One scenario could be caused by a land-filling method that was discontinued by 1970. When the landfill was first opened, the operator used a trench-fill method, whereby trenches were dug, filled with waste, and then covered. Little is known about these past procedures, and it is unclear how deep the trenches were dug. But they may have been dug below the layer of

bay mud (which is less permeable) and into more porous alluvium, which could allow leachate to contaminate groundwater.

The EIR contains two mitigation measures to address the possibility of leachate migrating through old trench fills, and they are both challenged by the landfill opponents. Measure No. 3.4.7i requires an investigation of the trenches and provides, "The applicant shall, through historical research and site investigations, map the location and dimensions (including depth) of all trench fills located at the site. The applicant shall undertake any necessary subsurface investigations to ascertain whether any trench fills were excavated into the Pleistocene Alluvium underlying the Bay Mud. If not, no further action is required. If so, the applicant shall develop and implement a plan to correct this condition. The plan shall be reviewed and approved by the RWQCB [California Regional Water Quality Control Board, San Francisco Bay Region]. The plan may entail: a. installation of leachate extraction wells at sufficient frequency and depth within the old trenches to prevent downward migration of leachate into the underlying alluvium; b. excavation of all waste from the trench and replacement with a liner that meets current regulatory standards; or c. another engineered solution."

A related mitigation measure, No. 3.4.7j, also addresses the possible migration of leachate: "After completion of the study required by Mitigation Measure 3.4.7i, the RWQCB shall make a determination as to whether an improved program to monitor groundwater within the Pleistocene Alluvium that underlies the Bay Mud is warranted to ensure that localized inconsistencies in the hydrogeologic system are considered, and that monitoring data characterize the quality of groundwater under both reference conditions and that which could be contaminated by leachate from the landfill. The applicant shall consult with the RWQCB regarding the need to[] locate and install additional wells, screened in the alluvium, to augment the existing wells (currently there are 4 wells in the alluvium . . .). Since the gradient within the alluvium is tidally influenced, the alluvial well network will be evaluated to define upgradient and downgradient locations (with consideration of tidal influence) in order to properly locate wells. Should additional monitoring be required by RWQCB, a sampling and analysis plan, including schedule,

shall be developed in consultation with the RWQCB, and monitoring results will be added to the facility's semi-annual and annual monitoring reports to the RWQCB. If monitoring reveals that contamination is occurring in the alluvium, the applicant shall develop a remediation plan. The remediation plan shall be reviewed and approved by the RWQCB. Remediation may entail pump and treat methods, treat-in-place methods, or other methods approved by the RWQCB. Treatment shall continue as long as contamination is present or until a water quality objective established by the RWQCB is met."

b. Analysis

The landfill opponents argue that the EIR improperly defers developing a plan to monitor and remediate possible leachate contamination. The challenged mitigation measures, however, are only two of 11 lengthy measures designed to address the concern.[11] The other nine measures call for Redwood (1) to continue ongoing practices to minimize leachate and promote its collection and reuse, (2) to continue monitoring daily activity at the landfill and adhere to steps already in place under the landfill's leak-or-spill contingency plan, (3) to take steps following a "significant seismic or rare rainfall event" to address possible disruption to the leachate systems, (4) to take additional and specific steps in the event leachate is detected, (5) to commence a leachate-pumping program, (6) to update its leak-or-spill contingency plan to accommodate changes in the proposed project, (7) to implement a hydraulic-gradient-monitoring program, (8) to maintain equipment capable of continuing operations during a power outage, and (9) to continue operating the leachate system after the landfill is closed. These mitigation measures, which are unchallenged by the landfill opponents, demonstrate a commitment to keep leachate from contaminating groundwater.

The landfill opponents nonetheless contend, and the trial court agreed, that the two challenged mitigation measures amount to an improper deferral of a complete analysis of

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[11] Impact No. 3.4.7 provides: "If not properly designed, the proposed Leachate Collection and Recovery System . . . could allow leachate to migrate off-site and potentially contaminate off-site groundwater and surface water."

the potential impact on groundwater. We disagree. The opponents again compare this case to *CBE*, *supra*, 184 Cal.App.4th 70. But part of the reason this court found the mitigation measures in *CBE* inadequate was because Chevron acknowledged only late in the process that the emission of greenhouse gases could negatively impact the environment. (*Id.* at pp. 90-92.) While it is true that the two mitigation measures here were introduced only after concerns were raised during the comment period, Redwood never denied the need for leachate management, and it has a demonstrated record of monitoring, managing, and reporting on its leachate system.

The landfill opponents claim that the measures lack "objective criteria or performance standards," such as compliance with a regulatory scheme. But the two measures do not exist in a vacuum and are part of a detailed and ongoing plan to monitor leachate. The current system complies with the California Code of Regulations, and there is no evidence to suggest that the new monitoring system will not. And because there was no evidence of leachate migration, it was reasonable for the EIR to conclude that further study was necessary before further mitigation measures were specified. (*Citizens for a Sustainable Treasure Island v. City and County of San Francisco*, *supra*, 227 Cal.App.4th at pp. 1060-1061 [" 'foreseeing the unforeseeable' is not required, nor is predicting the unpredictable or quantifying the unquantifiable"]; *Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1070-1071 [mitigation measure sufficient where mining company agreed to take corrective action if " 'adverse hydraulic conditions' " detected]; *National Parks & Conservation Assn. v. County of Riverside* (1999) 71 Cal.App.4th 1341, 1366 [reasonable to conclude that further study necessary before requiring fence to protect species from landfill project]; *Towards Responsibility in Planning v. City Council* (1988) 200 Cal.App.3d 671, 681 [adoption of EIR "need not be interminably delayed to include results of works in progress which might shed some additional light on the subject"].)

We conclude that the challenged mitigation measures were adequate.

E. The EIR Sufficiently Considered Potential Health Impacts from Air Emissions.

1. The EIR's Discussion of the Project's Effect on Air Quality.

Solid-waste landfills generate gases formed when organic waste decomposes and when vapors are released from volatile compounds. Decomposition creates methane and carbon dioxide (CO_2). Although incinerating collected landfill gas is considered to be "highly effective in reducing potentially harmful constituents contained in the gas," about 25 percent is not recovered, and its release into the atmosphere "has the potential to contribute to air pollution and to expose people to toxic air contaminants." Landfill gas may contain trace quantities of toxic air contaminants such as benzene and possibly chlorinated hydrocarbons. The contaminants contribute to air pollution, which can cause short- or long-term health problems, including acute respiratory infections, chronic bronchitis, pulmonary emphysema, and bronchial asthma.

Testing at the landfill in June 1988 found trace amounts of benzene, but some of these amounts may have come from vehicle emissions. The testing revealed no chlorinated hydrocarbons. The EIR found that the proposed expansion of the landfill could potentially increase toxic air contaminates because more waste will decompose, composting operations will enlarge, and more diesel trucks and equipment will be used. It calculated that the expansion could result in an increase of about 13 pounds of reactive organic gases. The EIR assumed that, as a worst-case scenario, those new emissions would contain 500 parts per million (by volume) of benzene. Such an increase would result in an increased cancer risk, estimated to cause an additional 1.2 cancer cases for every 100 million people exposed. This was considered "well below the significance threshold of 10 in a million." The increased cancer risk from additional composting emissions was also predicted to be "well below the significance threshold of 10 in a million." But the health risks from increased diesel-truck emissions was estimated to be 18 additional cancer cases for every million people exposed, which "exceeds the significance threshold of 10 new cancer cases for every million people exposed."

The EIR also discussed respirable particulate matter. Particulate matter, or "PM," refers to extremely small solid or liquid particles that can be suspended in the

atmosphere. (*California Unions for Reliable Energy v. Mojave Desert Air Quality Management Dist.* (2009) 178 Cal.App.4th 1225, 1231.) Particulate matter may be measured in microns (a micron is one one-millionth of a meter, a micrometer). (*Id.* at pp. 1231-1232.) Particulate matter made up of particles that are 10 micrometers or less in diameter (PM-10) is considered an air pollutant. (*Ibid.*; 40 C.F.R. § 50.6(c) (2014).) PM-10 "can be further subclassified into fine particles, which are 2.5 micrometers or less in diameter" (PM-2.5). (*California Unions*, at p. 1232; 40 C.F.R. §§ 50.7, 50, appen. L (2014).) The federal Clean Air Act requires the Environmental Protection Agency to prescribe national ambient air-quality standards. (42 U.S.C. § 7409(a), (b).) Separate standards for PM-10 and PM-2.5 have been established (40 C.F.R §§ 50.5(a), 50.7), and areas that fail to meet those standards are designated as nonattainment areas. (42 U.S.C. § 7407(d).) Although the EIR here identified national standards for both types of particulate matter, it did not separately assess the significance of PM-2.5 and PM-10. Instead, it explained that PM-10 includes PM-2.5, and it analyzed only PM-10, explaining that all PM-2.5 was also PM-10.

This approach of analyzing PM-10, without separately analyzing PM-2.5, was consistent with CEQA guidelines prepared in 1999 by the Bay Area Air Quality Management District (BAAQMD), which regulates air quality in the area and at the landfill. BAAQMD "is the agency primarily responsible for assuring that national and State ambient air quality standards are attained and maintained in the San Francisco Bay Area." Its responsibilities include adopting and enforcing rules and regulations concerning air-pollutant sources and monitoring ambient air-quality conditions. Its 1999 CEQA guidelines for preparing EIRs provided threshold significance levels for PM-10, but not separately for PM-2.5.

The EIR quantified the increased emissions generated by the project as follows: 262 pounds per day of reactive organic gases, coming mostly from composting and air drying sludge; 242 pounds per day of nitrogen oxides, coming mostly from vehicle traffic and off-road equipment; and 394 pounds per day of PM-10, coming mostly from fugitive dust generated by landfill operations. These totals exceeded BAAQMD's significance

criteria of 80 pounds for each category, and the impact was considered significant. The EIR concluded that, even with mitigation measures implemented to substantially reduce emissions, it was unlikely the emissions of reactive organic gases, nitrogen oxides, and PM-10 would be reduced below BAAQMD's significance threshold, and the project's combined emissions thus would be considered "significant and unavoidable."

In response to public comment about air-quality and other issues (including greenhouse gas emissions, see *post*, § II.F.), Redwood submitted a letter dated June 9, 2008, to Marin EHS, with several attachments. Marin EHS certified the EIR the next day, on June 10.

2. The Trial Court's Ruling on Air Quality.

The trial court found two deficiencies in the EIR's discussion of air quality. It first acknowledged that the final EIR found that emissions of toxic air contaminates could cause significant health risks but that mitigation measures would reduce the increase of *cancer* risk to less-than-significant level. But it concluded that the final EIR was deficient because it failed to discuss "the increased *non-cancer* health risks from the [toxic air contaminates] or from the other air pollutants." (Original italics.) According to the trial court, there was "no discussion of the increased impact on non-cancer health risks from non-carcinogenic [toxic air contaminates] or from the other air pollutants which EHS found to be significant and unavoidable."

Second, the trial court found that the final EIR was inadequate because it "fail[ed] to analyze the formation and impacts of very fine particulate matter having a diameter of 2.5 microns or less" (i.e., PM-2.5). It based this conclusion in part on information apparently not taken from the administrative record, but instead from the website of the California Air Resources Board (ARB). According to the trial court, the website revealed that "in June 2002 the ARB adopted new ambient air quality standards for PM-10 and PM-2.5, which rules became effective in 2003. Therefore, the different standards for PM-2.5 *were available* at the time of [the final EIR] preparation in July 2005." (Original italics.) The court concluded that the risk of health impacts from PM-2.5 were different from PM-10, "otherwise the ARB would not have bothered to establish different air

quality thresholds for the two emissions." The fact that the ARB's threshold of significance for PM-2.5 was lower than the threshold for PM-10 "suggest[ed]" it was potentially more harmful than PM-10. The court concluded it was "reasonable to expect" Marin EHS to use "the easily available California ARB standards in calculating the threshold of significance for PM-2.5 emissions," and that use of those standards was "probably mandatory." The court concluded that the error amounted to an abuse of discretion because Marin EHS "did not use its best efforts to determine if there was regulatory guidance from another agency that it could use to quantify the health risk from PM-2.5 emissions."

3. The EIR's Treatment of PM-2.5 Was Not an Abuse of Discretion.

We first address the trial court's ruling on the EIR's approach to PM-2.5. Redwood and the Marin County entities argue that the trial court failed to appreciate that the standards the court cited were for ambient air-quality standards and not thresholds of significance to be used for EIRs prepared under CEQA. (E.g., *Citizens for Responsible Equitable Environmental Development v. City of Chula Vista* (2011) 197 Cal.App.4th 327, 334 [where increases in air pollutants are below significance criteria, they are considered to have no significant impact on ambient-air quality].) We agree it was improper for the trial court to set aside an EIR based on its independent research of air-quality standards. "[O]ur Supreme Court has cautioned reviewing courts against performing our own scientific critiques of environmental studies, a task for which we have neither resources nor scientific expertise." (*Eureka Citizens for Responsible Government v. City of Eureka* (2007) 147 Cal.App.4th 357, 372, citing *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 393.) "Our duty is not to pass on the validity of the conclusions expressed in the EIR, but only on the sufficiency of the report as an informative document." (*Eureka Citizens*, at p. 372.)

We cannot say that the EIR's approach in evaluating PM-2.5 was an abuse of discretion since the EIR relied on BAAQMD guidelines in effect at the time the EIR was prepared. (*Rialto Citizens*, *supra*, 208 Cal.App.4th at p. 933 & fn. 15 [EIR's analysis of

air quality reasonable in light of approach recommended by agency responsible for attaining state and federal clean-air standards in region].) The federal administrative decision upon which the landfill opponents rely does not alter our conclusion. (*In the Matter of Louisville Gas and Electric Co.* (Aug. 12, 2009, Petn. No. IV-2008-3), before the Administrator of the U.S. Environmental Protection Agency (EPA).)[12] In considering an objection to the construction of a new coal-fired boiler, the administrator concluded that it was inappropriate to use PM-10 as a surrogate for PM-2.5 *in that case*. The administrator stressed, however, that the decision whether PM-10 is a reasonable surrogate for PM-2.5 depends on "the facts and circumstances of the specific permit at issue," and it provided detailed guidance on how to demonstrate whether PM-10 is a reasonable surrogate for PM-2.5 in a particular case. It was the landfill opponents' burden to prove the EIR's inadequacy (*Save Cuyama Valley v. County of Santa Barbara*, *supra*, 213 Cal.App.4th at p. 1067), and they have failed to do so here.

4. The EIR Adequately Analyzed the Potential Increase in Pollution.

A closer question is whether the EIR adequately analyzed the potential health effects of increased pollution. The Guidelines specify that an EIR "shall identify and focus on the significant environmental effects of the proposed project." (Guidelines, § 15126.2, subd. (a).) "Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion *should include* . . . health . . . problems caused by the physical changes" to the environment. (*Ibid.*, italics added.) The Guidelines further direct an EIR to "[d]escribe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance." (Guidelines, § 15126.2, subd. (b).)

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[12] We take judicial notice of the order (Evid. Code, §§ 452, subd. (c), 459, subd. (a)), although we recognize, as Redwood and the Marin County entities point out, that the decision could not have been relied upon by Marin EHS because it was published a year after the project was approved.

The Fifth District has interpreted Guideline section 15126.2 to mean that an EIR *must* correlate identified adverse air-quality impacts to resultant adverse health effects. (*Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1219 (*Bakersfield Citizens*).) *Bakersfield Citizens* considered the two EIRs of two shopping centers. (*Id.* at p. 1193.) Both EIRs concluded that the shopping centers would have significant and unavoidable direct adverse impacts on air quality. (*Id.* at pp. 1194, 1219.) The court found that both EIRs were deficient because "neither EIR acknowledge[d] the health consequences that necessarily result from the identified adverse air quality impacts. Buried in the description of some of the various substances that make up the soup known as 'air pollution' are brief references to respiratory illnesses. However, there is no acknowledgement or analysis of the well-known connection between reduction in air quality and increases in specific respiratory conditions and illnesses. After reading the EIRs, the public would have no idea of the health consequences that result when more pollutants are added to a nonattainment basin. On remand, the health impacts resulting from the adverse air quality impacts must be identified and analyzed in the new EIR's." (*Id.* at p. 1220.)[13]

Redwood and the Marin County entities point out that the trial court concluded that the final EIR adequately addressed increased *cancer* risks from toxic air contaminants and only inadequately addressed "*non-cancer*" health risks. As to noncancer health risks, they argue that the EIR sufficiently addressed them by pointing to the portions of the EIR explaining the hazard index used to evaluate threshold levels of noncancer health risks. The EIR explains the hazard index "is the ratio of the predicted exposure concentration to a threshold level, as established by [California's Office of

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13 No party petitioned for review in *Bakersfield Citizens*, *supra*, 124 Cal.App.4th 1184. The Fifth District recently relied on the case in setting aside an EIR for a proposed master-planned community for persons age 55 or older in north-central Fresno County, holding that a "simple statement in an EIR that the significant adverse air quality impacts will have an adverse impact on human health fails to comply with" CEQA standards. (*Sierra Club v. County of Fresno* (2014) 226 Cal.App.4th 704, 745.) The Supreme Court has granted review in *Sierra Club* to address "issues concerning the standard and scope of judicial review under [CEQA]." (Review granted Oct. 1, 2014, S219783.)

Environmental Health Hazard Assessment], that could cause adverse health effects." The landfill opponents do not directly counter the argument that the EIR sufficiently addressed noncancer health effects in addition to the cancer risk of toxic air contaminants. (*People v. Bouzas* (1991) 53 Cal.3d 467, 480 [ignoring point in respondent's brief viewed as apparent concession].) We conclude that the EIR's analysis of potential noncancer health impacts from toxic air contaminants was acceptable since the analytical approach was consistent with BAAQMD's guidelines. (*Rialto Citizens, supra,* 208 Cal.App.4th at p. 933.)

But the broader question remains whether it was sufficient for the EIR to state that levels of reactive organic gases, nitrogen oxides, and PM-10 would likely be above BAAQMD's significance threshold of 80 pounds per day, a significant-and-unavoidable effect, without further analysis of the potential health impacts of this increased pollution. The landfill opponents do not dispute that the EIR's discussion of air quality complied with BAAQMD guidelines, and they fail to propose any specific method for an analysis that they would consider to be sufficient. They simply argue that the EIR is deficient under *Bakersfield Citizens, supra,* 124 Cal.App.4th 1184. Redwood and the Marin County entities argue that *Bakersfield Citizens* is distinguishable because the EIR's discussion was consistent with BAAQMD's guidelines, and BAAQMD did not challenge the method used. Moreover, the pollution-control district in *Bakersfield Citizens* expressed concerns that emissions from the proposed project would make it more difficult to attain mandated air-quality standards (*id.* at p. 1216) and had uncertain authority over the project if and when it were to be completed. In contrast, BAAQMD expressed no similar concerns here, and it will continue to have regulatory control authority over the landfill. The landfill opponents counter that BAAQMD's guidelines should not be controlling because they were prepared in 1999, years before *Bakersfield Citizens* was decided in 2004.

After all is said and done, we believe Redwood and the Marin County entities have the better argument. *Bakersfield Citizens, supra,* 124 Cal.App.4th 1184 did not itself offer any specific guidance on how to evaluate air quality, and, unlike BAAQMD,

this court lacks the scientific expertise to provide it. We conclude that an EIR's discussion of potential impacts of a project on air quality that is consistent with then-applicable guidelines of a regional air-quality board should normally be sufficient to satisfy CEQA's disclosure requirements, and in this case it was.

This case also stands in stark contrast with *Berkeley Keep Jets Over the Bay Com. v. Board of Port Cmrs.* (2001) 91 Cal.App.4th 1344, upon which the landfill opponents rely. Relying on a speciation profile published by the California Air Resources Board, the draft EIR in that case recognized that a planned expansion of an airport by the Oakland Port Authority (the Port) would increase toxic air contaminants but stated that the environmental effects of the increase were unknown because there was "no approved, standardized protocol" for assessing the risks, and there were no significance criteria. (*Id.* at p. 1364.) After the draft EIR was circulated, an air-quality expert criticized the speciation profile as being outdated and explained that a newer profile was currently being used. (*Id.* at p. 1365.) The Port then published a response that wrongly suggested that the resources board did not recommend using the newer profile. (*Id.* at pp. 1351, 1365-1366.) The final EIR stated that the public-health impact of toxic air contaminants was unknown, despite the fact that "[v]oluminous documentary evidence was submitted to the Port supporting the assertion that an approved and standardized protocol did exist which would enable the Port to conduct a health risk assessment." (*Id.* at pp. 1367-1368.) Division Two of this court concluded that the Port had not made a sufficient effort to collect data or make further inquiries of environmental or regulatory agencies having expertise on the subject. (*Id.* at p. 1370; see also § 21080.3 [before deciding whether EIR is required, lead agency "shall consult with all responsible agencies"].) "The fact that a single methodology does not currently exist that would provide the Port with a precise, or 'universally accepted,' quantification of the human health risk from [toxic air contaminant] exposure does not excuse the preparation of any health risk assessment—it requires the Port to do the necessary work to educate itself about the different methodologies that *are* available." (*Berkeley Jets*, at p. 1370, original italics.) Here, by contrast, Marin EHS did just that by relying on BAAQMD's CEQA

guidelines. And while the EIR in *Berkeley Jets* "failed to acknowledge the opinions of responsible agencies and experts who cast substantial doubt on the adequacy of the EIR's analysis of" toxic-air contamination (*id.* at p. 1371), there is no such consensus of experts here that the EIR came up short.

We conclude that the EIR's discussion of the potential increase in air pollution satisfied CEQA.

F. The EIR Sufficiently Analyzed Greenhouse Gas Emissions.

1. Background.

Finally, we address the EIR's analysis of greenhouse gas (GHG) emissions. Redwood's final EIR responses to comments amendment dated March 2008 included a 12-page section titled "Greenhouse Gas Emissions and Global Climate Change." The amendment pointed out that since the final EIR was published in July 2005, the Legislature had passed the California Global Warming Act establishing the state's goal of reducing greenhouse gas emissions to 1990 levels by 2020. It also pointed out that in 2006, the Marin County Board of Supervisors adopted the Marin County Greenhouse Gas Reduction Plan, which sets a target of reducing GHG emissions countywide to 15 percent below 1990 levels by 2020. Finally, it remarked that "municipal solid waste landfills are a major source of GHGs, predominantly from fugitive landfill gas emissions, but also from emissions from fossil-fuel powered equipment and vehicles."

After describing the task of measuring the landfill gas generated at the Redwood Landfill as "difficult at best," the response recognized several possible models for doing so. The EIR used the "Landfill Gas Emissions Model" (or LandGEM), a software application with a Microsoft Excel interface that is used by the EPA and also is recommended as " 'good practice' " by the Intergovernmental Panel on Climate Change.

The model uses different variables to calculate gas generation.[14] The values of the variables depend on whether the landfill is arid, conventional, or wet. To estimate emissions, LandGEM can use either default values for these different types of landfills or site-specific data. Here, the default values for a conventional landfill were used. Using that model, the response included a five-page appendix calculating GHG outputs at the landfill for its current site-life estimates.

Redwood presently has a system to collect landfill gas. It monitors the amount and composition of the gas collected and reports the results to BAAQMD as a condition of its permit. The amount of gas captured through the system approximately doubled between 2002 and 2006. Some methane nonetheless escapes into the atmosphere as so-called "fugitive methane emissions." These emissions are made up of gases that are not captured by the collection system or are captured but not destroyed by the landfill's flare system.

Mitigation measure No. 3.2.5c proposed that Redwood apply to BAAQMD for the authority to construct power-generation engines to be fueled by landfill gas capable of producing four to five megawatts of power within two years of the California Integrated Waste Management Board concurring in the solid-waste facilities permit. The engines would replace the landfill's flare system, "increase the overall capacity available to treat landfill gas, and w[ould] also result in the beneficial use of some portion of the landfill gas generated. Operation of the landfill-gas-powered generators w[ould] make the project consistent with Policy 4.2 of the Marin Countywide Plan Community Development element . . . , which calls for exploration and implementation, where possible, of opportunities for cost-effective energy savings that are compatible with other

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[14] The model "uses as inputs the amount of waste placed in the landfill annually; a factor (Lo) for the potential methane generation capacity, which depends on the type and composition of waste placed in the landfill; and a factor (k) for the methane generation rate, which determines the rate of methane generation for the mass of waste in the landfill, and which is related to environmental conditions within the landfill—primarily the amount of moisture. The output of LandGEM is the total predicted annual generation of gases, including CO_2, methane, and [nonmethane organic compounds]." (Italics omitted.)

countywide and community goals." The gas-fired engines were considered as substitutes for electricity generated from other sources. "From this viewpoint, power generation at Redwood Landfill under the Mitigated Alternative will offset GHG emissions associated with power production elsewhere."

Considering all the GHG emissions under the existing permit as compared to the mitigated alternative, the alternative was projected to result in a decrease of nearly 2.2 million metric tons of carbon dioxide equivalent, a drop of about 33 percent as compared with the existing permit. This, of course, would reduce the potential impact on global warming. Still, under the mitigated alternative, the landfill would emit about twice the amount of GHGs in 2020 as it did in 1990. In order to reduce total emissions to at least 15 percent below 1990 levels, two mitigation measures were added. The first, No. 3.2.5f, requires Redwood to develop a GHG reduction plan, and the second, No. 3.2.5g, requires Redwood to continue to operate the landfill's gas-collection system following closure of the landfill and as long as the landfill continues to produce landfill gas.

The final EIR here was certified in June 2008, and the revised solid-waste facility permit was issued in December 2008. More than a year later, on March 18, 2010, Guidelines section 15064.4 became effective. This section provides that in determining the significance of impacts from GHG emissions, a lead agency should consider, among other factors, (1) the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting, (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project, and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. (Guidelines, § 15064.4, subd. (b).)

In response to the landfill opponents' challenges to the EIR's analysis of GHG emissions, the trial court upheld parts of the EIR and struck down others. Both sides

appealed. We address the issues in the order in which they were addressed in the trial court's decision.[15]

2. The EIR Sufficiently Analyzed the Project's Cumulative Effects on Greenhouse Gases.

Guidelines section 15130, subdivision (a) requires an EIR to "discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable . . . ." " 'Cumulatively considerable' means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (Guidelines, § 15065, subd. (a)(3).) This situation arises where a project has multiple possible environmental effects that are limited when considered individually but significant when considered cumulatively. (*Ibid.*) In such a situation, an EIR's discussion of cumulative impacts must include either (1) a "list of past, present, and probable future projects producing related or cumulative impacts," or (2) a "summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect." (Guidelines, § 15130, subd. (b)(1)(A).)

The trial court found the EIR deficient for failing to analyze whether the impact from GHGs was " 'cumulatively considerable.' " The trial court acknowledged that Marin EHS's responses to comments estimated GHG emissions over the life of the project, analyzed the estimated reduction of emissions, and adopted mitigation measures to reduce emissions. It faulted the EIR, however, for not using one of the two methods (list of projects or summary of projections) identified in Guidelines section 15130, subdivision (b). On appeal, Redwood and the Marin County entities contend that the court's assessment was "clearly wrong," because the EIR "plainly relied on a summary of

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[15] The parties devote several pages to whether, under *Rialto Citizens*, *supra*, 208 Cal.App.4th 899, it was necessary to analyze GHGs in the first place, an argument that does not appear connected to any particular challenge to the EIR or necessary to our resolution to the issues raised. The landfill opponents filed a request for judicial notice of a document it argued was relevant to the issue. We now deny the request as moot.

projections in the Countywide Plan." Having reviewed the projections in the EIR and their relation to federal, state, and local guidelines, we agree that the EIR sufficiently analyzed the cumulative effects of the project, and we reject the landfill opponents' three arguments to the contrary.

The landfill opponents first argue that the EIR failed to summarize projections from previously approved planning documents. As we understand their argument, however, they contend that an analysis of cumulative effects should have been global in scale. Because "the scope of the cumulative analysis should be global," they argue, "the list of related projects in only Marin County does not comply with CEQA." They also rely on the statement in *City of Long Beach v. Los Angeles Unified School Dist.* (2009) 176 Cal.App.4th 889, 907 that "[a]n EIR's cumulative impact analysis should include all sources of related impacts, not simply similar sources or projects." We reject this argument because it would be entirely unrealistic to require an EIR's analysis of a regional landfill to identify, let alone analyze, all sources of GHGs, even if limited only to other landfills. We likewise reject the landfill opponents' argument that "the EIR fails to summarize related projects' expected environmental effects." They argue that "[a] summary of related projects' global warming effects would have been reasonable to include in the EIR, especially since the EIR referred to the [Intergovernmental Panel on Climate Change], EPA, and California Energy Commission documents and stated that landfills like the Redwood Landfill are significant greenhouse gas sources." Again, CEQA does not mandate that the EIR here analyze all methane-producing landfills, as the landfill opponents apparently suggest.

Finally, we reject the landfill opponents' argument that the EIR failed to analyze the cumulative impacts of "related projects" on the effects of global warming. We share their concerns about the grave impacts that global warming is expected to bring, both globally and in California. But it does not follow that the EIR here was required to analyze any and all projects that contribute to global warming. And, contrary to the landfill opponents' argument, the EIR sufficiently acknowledged the severity of global warming.

3. Figures Used in the LandGEM Model Were Not an Abuse of Discretion.

As explained above, the EIR used the LandGEM model to estimate landfill-gas emissions, using default values based on the determination that Redwood Landfill is a conventional landfill. The landfill opponents argue that substantial evidence does not support this method, both because Redwood Landfill is a wet landfill (meaning it produces more landfill gas at a faster rate) and because default values were used instead of site-specific data. We agree with the trial court that substantial evidence supports the method that was used.

As we have stressed, it is not the role of a reviewing court to substitute its judgment for that of the agency when reviewing the record for substantial evidence to support the methodology used for studying a potential impact. (*North Coast Rivers Alliance v. Marin Municipal Water Dist. Bd. of Directors* (2013) 216 Cal.App.4th 614, 642-643.) " 'The fact that different inferences or conclusions could be drawn, or that different methods of gathering and compiling statistics could have been employed, is not determinative in a substantial evidence review.' [Citation.] The issue is not whether other methods might have been used, but whether the agency relied on evidence that a ' "reasonable mind might accept as sufficient to support the conclusion reached" ' in the EIR." (*Id.* at p. 642.)

According to the landfill opponents, there was no evidence in the EIR to support its use of default values for a conventional landfill, and it was not until Redwood

submitted a June 9, 2008 letter to Marin EHS in an attempt to "shore up the EIR" that it presented evidence to support the EIR's conclusions.[16]

Although no party raises this issue, we note that the landfill opponents do not specifically object to the use of the LandGEM model, only to the values selected. The administrative record contains a user's guide to the LandGEM model, which could have been used by the landfill opponents to calculate different projections using values they believed were more accurate. Instead, it directs this court to a single table in a section titled "Landfill Gas Capture and Destruction" and complains that one column shows that annual landfill-gas flow increased by more than 100 percent between 2002 and 2006, whereas LandGEM modeling of methane generated over the same period increased by only about 14 percent—without providing any context for these figures or explaining how they affect the other four columns in the table, let alone the other detailed appendix generated using LandGEM.

In any event, sufficient evidence supports the determination that Redwood Landfill may be considered conventional for purposes of LandGEM. The LandGEM user's guide describes wet landfills as "bioreactor landfills where leachate and other liquids are added to accelerate waste decomposition." But the record here shows that leachate is pumped *out* of Redwood Landfill. Although some liquid is then sprayed on the landfill, this is for purposes of dust control, and not to accelerate waste

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16 The landfill opponents characterize this letter and its attachments as improper "post-EIR record packing." But the material was part of the administrative record before the EIR was certified, even if only briefly. (§ 21167.6, subd. (e)(6) [all written comments submitted in connection with project part of administrative record]; cf. *CBE*, *supra*, 184 Cal.App.4th at p. 88 [improper to rely on undisclosed data from oil refinery that was submitted after EIR certification].) Contrary to the landfill opponents' argument, this is not comparable to situations in which potential significant environmental impacts are disclosed late in the process and left unanalyzed. (E.g., *Vineyard Area Citizens*, *supra*, 40 Cal.4th at pp. 441-442 [final EIR contained inconsistent gross-demand figures for water and failed to include or describe relevant demand figures].) Here, Redwood was responding to issues already raised during environmental review. And, contrary to assertions made by counsel for No Wetlands at oral argument, *Vineyard Area Residents* permits an EIR to reference and incorporate previously prepared analyses. (*Id.* at pp. 442-443.)

decomposition. The landfill opponents failed to demonstrate that Redwood Landfill should be considered "wet" for purposes of LandGEM merely by pointing to some evidence that might support such a finding and referencing guidelines for analyzing site-specific data. (*Save Cuyama Valley v. County of Santa Barbara*, *supra*, 213 Cal.App.4th at pp. 1066-1067 [reviewing court accords "considerable deference" to EIR's determinations, presumes them correct, and resolves all reasonable doubt in their favor].)

4. The EIR's Analysis of a Proposed Onsite Power Facility Was Adequate.

We also reject the landfill opponents' challenge to the plan to offset an increase in GHGs with the reduction of GHGs resulting from using engines fired by landfill gas to substitute for electricity generated from other sources. They first claim that the plan to offset the emissions "is nothing more than pure speculation." " 'As with all substantial evidence challenges, an appellant challenging an EIR for insufficient evidence must lay out the evidence favorable to the other side and show why it is lacking. Failure to do so is fatal. A reviewing court will not independently review the record to make up for appellant's failure to carry his burden.' " (*Tracy First v. City of Tracy* (2009) 177 Cal.App.4th 912, 934-935.) The landfill opponents do not meet this burden. The plan to build power-generation engines to be fueled by landfill gas was described in detail as a way to mitigate the increase of GHG emissions. The landfill opponents may not simply claim that there was no evidence to support the plan or contend that support for it was found somewhere in Redwood's "improper" June 9, 2008 letter, without explaining *why* the EIR's plan was lacking. Contrary to the landfill opponents' argument, the plan is an appropriate way to offset an increase in GHG emissions. (E.g., Guidelines, § 15126.4, subd. (c)(3) [lead agencies may consider feasible means of mitigating greenhouse-gas emissions, including off-site measures resulting in offsets that are not otherwise required].)

We also disagree with the landfill opponents' argument that the EIR's plan to offset GHGs relied on an "impermissible future baseline." The Guidelines provide that an EIR "must include a description of the physical environmental conditions *in the*

vicinity of the project, as they exist at the time the notice of preparation is published . . . , from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to an understanding of the significant effects of the proposed project and its alternatives." (Guidelines, § 15125, subd. (a), italics added.) In fact, the EIR here included a detailed description of the physical environmental conditions in the vicinity of the project. Consistent with the Guidelines and established precedent, the EIR used as its baseline "the design, operations, and environmental controls described in the 1995 Solid Waste Facilities Permit and other current permits, based on the 1994 [final]EIR, as well as other applicable permits that have undergone separate environmental review." (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310, 326, fn. 11; *Fairview Neighbors v. County of Ventura* (1999) 70 Cal.App.4th 238, 242-243 [where EIR seeks continuation of operations previously reviewed under CEQA, appropriate to use previously approved activities as baseline].)

In a somewhat confusing argument, the landfill opponents contend that "[e]missions reductions of CO_2 from some undefined, unidentified power plants in a future hypothetical scenario are not legally part of the environmental baseline." This argument apparently contends that the EIR improperly included off-site power plants as part of its baseline. We are not persuaded. The EIR specifically stated that the landfill would begin to generate its own power using landfill gas so that it would not have to rely on power from offsite sources. Thus, the EIR did not use "hypothetical emission reductions" as part of its baseline. We agree with the trial court that the EIR was not deficient in this regard.

The trial court did fault the EIR for failing to estimate the CO_2 emissions from the proposed onsite generation of electricity. According to the EIR: "Inventories of GHG emissions consider CO_2 from decomposition of organic material to be 'biogenic'—a component of the natural cycling of carbon in the biosphere and the atmosphere—and therefore these emissions are not 'counted,' " and the report cited (but did not include)

reference materials supporting this approach. Appellants explain on appeal: "In other words, CO_2 emissions would occur irrespective of whether methane combustion occurs. Accordingly, [landfill gas] derived emissions of CO_2—including CO_2 emissions from a [landfill gas to energy facility]—are considered part of the carbon cycle by all major GHG emission inventory and reporting systems." In the trial court, appellants explained the EIR did not separately calculate the emissions of CO_2 from the proposed facility because authoritative sources did not count natural production of CO_2 as a GHG emission. The trial court sided with the landfill opponents, concluding that "Defendants [did] not specifically cite to the location in the referenced studies or reports that support [the EIR's] methodology."[17]

The landfill opponents contend that the EIR "fails as an informational document" because it did not discuss "CO_2 emissions from combusting methane in the Landfill Gas to Energy system." They argue generally that omitting CO_2 emissions from the EIR "denied the public the right to informed meaningful participation and denied [Marin EHS] the ability to engage in informed decision-making." But they do not specifically address whether the EIR was required to discuss the CO_2 emissions from the new onsite energy system in light of the EIR's approach not to count these emissions because they would displace CO_2 that would be produced naturally through decomposition processes.

We acknowledge the EIR contains a small universe of evidence to support this approach. Redwood and Marin County note that the EIR "relied upon, and cited to, multiple technical reports asserting that biogenic CO_2 is not counted in [greenhouse gas] emission inventories." In their opening brief, however, they specify only two of those reports, which are apparently not contained in the administrative record. Finally in their

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[17] The trial court presumably meant that defendants did not adequately cite to the authorities in the EIR, as opposed to in their opposition brief in the trial court. Redwood and the Marin County entities posit that although the trial court did not cite authority for its ruling, it may have relied on Guidelines section 15148, which provides that any engineering-project reports and scientific documents relied on should be cited in the EIR but not included, and that the EIR "shall cite all documents used in its preparation including, where possible, the page and section number of any technical reports which were used as the basis for any statements in the EIR."

reply brief, they direct this court to a copy of one of the sources, a December 2006 staff report from the California Energy Commission titled "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004."[18] According to the report, "CO_2 and nitrous oxide emissions to the atmosphere occur when municipal solid waste . . . is combusted to make electricity. A portion of the waste stream is biogenic, and these CO_2 emissions are not counted because the carbon is recycled during the growth period of the biogenic materials." They also point to a memorandum dated June 6, 2008, from SCS Engineers, which states: "Carbon dioxide emissions from flaring [landfill gases] or from [internal combustion] engines are considered biogenic in nature and are commonly not counted in GHG inventories, including those at the state and federal level. However, the EIR for this project conservatively included these emissions from the flaring of [landfill gas]. The [final EIR] did not explicitly list GHG emissions from the proposed [internal combustion] engines because emissions essentially do not change from the flaring of [landfill gas]. As such, the level of detail of analysis of potential [greenhouse gas] emissions from the [internal combustion] engines is appropriate. The [final EIR] did disclose that [internal combustion] engines are slightly less efficient than the flares in converting methane to carbon dioxide, so they are likely to have slightly greater methane emissions and slightly lower carbon dioxide emissions."[19] While this discussion may not have been exhaustive, we conclude there is sufficient evidence to support the EIR's methodology as correct, especially since there is no indication it was incorrect.

The landfill opponents argue this court should not rely on the June 6, 2008 memorandum on the grounds that it is conclusory and was submitted late in the process. But, again, they cite no evidence suggesting the inaccuracy of the EIR's premise that CO_2 emissions from the new onsite energy system would largely displace CO_2 that would be

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[18] This court took judicial notice of this and other documents on July 24, 2013, without a determination of relevance.

[19] Appellants also cite to two documents that appear to have nothing to do with calculating CO_2 emissions: an environmental engineer's résumé, along with a response comment that touts the benefits of onsite energy facilities but does not specifically address measuring CO_2 emissions.

produced naturally through decomposition processes. Given that we presume the EIR to be adequate and that it is not our role to substitute our judgment for that of the agency, we conclude that the EIR was sufficient as an informational document in this regard.

III.
DISPOSITION

The trial court's granting the petition for a writ of mandate is affirmed in part and reversed in part. The matter is remanded, and the trial court is instructed to enter, consistent with this opinion, a new and different order denying the petition for writ of mandate. Appellants and real party in interest shall recover their costs incurred on appeal jointly and severally from respondents.

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Humes, J.*

We concur:

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Reardon, Acting P.J.

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Rivera, J.

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* Presiding Justice of the Court of Appeal, First Appellate District, Division One, assigned by the Chief Justice pursuant to article VI, section 6 of the California Constitution.